Globalization of Information Communication Technology (ICT) and consumerism in developing countries: Confronting the challenges of e-waste disposal in Harare urban, Zimbabwe
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ABSTRACT

Over the past decade consumerism of Information Communication Technology (ICT) in Zimbabwe has increased through lifting up of import duty by the Ministry of Information and Communication Technology. Mobile telepathy is on the grip as cyber culture manifests through usage of smart phones, lap tops and i-pads taking precedence over other orthodox communication channels. Social networking has been promoted through face book, whatsapp, Twitter, Skype, Viber, you tube, G-talk as well as Khuluma. Network expansion through broadband has also facilitated use of personal computers especially for career professionals and academics as evidenced by higher Institutions of learning which have resorted to e-brary. Mobile e-banking has intensified through eco-cash, mukuru.com and e-mali facilitating the transfer of cash currency. Primary sources of data such as unstructured interviews and key informant interviews were used to solicit data on the causes of e-waste drivers in Zimbabwe, challenges associated with increased ICT usage as well as strategies devised to deal with these transcending challenges. Secondary sources of data were also employed in the study. From data gathered during the course of the study it is evident that conspicuous consumption of ICT eventually adds up to the e-waste stream when ICT equipment becomes obsolescence. This is due to the short life span of ICT equipment sold on the market, with mobile phones lasting up to 2 years and computers up to 4 years. When disposing off obsolete ICT it is common to mix electronic and garbage waste which eventually finds its way in local authorities open dumpsites or undesignated dumpsites. In Zimbabwe there is only one local authority in Bulawayo with a general waste landfill. Moreover, local authorities do not have hazardous waste landfills and lack the financial backup to enhance environmentally sustainable practices making environmental law on hazardous e-waste difficult to implement.

Keywords: Hazardous e-waste, cyber culture, import duty, local authorities.

1. Introduction and background to study

UNEP (undated) defines electronic waste as a generic term encompassing various forms of electrical and electronic equipment (EEE) that are old, end of life electronic appliances that have ceased to be of any value to their owners. According to The Committee on Environment, Agriculture and Local and Regional Affairs (2006) electronic products at the end of their useful life and peripherals include computers, televisions, video recorders, stereos, copiers, fax machines, and mobile phones. For Kiplangat and Ocholla (2005) ICTs include digital information held as Is and Os and comprises computer hardware, software and networks and intermediate technology based largely on analogue information waves such as radio, television and telephones.
The world is witnessing technological advancement at a very fast pace as the world is becoming more and more globalized with African countries becoming easy dumping sites for cheap second hand electronic devices under the guise of e-trade. Pigato (2001) notes that advance in technology such as global telecommunication infrastructure, cross border data flow, the internet, satellite networks and wireless telephones are credited to globalization. The Secretariat of Basel Convention (2011) further argues that Information Communication Technology has revolutionized modern living, international business, global governance, communication, entertainment, transport, education and health. This has been driven by unprecedented high volumes of production and usage of consumer electronic products, in particular personal computers, mobile phones and television sets. This in essence is a yardstick meant to bridge the digital divide between the developing and developed countries.

The genesis of e- waste can be visualized from the past decade when the country was experiencing economic doldrums leading to the look East policy. Cheap mobile phones from Dubai with a short life span flooded into the country under the trademark of G-Tide. Zimbabwe is one of the countries that have been battling to deal with electronic gadgets disposed off into the environment since its still in its infancy of dealing with electronic or toxic waste. The problem has remained recurrent since Zimbabwe has not only continued to receive cheap electronic gadgets but also generous donations that come in most institutions posing a major environmental time bomb and health hazards. To further qualify the foregoing sentiments Zunguze (undated) posits that Zimbabwe is experiencing an increase in the take up of ICTs and mobiles are readily discarded due to rapid technological changes and their low average life span. There has been an influx of cheap second hand mobile phones on the market from the East.

