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## รายงานการประชุม

### การประชุมวิชาการบัณฑิตศึกษาระดับชาติ ครั้งที่ 16

วันที่ 29-30 มิถุนายน 2563  
ณ มหาวิทยาลัยศรีปทุม,  
กรุงเทพมหานคร

บรรณาธิการ  
สุกัญญา บุรณเดชาชัย  
ปิยกร หวังมาพร





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สุกัญญา บุรณเดชาชัย และ ปิยากร หวังมหาพร

จัดโดย

สมาคมรัฐศาสตร์แห่งมหาวิทยาลัยเกษตรศาสตร์  
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## **Communication Model of Social Responsibility for Environmental Development: A Case Study of Electronic Waste**

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### **Abstract**

The objective of this academic article is to demonstrate the dangers of electronic waste especially batteries and cell phones and to study the communication model of social responsibility for environmental development with a case study of electronic waste. The study found that the use of cell phones by Thai people has been increased. The electronic waste is dumped with other garbage that jeopardizes humans, animals and environment. In the past, the public and private sectors launched several campaign projects to solve electronic waste problem; however, there was lack of continuity in project management. Hence, it was not successful to change the behavior of Thai people. ChulaLovestheEarth Project is one of the projects that deals with electronic waste continuously. The project uses internet media to distribute and update information. In addition, a variety of communication formats and modes are used; people respond by sending a lot of electronic waste by mail. It is a communication model that creates environmental knowledge and awareness. Moreover, it serves as a guideline for sustainable environmental development projects.

**Keywords:** Electronic Waste, Social Responsibility, Environmental Development

## Introduction

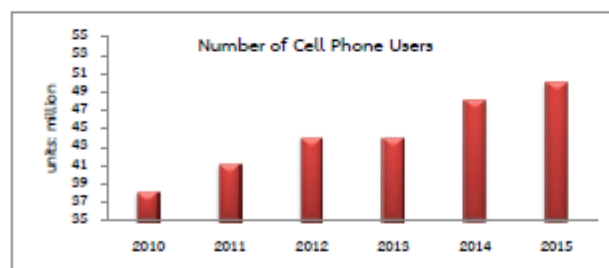
The rapid changes in lifestyles resulted from development and globalization create tremendous impacts: the increased number of population, migration, norms and values, and consumer behavior in luxurious goods and in a variety of complex services. The manufacturers invent and use advanced technology in order to respond to consumers' needs rapidly (Bureau of Environmental Health, 2009). Inevitably, people use electronic products in their daily life. Nowadays, some consumers emphasize modernity. The obsolete or unpopular electronic products are replaced though they are still usable. The succeeding problem is toxic chemicals from electronic waste including heavy metal that is residue and accumulated in living beings and contaminates the environment. This phenomenon is getting more severe (Ministry of Public Health, 2014).

## The Problem of Increased Number of Cell Phones

Thailand has encountered a problem of increased electronic waste because there is no system to completely manage and control electrical and electronic waste. For instance, the collection system of waste from unused electrical and electronic equipment from manufacturers or dealers is still limited. It becomes the burden of local government organization without proper disposal place and disposal system to collect, sort, disassemble, recycle, and dispose. Pollution Control Department (PCD) has collected statistics of waste from electrical and electronic equipment (Buranasingha, 2016).

Cell phone is an electronic equipment that has been invented and innovated all the time. The survey of Electronic Transactions Development Agency (ETDA) in 2016 found that the internet use on cell phone by Thai people is increased to 6.2 hours per day (Manager Online, 2016). Cell phone has become such a powerful tool that Thai people feel it is indispensable. The internet coverage in every province and the cheaper cell phones make Thai people be able to acquire cell phones easily. Statistically, the number of Thai people using cell phones is increased every year as shown in Figure 1.

The statistics of cell phone users show that the number of cell phones is increased every year. This means the amount of electronic waste is increased every year as well. The average lifetime of a cell phone is 3 years (Buranasingha, 2016). The competition in innovation, technology and marketing drives consumers to change cell phone often; cell phones are discards before the end of life.



