

**The Role of ICT Volunteers in
Public Communication of Science and Technology**

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Abstract

It is understandable that the function of science and technology (S&T) is to improve the quality of people's life. Public awareness of S&T then has become a high priority in order to introduce innovation, new technologies, etc. S&T communication then has its place in the area of research and development, as an intermediary among scientists / engineers as well as public in providing appropriate information through various channels.

Creative approaches using information and communication technology (ICT) applications are developed to attract public in particular areas. The popularization of social media services are other worth addition to the means of communication with infinite resources from the internet.

One of the programs introduced in Indonesia is the ICT volunteers. Its basic tasks are for education, networking, partnership, socialization and publication. The program is also a mediator in promoting S&T to public that shows interesting and popular content. It copes with the change of a fast-changing world. Besides, the promotion is applied through the local socio culture which public has already familiar, that is done through education and media.

The Ministry of Communication and Information (MCIT) has initiated the program, although it is an independent organization. Collaboration with various partners is recommended through activities of education, advocating, socialization, communication, etc. The efforts taken in developing S&T communication is effective in building a better hub of change agent to support important issues.

Keywords : S&T awareness and communication, ICT application, ICT Volunteer Program.

Introduction

The global economic sustainability depends upon science and technology (S&T) competitiveness, so that S&T become important factor for many nations to improve the quality of people's life. In this sense, spreading knowledge and public awareness of S&T has become a high priority in introducing innovation and technologies. S&T communication placed as an intermediary, stand among scientists, engineers and public in providing appropriate information through various channels. However, their promotion in Indonesia is less persistence. The government has to put initiatives to create programs in order to popularize S&T and to educate public in S&T commonality.

There is no doubt that the advent of information and communication technology (ICT) provides wide range of possibilities on disseminating information, so that creative approaches using ICT applications are envisaged to attract segmented public in particular areas. The fast growth of internet media such as Social Network Services has also made public more familiar with computer and smart phone applications, and other advance technologies. ICT therefore is a powerful catalyst for the communication and the socialization of S&T. ICT access entails to affordability and literacy to the means of communication with infinite resources from the internet, where these factors are not equally developed within provincial areas in Indonesia.

One of the ICT programs for public communication established in Indonesia is the ICT Volunteer Program that has been introduced in July 2011 by the Ministry of Communication and Information Technology (MCIT). The basic tasks of volunteers are for : providing informal education of ICT, developing partnership in ICT business, socialization and publication. The program is also a mediator in promoting S&T to public that shows interesting and engaging ways as well as creative, attractive and in a popular content. They are applied through the local socio culture, which has already been familiar to public. The activities include collaborative efforts of academics, research and development institutes, private sectors, central government / local governments, and communities.

This paper contributes twofold : to the awareness of public communication of S&T and to the promotion of ICT Volunteers Program that has been successfully applied for S&T communication. On the same time, the roles of ICT communities are identified through the program. The activities are carried out in different provinces as well as target group of people. The presentation of the program is followed by analytical judgment before summing up the paper with concluding remarks.

Material and Method

The conceptual framework and methodology developed for this paper covers data collection in relation with : literature reviews, brief overview of S&T communication, different target group of receivers, technology delivered and ICT as the enabler. Factors that have been facilitated and influenced success story of activities are also identified by their program, implementation and target group. Brief case studies as best practices of the programs are identified, in the field of S&T communication applying ICT.

ICT has much to offer access to information and services. ICT could give information of S&T, opportunity to secure new jobs (media, web, programming, data entry, sales), people-friendly working models (tele-working). Besides, ICT offer access to education at all levels and at all times through e-learning; access to finance business, and provides a communication network through email, creation of web sites, chat rooms, distribution lists, etc.

The important role of S&T communication is as a hub for connecting different needs from various types of communities. It can be introduced to public in the consideration such as :

- Development of science and technology can not be separated from the culture of a society, and in larger area the culture of a nation, for the familiarity and local knowledge engagement.
- The use of various media is a way to promote and increase public awareness and their participation in spreading the science and technology knowledge.
- The prerequisite of interesting and engaging ways in promoting S&T to public, coined with creative and attractive content to cope with the fast-changing need.

- Types of communication in the profiles of : competition, festival or exhibition, publication, outreach, science club, science camp, science theatre, training and Workshop for specific users, public discussion and gathering, dissemination and promotion at public space and social media.

ICT Volunteer Program

In light of the need to accelerate the development efforts, The MCIT has built ICT infrastructure access points at strategic areas within districts and sub districts, in order to provide low cost access as well as information services to public. The supports available such as : Community Access Point, Mobile Community Access Point, information society cafe, smart home and smart village, ringing village, etc. With many ICT projects underway, it is important that government should share their ICT strategies, and invite communities to participate in sharing their knowledge, experiences and learning.

The ICT Volunteer Program is a platform to promote ICT sharing strategies and knowledge in a broad range of development fields. It provides the potential scalability to leverage skill needed for education, business and other opportunities. The activities are to provide technical knowledge in the field of ICT security, digital content and ICT applications development. The program requires collaboration among academics, research and development institutes, private sectors, government / local governments, and communities, since it is delivered to certain access points by the MCIT, but should be supported and maintained through collaboration among ICT volunteers for continuous implementation. The collaboration can be made by two or more parties, depend upon the nature of core business has to be put into operation.