Wanjau (2011) asserts that the ICT sector has experienced unprecedented growth in the last decade. This trend has been boosted by market liberalization and augmented by convergence, new technologies and resultant innovations such as mobile phones which continue to be the most rapidly adopted technology in history. In 2010 the mobile phone was the most popular and widespread personal communication technology with an average subscription world rate of 78 per 100 inhabitants while for developing world it stood at 70.1 per 100 inhabitants (ibid, 2011). Dr Herat (2010) upholds that e-waste is one of the fastest growing solid waste streams around the world today. Schwarzer et al (2005) argues that based on studies conducted in the European Union e-waste is growing at a rate of 3-5 % per annum or approximately 3 times faster than other individual waste stream in the solid sector. Simultaneously (The African Newsletter of 2012) highlights that in Africa demand for electrical and electronic equipment is rising at significant rates across the continent driven equally and paradoxically so by growing disposable incomes and poverty.

Dr Herat (2010) asserts that the rapid uptake of ICT around the world coupled with the advent of the new design and technology at regular intervals in the electronic sector is causing the early obsolescence of many electronic items around the world today. It is however ironic those ICTs are acknowledged to be enablers of social and economic development and are central to the promotion of the goals of Millennium Declaration and have the potential for bringing about poverty alleviation and improvements in the quality of people’s lives. (see Chimhowu et al 2010). To further cement the foregoing notion (Zunguze, undated) argues that ICT usage has increased in Zimbabwe following the removal of import duty on electronic goods by the Ministry of Information and Communication Technology. Availability of SIM cards in Zimbabwe has led people to own more than one line which equate to about the same amount of a loaf of bread. Wanjau (2011) further argues that the
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uptake of broadband networks pushes for the replacement of massive copper infrastructure leading to adoption of a multiplicity of electronic devices prompting consumers to buy a new phone, a new computer and a new program. This has also proved imminent in Zimbabwe with Econet introducing the 3G connect, ZTE with Powertel and Net one and Africom under Telecel respectively.

Zunguze (undated) carried out a study in Harare during the economic recovery period and pointed out that e-waste was not a big issue at all and acknowledged that there was no legislation in Zimbabwe governing e-waste at that period. Zimbabwe has been importing refurbished computers which last no more than three years. These outdated computers have outlived their productive lives have been stockpiled in schools, ministries and companies. World links Zimbabwe facilitates use of computers in pedagogy and encourages schools to bring their obsolete computers to the workshops in Harare for salvaging. However, the challenge is that there is no incentive to offer to encourage schools to respond positively to the call.

Following the economic turnaround prices of electrical gadgets have gone down leading to increased importation of electrical and electronic gadgets giving birth to an upsurge of electronic devices purchase. Moreover, following the economic recovery urban dwellers as well as companies have been fighting to keep in trends with the latest electronic devices on the market. For individuals when their electrical gadgets become obsolete or dysfunctional they are rather optimistic that someone might come to buy it or repair it and in most instances dispose the gadgets when they are sure that they are beyond repair. This has also been evident in most companies as they resort to pack rat mentality. The multi-million dollar question is what will happen to the electrical gadgets that have been stockpiled and become redundant considering the mere fact that Zimbabwe has no plan yet to deal with electronic waste?

1.2 International Response to export of hazardous waste

1.2.1 Basel Convention (1987-89)

The Basel Convention was negotiated between 1987 and 1989. It was created to prevent the economically motivated dumping of hazardous wastes from richer to poorer countries. In general, many developing countries advocated a North-South ban on hazardous waste transfers, while Organization of the Petroleum Exporting Countries (OECD) countries preferred a regulatory system based on notification and consent. The objectives of the Basel Convention are to minimize the generation of hazardous wastes and to control and reduce their transboundary movements so as to protect human health and the environment (see Kruger, 2001). Many African countries saw the transfer of hazardous wastes to poorer countries as a continuing form of colonial exploitation. The North-South aspect of the negotiations has been a central political dynamic in the Basel process from the very beginning because the original convention did not prohibit export to developing countries. Those countries still had major concerns regarding illegal traffic, economically motivated waste dumping and ‘sham’ and dirty recycling (Kruger, 2001).

Andrews, 2009 asserts that the ban was however amended in March 1994 at the instigation of a coalition of environmental NGOs and developing countries to immediately ban trade in hazardous waste destined for final disposal and to phase out trade in hazardous waste destined for reuse or recovery between the North and South by 31 December 2007. However, the decision was not incorporated in the text of the Convention itself. As of August 2009 only 65 out of 172 parties to the Convention had ratified the Ban. The list of parties which have
not ratified the Ban includes major producers of hazardous waste such as the United States (US) and Japan as well as developing countries such as India, Brazil and Pakistan who are the major importers of hazardous waste.