**Figure 1:** Number of Cell Phone Users

**Source:** National Statistics Office (2015)

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### Where to Dump Unused Batteries

There are no education and creation of conscious mind concerning waste separation in Thailand. Waste separation has not been done efficiently. Majority of people do not understand that electronic waste is hazardous and needs to be handled properly. They do not recognize that electronic waste must be separated from the other wastes (Buranasingha, 2016). There is no system with scientific method to collect, dismantle, separate, recycle and dispose electronic waste. Thailand does not have specialists, knowledge, and technology about electronic waste management. Electronic waste is just landfilled in the areas that have not been designed for hazardous waste. About 90% of electronic waste is dumped with waste from communities (Pollution Control Department, 2012 cited in Phroampak, 2012).

### Danger from Wrong Disposal of Batteries

Poisons Information Center, Ministry of Public Health (n.d.) explains the causes of danger from batteries that the substances used in manufacturing batteries are lead, manganese, cadmium, nickel, mercury and reactant added to cause a chemical reaction. If these poisonous substances are not properly managed, there is a chance of contamination to water source, soil surface, land and atmosphere and spread to humans, plants and animals. The impacts are as follows:

1. Sudden or chronic illness due to contact with the poisonous substances or battery waste. This is found in workers in factory of flashlight or battery or garbage collectors. These poisonous substances get into the body by inhaling dust and vapor and by eating foods contaminated with these substances. Besides, they could be assimilated through skin.
2. Contaminated soil, underground water and nearby water sources for community consumption. The dump of battery waste contaminates soil where water passing through extracts soluble or suspended solids or any other component of the material through which it has passed.
3. Air pollution due to the chemical vapor or dust from burning battery waste. Air pollution is inhaled into the body of garbage collectors, garbage digging villager or people living close to waste disposal sites

Not only that, but the expired batteries also swell. There is a chance that they would explode causing damages to body and assets. If these batteries are not separated from other wastes, it may cause severe destruction from fire over waste pits or from mercury contamination in soil. Statistical report stated that there were 10 times of emergency and pollution accidents from fire over waste pits in 2013.

The big fire incident with large impact to people in history is fire on Phraek-Sa waste pit over 100 rai during 16-22 March 2014. It was a severe fire on waste pit with vast impact and took more than one week to extinguish the fire. Toxic air pollution covered wide communities and developed housing and extended to other areas in such a way that people must evacuate. It was declared as emergency disaster area.

The result of air quality check by Pollution Control Department during the fire incident showed that community with one kilometer around the waste pit had sulphur dioxide higher than the standard 20 to 30 times and small dust particles 350 micrograms per meter cubic, which is 30 times higher than the standard. The people living 1.5 kilometer from the waste pit evacuated. This affected thousands of people's physical and mental health and caused economic loss. More than 2,000 people accused public agencies and related private organizations

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for both civil liability and administrative act. There was a call for the closure of this waste pit and quick revival the environment for safe residence (ThaiPublica, 2014).

Assistant Professor Dr. Pitchaya Ratchadawong, a full-time faculty member from Environment Engineering Department, Faculty of Engineering, Chulalongkorn University, explains the causes of fire at waste pit that there are 3 factors: oxygen, temperature and fuel. Oxygen is all around in atmosphere. The temperature in summer is almost 40 degrees Celsius. With high temperature wet waste becomes dry waste. Dry waste could be fuel. Two causes of fire are 1) environmental cause from waste that is flammable object and 2) Glass or mirror that is able to be a focus of heat. The heat focus makes dry waste burst into flame (Isranews, 2015). Batteries are flammable waste. Generally, battery would not blast because of circuit breaker. However, heat, short circuit, deterioration from use, hydrogen from electrical discharge or imitated battery without production standards could cause battery blast (Manager Online, 2013; Office of Risk Management, Mahidol University, n.d.).

### **The Campaign: Communication Strategy for Environmental Development**

The modification of people's behavior in society is to create realization and conscious mind for responsibility expression. It is not a communication process that could be done by a person. Rather, collaboration from various sectors: public sector, private sector and people is needed to create change. Campaign as a communication strategy is a driving force for effective and concrete development.

The important differences between campaign and public relations are aiming at the communication receivers to change their behavior and persuading people to participate in an activity within a certain time frame. Differently, public relation aims at friendship creation. We see campaign strategy used in driving projects to resolve the country's problems such as fasten seatbelts while driving campaign, reduce the use of plastic bags campaign, etc.