For common people, to effectively utilize ICT in their daily activities, training is required as well as a continued support structure, at least for the initial stages. People will feel empowered only if they are able to clearly see the benefits of using ICT and improve the quality of their lives. It is, therefore, the vision of ICT Volunteer Program is to create ICT volunteers as self reliance movement to leading to volunteer organizations that are readily serving public as humanitarian mission for the society, as well as empowering people through socializing, educating and training skills of ICT for the benefits of the nation.

The basic programs of ICT Volunteers are : volunteerism and organization, capacity building, society education on ICT, partnership, socialization and publication.

They are divided into several tasks, such as :

- For education : training ICT knowledge and application, road show to schools, training ICT application to SMEs.
- For partnership : build partnership with central / local government, ICT organization and communities, companies that willing to support ICT volunteers.
- For socialization and publication : socialization in various activities related to ICT, utilization of web sites and social media (Facebook and Twitter).

Some of Initiations of ICT Volunteer Activities

- **Teacher Movement on Internet Literacy:** This is a collaboration of the Indonesia Teacher Association (IGI), the Computing Institutes Association (APTIKOM), and the Indonesia Telecommunication Company (PT Telkom) as a sponsor for community development. The idea is to accelerate the professionalism of teachers in computing and internet literacy, which activities consist of workshop, design and utilization of web site and social media, training of trainers, and the establishment of ICT volunteers in the West Java region, with 500 participants.
- **Technopreneur Goes to School:** This is a collaboration of technology magazine “Komputek” and the Indonesia Telecommunication Company (PT Telkom). The volunteers visit high schools and vocational schools to confer awareness to the students about the updated ICT applications and using ICT for business, such as multimedia, HTML, audio digital, over clocking PC.
- **ICT Literacy for Society:** This is the movement of volunteers in Lampung Province to transfer ICT knowledge to society by using supports provided by the government, i.e. Community Access Point and Mobile Community Access Point. They provide services, internet access and information in certain locations. They also give training in email communication, using social network and blog design, to students, community, and government officials. As e-identity is now being applied in Indonesia, not all operators and public are being familiar with the application and process, so that the volunteers provide training to uplift the knowledge and skill.

- Citizen Journalism: This is a collaboration workshop of Lampung Province, Blog Society and ICT volunteers, with 80 blogger participants. The objective is to promote electronic journalism in a positive way.
- Media Online for Business Prospect: This training was provided by Bali Province in ICT application to SMEs with 100 participants. This ICT training should contribute to developing new business prospect and process as well as expanding income-generating opportunities.

Results

The optimizing of science and technology (S&T) roles can be realized by increasing the awareness of S&T and empowering the ability of local / national S&T. It is necessary to promote a strong bond for both researchers and public communicators to work together for obtaining a high value of results. In more strategic role, champions are needed as well as public communication of S&T acts as the change agent or the intermediary to people.

The differences in resources and capabilities should be identified to access and to effectively utilize ICT for development that exist within and between countries, regions, sectors and socio-economic. However, new technologies have a vast potential for empowerment which needs to be fully exploited as well.

Although the ICT Volunteer Program has been initiated by the Government of Indonesia through the MCIT, but the implementation of the program is merely rely on the initiative actions of the volunteers in the associated areas. There must be champions to deliver the program, to speed up the actions, which can be seen through evaluation of areas that have been actively success.

For the volunteers themselves, they must catch up with the current knowledge, customize the viable ICT in certain areas, and facilitate the ICT implementation. These tasks are not easy, as there are many technologies being promoted by ICT developers. There is also significant expense involved, coupled with uncertainty, make a deterrent to volunteer ICT. Identifying strategies for selecting appropriate technology for their activities are essential as well as evaluating their impact.

Practical factors affect the program in district areas are the inadequate infrastructure, such as unreliable power sources, internet and mobile phone connectivity, poses challenges to the successful implementation of the program. It is important for the volunteers to allocate some time, energy and resources to learn about and discuss the ICT applications with community, to obtain community ideas about using them and to search out solution to challenges.

Conclusions

Novel efforts and initiatives are taken to develop S&T communication, in order to build a better hub of change agent to support the urgent issues as well as the cutting edge of S&T. In order to share specialized knowledge, S&T communication is adjusted to make this knowledge available and understandable by common people within targeted group of age and skill.

The ICT convergence has commonly been adopted by means of multimedia access, mobile devices and other newly advance technologies. Web site, Blog and social media are effective means of S&T communication with unlimited resources from the internet. ICT media could make S&T public communication more effective as an intermediary, to provide appropriate information through various channels. This condition has made the ICT Volunteer Program spread out dramatically through out the regions in Indonesia. Champions of volunteers are always necessary to implement and to accelerate the program based on the demands of public in associated locations.

The age of industry applies S&T communication to open to the future trend and expand creativity, hence to develop information society. The case of ICT media can transform information into useful knowledge and information. It is hoped that the media for S&T communication is not only attractive but is urgently needed for local and global issues.

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