1.3 Regional Response to hazardous waste

1.3.1 Bamako Convention (1991)

According to Andrews (2009) the Bamako Convention is a regional agreement which placed a complete prohibition on the trade in hazardous waste. The treaty was negotiated and adopted by member states of the defunct organization of the Organization of African Unity (OAU) in 1991 now African Union (AU). It was a protest against persisting dumping of hazardous and nuclear wastes in the territorial borders of African countries which the Basel Convention was perceived not to have effectively addressed. African leaders feared that the Convention would serve to legitimize the dumping of hazardous waste in Africa and had delayed signing the Basel convention. The Bamako convention placed a complete prohibition on imports of hazardous waste into signatory nations. Switzerland and Indonesia launched the Country Led Initiative (CLI) which established a process of informal consultations amongst key actors in the hazardous waste trade.

1.4 National level Response to hazardous waste and defining hazardous waste

The Environmental Management Act of 2002 Chapter 20:27 is a blueprint with regards to environmental management and protection in Zimbabwe. In Section 4:1 it entails that every person shall have a right to a clean and safe environment that is not harmful to health. The act in Section 72 subsection 1 defines hazardous waste as any waste which is poisonous, corrosive, noxious, explosive, inflammable, radioactive, toxic or harmful to the environment. Section 73 subsection 1 prohibits the discharge of hazardous substances, chemicals and materials or oil into the environment. Statutory Instrument (SI) 10 of 2007 is an outgrowth from the principle Environmental Management Act. The Statute defines ‘hazardous waste’ as any waste that directly or indirectly represents a threat to human health or to the environment by introducing one or more of the following risks: accumulation in biological food chains of non-biodegradable components in the environment, acute or chronic toxicity, cancer, mutations, tumours or birth defects, chemical instability, reactions or corrosion, explosion of fire, infections, pathogens, parasites or their vectors, toxicity, or damage to the ecosystem or natural resources. SI 10 section 12 of 2007 states that no one shall dispose of hazardous waste at any other place except in a licensed hazardous waste disposal site or landfill. Anyone disposing of hazardous waste shall ensure that the hazardous waste disposal site or landfill has a lining that is resistant to corrosion. Anyone landfill operator who contravenes section 12 and 13 is liable to prosecution, fine not exceeding level 14 or withdrawal or alteration of hazardous substances disposal license.

2. Methodology

Zimbabwe just like many African countries is facing challenges on dealing with e-waste disposal. Consumerism of electrical gadgets and equipment has increased following the dollarization of the economy. Globalization of e-trade has been viewed as a tool for social and economic development particularly in developing countries. Furthermore, ICT development is considered as green technology in terms of ameliorating the environment though it has the propensity to generate toxic waste which is harmful to human health and the

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environment especially when it reaches the end of its life span. In Zimbabwe the situation is rather pathetic and unbearable from an ecological point of view considering the fact that they have been battling to deal with kaylites and plastic bag disposal and now the rising toxic waste is a menace to the country. At the present moment despite efforts put forward to abide by environmental regulations the dilemma is that the local authorities do not have hazardous waste landfills and there is no plan yet to deal with such toxic waste in terms of implementation. The study was conducted in Harare which bears a true testimony of e-waste disposal as the country’s capital city. Primary sources of data were used to solicit data. Unstructured interviews and Key informant interviews were carried out with local authorities and environmental enforcement agencies to analyze the transcending challenges associated with e-waste disposal and to examine the strategies that have been put in place by local authorities and law enforcement agencies to circumvent e- waste problems. Secondary sources of data were also used and these included journals, books, reports and newspapers.

3.0 Discussion of findings

3.1 E-waste drivers in Zimbabwe

3.1.2 Economic climate and availability of disposable income

Over the past decade Zimbabwe has been facing a severe economic crisis resulting in galloping inflation within the country. Cross border trading emerged as a livelihood portfolio especially among the urbanites in Harare with most small businesses trading in electrical goods such as televisions, DVDs, radios. These tended to be cheaper as compared to those goods sold in local shops and were popularized as ‘zing zhong’ products because of their short lived lifespan. In the mobile Industry mobile smart phones that permeated into the country were from Dubai under the trademark of G-tide. In Harare China shops became very popular and were selling their electrical goods at cheaper prices. These gadgets tended to be not durable and were also irreparable. Compared to local shops the electrical goods sold in these shops have no guarantee which tells a lot about these products. Some small business shops that have courtesy to customers have placed posters in their shops written “No guarantee on all dubai phones and two weeks guarantee on other cellphones”. In 2009 the Zimbabwean economy was dollarized and there was conspicuous consumption of advanced ICT technology. The sim card used to be very expensive equating to the price of a beast, but its price fell down to the cost of a loaf of bread leading to school going children also getting access to mobile phones that used to cost a fortune.