Successful campaign principles are founded on communication elements: sender, message, channel and receiver. Campaign is not one-way communication. But it is a communication with expected feedback. Hence, the leader of the campaign must analyze the elements in communication process in order to send the message to the receiver most efficiently.

The campaign leader as a sender must understand the objectives of the campaign truly. What behavior or attitude of the receivers is expected; this leads to the proper design process of message. It is necessary to analyze the target group to determine its characteristics. Demographic data, i.e. gender, age, education, affect the acceptance of message. For instance, the wash-hand campaign in young children may use colorful cartoon characters to attract their interest. However, it may not be appropriate to use in wash-hand campaign for senior group.

The designed information for the campaign is produced after the sender has studied and analyzed the objectives of the campaign thoroughly. The sender must understand the principles of the used language in order to select the proper information to persuade receivers: the meanings of words, phrases, sentences. The selection of written information appropriate to the target group is to reduce misunderstanding and deviation in interpretation of the information.

Nowadays, there are many communication media and devices because of rapid technological development. Hence, the sender must be able to utilize these technology choices. Many senders ignore the use of old



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communication media because they are obsolete and not innovative. What the sender should consider is the target group or the receivers; what communication media receivers use most in order to send the information campaign directly to them.

The last important element is receiver. The study to understand each type of receivers is important in communication process of the campaign. Besides, the physical difference, behavior, culture, religion and context are surrounding factors that the sender should consider. If the sender fails to analyze deeply, the campaign to change the behavior or attitude of the receivers will not be effective (Chupaka, 2019).

### **The Present Campaign of Electronic Waste**

From the review of information from public relations concerning battery waste, it was found that in 2013 there was a project named Do Good Every Day, which is a collaboration between DTAC and Lenovo (Thailand) Ltd. "Mobile Battery for Life" was an activity of this project. The litter bins for electronic waste were placed in Lenovo Exclusive Shops and 22 DTAC Service Centers around Thailand (Manager Online, 2013). In 2013, Office of the National Broadcasting and Telecommunications Commission (NBTC) set up the return of electronic waste project named "Return Old Battery We Save Earth", in which more than 300 return points were available over Bangkok Metropolitan Region. However, with lack of public relations and information update people receivers did not see its importance.

ChulaLovesTheEarth Project, an insistent campaign against electronic waste, continuously publicizes activities on internet media. The project could approach many people via Facebook (@ChulaLovesTheEarth). It is found that this page has been set up for more than 7 years and within the Facebook page there have been regular public relations news and infographics so that the readers could understand easily.

The evidence showing success of communication to create knowledge and recognition of environment of ChulaLovesTheEarth Project is many people send electronic waste, i.e. cell phone and batteries, by mail to the project. The use of new media or internet media to disseminate information to a large number of receivers is a guideline for other related public and private work units to apply to their projects for sustainable environmental development.

### **Conclusion**

The problem of electronic waste, especially batteries contaminated with other wastes, is a new problem that should be managed quickly because of the increase of millions of cell phones in each year. Additionally, the number of batteries is increased a lot more. This phenomenon is a result of changes in technology and lifestyles. The lack of waste separation causes impacts to human bodies through inhaling and skin. Moreover, batteries are flammable object that may cause disaster such as fire on waste pits or mercury contamination in soil. These lead to losses in economics, environment and living beings.

The communication to create environmental knowledge and realization onto people is important. It is time for every party to collaborate seriously to solve this emerging problem. There were attempts from public and private sectors to set up campaigns to solve the dump of electronic waste but they were not publicized continuously. Although there have been an establishment of electronic waste areas, the building of awareness concerning electronic waste among people could not be achieved.

ChulaLovesTheEarth Project is an example to learn about communication for environmental development. It could be seen clearly that the sender analyzed behavior and perception of receiver correctly and designed information using various formats: pictures, messages, video clips to stimulate the receivers' awareness. The selected communication channels is social media that could reach the large number of new generation of the target group. The indicator of the campaign success is the behavioral change of receivers: many returns of the unused batteries to the project. However, the driving force for development needs coordination from many parties and integration of collaboration to become large-scale social network. After that, the electronic waste problem, a serious problem of Thailand, could be solved effectively and sustainably.

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