Evidence from unstructured interview carried out in Harare revealed that the usage of mobile smart phones, I- pads and laptops has increased over the past five years due to the economic turnaround and technological advancement particularly the network expansion through broadband. Youths between the ages of 15-40 have tended to dominate in usage of cyberspace in order to suit the extravagant lifestyle. Following the expansion of social networks face book has tended to be more prominent and most frequented website. In Harare some respondents also revealed that children as young as 7years old could now use cell phones due to affordability of mobile phones. Most people felt that the mobile telepathy has tended to hamper on the performance of school going age. From the observations carried out during the course of the research it was discovered that most cybercafés in Harare were occupied with youths who were either using personal laptops or i-pads since internet is more accessible and affordable at a cost of $1. Cybercafés are favored due to their convenience.
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It also emerged that due to broadband expansion people have resorted to using the dongle for instance Econet has the 3G connect facility, ZTE has powertel facility, and Telecel has Africom facility. Evidence from interviews revealed that due to high tariffs Econet was now losing out to Powertel which has unlimited access going for US$50 per month. For Telecel’s Africom the costing is US$35 per month. Following stifled competition Econet has resorted to selling the 3G dongle for US$28 with free 25 Megabytes (MB) for 6 months. In 2009 these Econet modems were going for US$150 since there were no competitors on the market. Evidence gathered from the field revealed that those respondents using personal computers have resorted to usage of these modems with Powertel being the most favoured due to its unlimited access facility and easy downloads. Some students from tertiary institutions depending on their disposable incomes have resorted to usage of these modems to do their research as well as for networking facilities. Most respondents were of the view that it’s easier to download and upload photos and videos using a much bigger screen. It also emerged that apart from use of these modems, cybercafés and smart phones are also used to research and communicate with relatives and friends through social networks such as whatsapp, Skype and twitter also seemed to be frequented by users. Mobile e-banking has also increased as most age groups use eco-cash mostly to send their relatives and friends some money even from abroad. It was also evident that even in agriculture farmers could use the mobile phones to supervise daily activities through cell phone farming. Evidence from secondary sources of data also indicated that i-cow facilities for farmers engaging in dairy farming are used to trace the gestation and lactation periods due to technological advancement.

3.1.3 Lack of adequate service provision

Local authorities in Harare are incapacitated to the extent that waste collection has been in a comatose due to the rapid growth of the capital city. It is apparent that despite the rates paid by rate payers service provision by local authorities has continued to dwindle over the past decade. Waste goes for months without being collected and to worsen the situation illegal open dumpsites have mushroomed in the once called ‘Sunshine City’. Open dumpsites have emerged in which people throw away their garbage and dysfunctional and irreparable cell phones that have passed through their shelf life. In most instances batteries which contain lead are even dumped in water sources. According to Feresu (2010) even the legal waste disposal sites are poorly managed and people have resorted to dumping both biodegradable and non-bio degradable waste. Meanwhile the local authorities do not have hazardous waste landfill and the situation is out of control since the legal dumpsites are open and not protected. It has become the norm that residents in urban areas have resorted to dumping electrical gadgets and equipment that have passed through their shelf life in illegal dumpsites as well.

3.1.4 Urbanization

Harare has been urbanizing at a fast pace. This has tended to pose a myriad of challenges such as water, energy and services as well as production of more waste and pollution. People have resorted to rampant subletting of existing houses and construction of illegal structures. In Harare parts of Highfields, Mbare, Glen-view, Mufakose and other high density residential areas have experienced a population boom (see Feresu, 2010). As a result there have been chronic problems of excessive garbage generation which is beyond the reach of the local authorities. Feresu (2010) opines that residents have been left with no option except to resort to illegal dumping in open spaces and open storm water drains. Urbanization is also encompassed by high usage of ICT equipment. Due to informalization of e-trade most urban dwellers in Harare earn their living out of selling chargers, cell phone batteries, MP3 players to mention but a few. Flea markets and small businesses have ballooned in the city and
continue to export and sell some Nokia cell phone clones. Most of these phones are refurbished before coming into the country and have a very short life span compared to the original Nokia mobile phones. It has emerged that despite their increased unpopularity they still sell on the market and attract a particular class category since they emulate the functions of the smart phones. Most small businesses highlighted that the mobile industry tends to target people from various backgrounds. These phones from Dubai range from $US10 and some would simply buy them so that they get connected with their friends and relatives. Smart phones come in different packages since some have a touch screen. It emerged that most of these mobile phones especially from Dubai are irreparable and what Dubai is simply doing is mass production so that they sell fast and maximize profits at the expense of the consumers.

3.1.5 Lack of environmental education

In Zimbabwe there is limited information on hazardous waste management. The main reason is lack of proper and functional hazardous waste collection, handling and disposal systems. In addition there is no information management systems related to hazardous wastes and their management. There is also lack of awareness of risks associated with hazardous waste in Zimbabwe (see Feresu, 2010). Evidence gathered from unstructured interviews revealed that people were just excited about having more than two cell phones but are not aware of the harmful imprints of ICT. It also emerged that people are not aware of salvaging companies that take obsolescence computers for recycling and what they simply want is to keep these gadgets hoping that someday they will work again. Some people interviewed had the knowledge of the existence of these companies but simply pointed out that there was no incentive at all that go with taking obsolescence electronic gadgets for recycling. Instead backyard industries could offer something promising instead. In Gazaland (Highfields) and Siyaso (Mbare) people have resorted to illegal operations of burning old computer casings as a way of dismantling and separating the materials that they need to use.

3.1.6 Storage of technology rather than disposal.

The storage of technology is quite rampant in business organizations and institutions of higher learning. In institutions of higher learning ICT that is donated is refurbished and some of it will have passed through its shelf life. Computers are rather stockpiled even when they know that they have become obsolescence. In most companies, schools and higher institutions of learning authorities have remained adamant and continue to shelve computers that have passed their shelf life. The reasons for storage include difficulties in writing off from registers, fears relating to data security and a lack of awareness of where to dispose old technology

4. Informalization of e-waste as a livelihood option

In Harare e-waste scavenging has emerged as a livelihood option especially in high density areas. It has emerged that informal processing is prevalent especially in residential areas in Mbare (Siyaso), Gazaland (Highfields). In most instances the urban poor especially those at the low rungs of society have acclimatized to electronic waste disposed in open dumpsites. Olowu (2012) opines that within the context of toxic waste dumping, those who end up living closest to dumping sites bear the greatest adversities of toxic wastes and these are the poor, the homeless, street children and other vulnerable people at the lowest rungs of society. In Harare the situation is pathetic with children below the age of 12 and under 5 years in minor incidents dominating the industry by picking up electronic waste. This in actual fact is gross
violation of children’s rights. It is evident that the separation process involves burning to separate copper cables and wires. Old tyres are burned and used as fuel in this separation process. Usually the process is done by night for fear of reprisal by environmental watchdogs since burning of tyres is illegal according to the atmospheric pollution regulations. E-waste is often disposed by open burning, placing entire communities at risk of exposure to releases of dangerous substances into the environment. Recycling activities often take place on unfortified ground where harmful substances are leach into the soil.

4.1 Footprints of improper e-waste disposal

Electronic waste presents ecological and social problems to those people who scavenge electronic waste and those who dwell in the ambience of these dumpsites. Electronic wastes have tended to be associated with environmental and health challenges. According to Olowu (2012) Electronic wastes can contain more than a thousand assorted substances many of which are lethal. These may be in form of heavy metals or chemicals such as mercury, lead, cadmium, chromium, magnetic properties and antimony (flame retardants) including polybrominated diphenyl ethers. Perhaps the most hazardous components of electronic wastes are the mercury-containing components, batteries, printed circuit boards, Cathode Ray Tubes (CRTs) and plastics which contain the brominated flame retardants.

In Zimbabwe there is only one proper landfill in Bulawayo and for Harare the dumpsites used by local authorities are open. It is ironic in that whilst legislation spell out that e-waste has to be disposed in hazardous landfills Zimbabwe is far from that and has no plan on dealing with electronic waste. To worsen the situation these open dumpsites are not protected making them accessible to anyone who deems so. This in essence has led to accidental leakages and evaporation of these substances found in electronic wastes dumping sites and results in the contamination of surrounding natural resources including soil, crops, water, livestock and fish.

Those people who engage in breaking electronic wastes openly have succumbed to radiation, nausea, headaches, and respiratory failure among other health problems. Hazardous substances are released during dismantling and disposal operations. Open burning of cables normally happens in Mbare’s Magaba and Gazaland Highfield. These are a major source of dioxins emissions and persistent organic pollutants (POPs) that travel over long distances and bio-accumulate in organisms up through the food chain. However, it is not only people working directly with electronic wastes who are susceptible to their harmful effects but also people living in the ambience of the waste dumps, and those indirectly affected through contamination of the food chain, soils and rivers. Olowu (2012) argues that these people are exposed to hazardous substances through dermal exposure, dietary intake, dust inhalation or particle intake with the latter two sources particularly significant. Other expert studies assert that exposure to chemicals from e-waste including lead, cadmium, mercury chromium and polybrominated biphenyl’s could injure the human brain and nervous system, distress the kidney and liver and lead to birth defects.

In Harare open dumping is evident and results when the City Council fails to collect waste. Nganji and Brayshaw (2010 attest that the lead concentration in printed wire boards of computer has been found to be 30-100 times the regulatory level for classifying a waste as hazardous. Lead can find itself into the environment through waste incineration and can contaminate water which eventually gets into the body if drunk. Duncan et al (2007) argues that the buildup of lead in the body has a hematologic effect causing various health problems including brain damage, hearing loss and anemia. For de Burbure et al (2006) Cadmium, lead
mercury and arsenic have negative effects on children’s renal system. Cadmium associated with cancers is also found in computers.

Evidence gathered from secondary sources of data in EMA Newsletter of 2011 bear testimony that Pomona and Golden Quarry dumpsites in Harare have proved evident that electronic waste is dumped together with domestic and industrial waste. Such practices result in leachate of dangerous chemicals into drinking water sources which can be ingested by human beings. There are dangerous chemicals such as lead that is contained in computer monitors. Lead results in damages to the central nervous system of human beings, while cadmium from semi conductors is carcinogenic and can cause kidney defects. Bromine which is contained in cables and printed circuits boards can impair memory and lead to behavioral disorders while lithium substances found in batteries can cause birth and heart defects. According to the Committee on Environment, Agriculture and Local and Regional Affairs (2006) when improperly disposed (incinerated or land filled instead of recycled) toxic substances like lead, cadmium or mercury (that are commonly used in mass electronic products can contaminate the soil, water and air. Lake Chivero bears the signs of toxicity and pollution. Mercury from electronic waste is consumed by fish which in turn is consumed by human beings henceforth posing a health hazard. In Harare fish from Lake Chivero is sold on the market exposing residents to serious health problems. Hence e-waste has tended to have social and ecological consequences on both society and the bio-physical environment.

In view of the foregoing notion Nganji and Brayshaw (2010) assert that when the environment is polluted this has negative consequences on human health. Humans are part of the ecosystem and feed on plants and other animals as well as drink water, and inhale air from the atmosphere, pollution of these sources are bound to impact negatively on human health. The multimillion dollar question is if the country has no plan yet to deal with e-waste e-trade has to be controlled rather.

4.2 Opportunities and constraints of ICT development in Zimbabwe

ICT can be viewed as green technology but only when it’s durable and remains a necessary evil though. Globalization is rather Janus faced, thus it is both emancipating and liberating and simultaneously destructive. According to Kabamba (2008) ICTs have accelerated the global trade and productivity, facilitated business and industry expansion and enhanced education and research collaboration. This is quite evident in Zimbabwe through development of e-learning in tertiary schools and institutions of higher learning. ICTs have increased connectedness in a revolutionary world through mobile e-banking and agriculture development initiatives such as i-cow. Farmers can trace the gestation period of their dairy cattle.

Joines (2012) allude to the sentiment that globalization has caused people to be more connected. While it has opened up innumerable economic opportunities for both post-industrialized and developing countries, it has also created a commoditization of e-waste which is deemed as hazardous. Globalization has in essence promoted the consumption culture as people buy new gadgets to replace old ones. It has emerged that most consumers have resorted to disposing e-waste together with household garbage due to limited awareness of hazardous components within electronic waste. In Zimbabwe there is no system in place to separate waste and the situation is even worsened by Local authorities’ incapacity to consistently collect garbage. At Magaba home industries in Mbare the situation is even worse. A lot of electronic junk is burnt daily. Trucks and people dumping computers frequent the place and no one stops them. Furthermore, Magaba is favored due to its proximity to the
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CBD (Central Business District). In Zimbabwe just like most African countries recycling infrastructure is relatively minimal compared to number of electrical products consumed (see Joines, 2012). It is however ironic that developed countries continue to export cheap and outdated electronic equipment because it is cheaper and regulations in these countries are rather relaxed.

Zimbabwe has since ratified the Basel convention and has regulations that ban the movement of toxic substances except in the event that a hazardous substance license is acquired from the Environmental Management Agency. However, this has proved to be a catch 22 situation since law enforcement on hazardous substances remains weak due to financial back up and shortage of qualified personnel. More to that SI 10 of 2007 makes reference to a Standard Enforcement Committee which in Consultation of the Environmental Management Agency will enforce law on hazardous waste, but this committee is nonexistent and rather enforces standards set by Standards Association of Zimbabwe (SAZ). Contrary to developed countries in which Nokia is involved in take back schemes in Africa this has tended to be non-existent due to weaker law enforcement since there is no Extended Producer Responsibility.

The local authorities are simultaneously facing financial doldrums due to a myriad of environmental problems faced in the country and this has also proved futile to deal with toxic e-waste. This notion is backed up by the Secretariat of the Basel Convention (2011) who argues that countries in Africa lack infrastructure and resources for Environmentally Sound Management (ESM) of e-waste arising when imported electrical equipment reach the end of their shelf life. Furthermore, for safe disposal of e-waste toxic materials must first be removed. This has proved difficult since Zimbabwe does not have a facility that focuses on removing toxic materials from electrical goods. At the moment there is no plan yet to deal with hazardous waste and there is a very low level of e-waste readiness and preparedness in Zimbabwe.

ICT development has been valorized under the guise of poverty alleviation and seen as green. However, Joines (2012) views this as a baffling description considering that many of the components are toxic to humans and the environment. E-waste problem is not perpetuated by the lack of regulation. Despite there being internal and international policies on e-waste, they seem to have exacerbated the issue. Globalization in effect hides the gravity of e-waste in the name of development. What we simply have is toxic colonization. In most instances developed countries have resorted to dumping e-waste in developing countries where they think cheap labor is available for recycling hence adopting the Not In My Backyard (NIMBY) approach. For Kabamba (2008) ICT euphoria is rather accompanied by a growing misconception in Africa of substantial benefits that will accrue with ICT adoption and diffusion. For Krueger, 2003 the damage caused by hazardous wastes takes an economic toll and cleaning up contaminated sites can be costly for local authorities (see Krueger, 2003).

Zambylas and Vrasidas (2005) allude to that the current metaphor of a ‘global village’ is problematic and can be interpreted in form of electronic colonization. The global village narrative is a modernist myth that garnishes cyber culture as culturally neutral and equally approachable by all people. On the contrary by erasing cultural differences and national boundaries it can be seen as a form of colonialism. From the ongoing notion it is evident that ICT development simply leaves developing counties as passive victims and recipients of their fate through celebrating cyber development. Even on the international fora it is the interests of the powerful that are served making Africa the bastions of the environmental fate that befalls them. The promises of adapting to cleaner technologies remain a pipedream. At the national level legislation has remained futile since the rich powerful nations are concerned by
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their self aggrandizement. Henceforth legislation has remained lax at the international level making it very difficult to implement.

The global, regional and national policy regulatory responses have been weakly enforced, and have been largely ineffective in both receiving and sending countries. The Basel Convention for instance has failed to adopt a blanket ban and countries that have not ratified the accord are major producers of hazardous waste and importers of hazardous waste such as Pakistan and India (see Andrews 2009). It is crystal clear that the issue is contentious and rather apolitical and there is no hope either of resolving it in the near future. This is evidenced by the amendment of the Basel Convention which really did not change anything but rather spiraled and gave impetus to a political deadlock. Kruger (2003) contends that the Basel Convention has proven to be dynamic and useful but also a highly controversial instrument for controlling international trade in hazardous wastes. The question of when and under what conditions hazardous waste should move across borders for purposes of recycling or reuse remains contentious.

What the major powers are doing is just to buy in time by simply dancing in circles to avoid raising alarm and opposition henceforth creating an atmosphere where they fictitiously ‘capture the debate on e-waste and hazardous substances’. At the regional level the Bamako is just but a mere replica and microcosm of the macrocosm (ie Basel Convention). The convention has largely failed to stem the trade in illegal hazardous waste hence it has been described as a symbolic treaty rather than one with any real legal force. Due to problems of endemic corruption and weak government signatories to the Bamako Convention parties are particularly ill-equipped to tackle the problem of illegal traffic (Kruger, 2003). Andrews (2009) further argues that environmental NGOs, EU and many developing nations continue to advocate a blanket ban on trade in hazardous waste, though this has turned out to be a misguided response which has failed to gain acceptance by a majority of the parties to the Convention and has resulted in political deadlock. The issue of the non-ratification of the Ban has become ‘emotional and over politicized’ to the extent that it is doubtful that it will ever be resolved. The political deadlock is exacerbated by a legal dispute over the correct interpretation of the provision of the convention regulating the number of ratifications required for an amendment to enter into force. E-waste has been garnished under the name of e-donations and e-trade which however, remains a premium of mediocrity. E-trade has rather become business of the day in fear of exclusion by the global community.

In Zimbabwe the situation is exacerbated by absence of control mechanisms to monitor ICT that gets into the country. SAZ (the Standards Association of Zimbabwe) is supposed to regulate the quality of ICT that gets into the country but this is rather relaxed. The removal of import duty has actually opened up floodgates of e-waste since unscrupulous business persons import e-waste and dump it under the guise of revolutionary technology. This in essence has prompted small business shops and informal traders to buy cheap mobile phones in Dubai to suit the market demands. Most shops selling mobile phones from Dubai have notices reading “1 week guarantee on all Dubai phones” meaning to say there is no guarantee at all. ICT is now third world business for the day since most of the mobile phones on the market are not durable and have a short life span. ICT that come in Zimbabwe is either refurbished or past its shelf life. Most of these ICTs are donated as second hand or will have passed through their shelf life.
Evidence from field research indicates that over 75% of waste electrical goods end up in dumpsites. Moreover, some people have huge stocks of e-waste which they do not know what to do with. It is however, ironical that in Zimbabwe World links has a salvaging programme at its warehouse where computers are dismantled and reusable parts put back to use. E-waste is sent to City Council Municipal dumps and landfills. However, the cost of transporting the computers to Harare is very costly hence there is no incentive to encourage schools and companies to respond positively. Thus they simply keep these computers in their cupboards (see Zunguze, undated).

5. Conclusion and recommendations

From the findings it is apparent that Zimbabwe is still in its infancy in dealing with electronic waste. Due to globalization people have been subdued to ICT acclimatization. It is however evident that despite legislation enactment dealing with waste disposal it still remains a chimera and there is no way forward that has been mapped to deal with e-waste disposal in Zimbabwe. The situation is rather apolitical and involves major powers and political ‘think tanks’ hiding behind the name of ‘ICT development’ hence adopting a blanket ban has remained an illusion. Whilst ICT development presents some notable opportunities in terms of knowledge impartation and connectedness the problem lies in the products that are sold on the market in Zimbabwe. ICT that is channeled into the country actually has some flipside and aid has remained a premium of mediocrity since this is not sustainable. This has rather affected the health of the scavengers and those who live near the dumpsites creating both ecological and health related problems.

It is beyond no reasonable doubt that a monitoring mechanism for compliance to SAZ standards should be put in place. Extended Producer Responsibility will also ameliorate the problems bedeviling the developing countries in which the responsibility for waste shifts from government to private industry obliging producers, importers or sellers to internalize the costs of waste management. Furthermore, communities need to be educated on the social, economic and ecological ramifications that e-waste has. In most instances local communities do not have the knowledge regarding salvaging companies and in the event that they do they are not willing to take obsolete products past their shelf life. Henceforth there is need to put an incentive behind to engage the public. Legislation has to be enforced on the part of people who engage in illegal activities such as burning of tyres and this can be achieved through engaging more trained personnel on the ground.

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