

SERVICE PROVIDERS' DUTY OF CARE ON THE EXPOSURE OF SUBSCRIBERS TO HEAVY METALS FROM SILVER COATINGS ON MOBILE PHONE RECHARGE CARDS IN NIGERIA

By

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Abstract

Deteriorating human welfare is a common feature of underdevelopment in Africa. Even when modern technology flowers into physical social benefits, they are sometimes accompanied with phenomena that are far more dangerous than the obvious benevolence. An example is the use of scratched cards to initiate some internet or communication related transactions. Unknown to many, some of the scratched cards contain injurious elements that can expose users to health hazards of various kinds. The potential health hazards of heavy metals contained in the silver coatings of mobile phone recharge cards in Nigeria has not escaped the empirical search light of the Nigerian scientists, who affirmed its harmful status. However, legal comments have not been audible on this matter. Hence, this paper rides on the conveyance of available empirical research, to interrogate the legal implications of the above with tortuous flavour. While the increasing disappearance of various denomination of mobile phone recharge cards having silver coating is acknowledged with a sigh of relief, the emergence of "one card" in various denomination with silver coatings, allowing multiple access to mobile phone networks is worrisome. This study is both doctrinal and empirical in nature; it draws largely on content analysis of laboratory results, primary and secondary textual sources. The paper found that although the network providers owe duty of care to their subscribers, this duty of care has been breached with the production of recharge cards containing potentially harmful components. However, the puzzles and paradoxes of injury suffered by the consumers and allocation of cumulative liability among service providers remain enigmatic, as most individual Nigerians are multiple subscribers.

Introduction

The law of tort evolved to address varieties of civil wrong, concomitant to social complexity occasioned by increased human interaction. Negligence as a separate aspect of the law of tort coincidentally emerged during the industrial revolution in the early 19th century in England, with the advent of machinery, railways, and motor vehicles.¹ Human society is replete with conflict of interest and the actions of one man or group of men will from time to time cause or threaten damage to others. This damage may be in form of one legal injury or the other, signifying a breach of duty of care. Today, modern technology has transcended in feats, the industrial revolution, an epoch making of 19th century that broke the manacles on slaves and laid Trans - Atlantic slave trade to eternal rest. An important offshoot of modern technology is the information and communication technology (ICT), which has replaced analogue telephone with the Global System for Mobile Communication (GSM). Modern as it appears, ICT has a lot of inherent tortuous weaknesses. Therefore, law of tort must grow in tandem with technological advancement, while duty of care and negligence, must not be viewed with the binoculars of the industrial revolution days. Doing this will amount to reading with candle light under the sun.

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¹ Kodilinye, G. and Aluko O. (1999) *The Nigerian Law of Torts*, Spectrum Books Limited: Ibadan. p. 38

In line with the foregoing, this paper interrogates the enigmatic question of the quantum of duty of care, which the service providers of GSM in Nigeria owe their respective subscribers. The silver coating on the recharge cards of mobile phone contains heavy metals², which are injurious to human health.³ It is a common habit among people using the recharged cards especially in Nigeria, to use their finger nails to scratch the recharge card coating without proper washing of the nails therefore contributing a direct dermal contact with the heavy metal content of the coating films. Also, in the course of removing the coating or scratching, the particles are dispersed in the environment, some of them contaminate the air around, while in most cases, larger percentage are returned into the ground which consequently will percolate the ground and form part of the underground water used for drinking and other domestic activities. Thus, the human health implication of these heavy metals in the recharge card coating, either in their total, free or blinded form cannot be overemphasized. Okunola et al.⁴ have reported the presence of iron, nickel, chromium, manganese, copper, zinc, lead, and cadmium in commercially available recharge cards. While these metals have some benefits to humans, their adverse health implications are also worthy of consideration. Baruwa⁵ reported the presence of the following metals and their health hazard in varying degrees, in commercially available recharge cards in Nigeria; Zinc (Zn),⁶ Copper (Cu)⁷, Nickel (Ni)⁸, Mercury (Ag)⁹, Cadmium (Cd)¹⁰, Lead (Pb)¹¹, Chromium (Cr)¹² and Arsenic (As)¹³. Albeit,

² Heavy metals are generally defined as metals with density greater than 5 g cm⁻³. They are elements having atomic weights between 63.5 and 200.6 and a specific gravity greater than 5.0 See; Srivastava, N.K and Majumber C.B (2008), Novel Bio filtration for the Treatment of Heavy Metal from Industrial Wastewater, *J. HAZARD* 15 (1) 1-8

³ Baruwa, S.O. (2012), *Heavy Metal Exposure from Silver Coating of Mobile Phone Recharge Cards*, unpublished B.Sc. Dissertation submitted to the Department of Chemistry, Obafemi Awolowo University Ile-Ife. The injurious elements of heavy metals, commonly causing pollution include antimony, arsenic, cadmium, chromium, cobalt, copper, iron, lead, mercury, nickel, silver, thallium, tin, vanadium and zinc. See also; Martin, M.H and Coughtrey, P.J (1982) *Biological Monitoring of Heavy Metal Pollution*, Elsevier: New York, p. 346

⁴ Okunola, O.J et al (2011) Risk Assessment of using Coated Mobile Recharge Cards in Nigeria, *Journal of Environmental Chemistry and Ecotoxicology* 3 (4) pp. 80-85

⁵ Note 3 supra pp. 3-12

⁶ Too much zinc can cause eminent health problems such as stomach cramps, skin irritation vomiting, nausea and anaemia. See further; Oyaro, N. et al (2007) The Content of Pb, Cu, Zn and Cd in Meat in Nairobi Kenya, *International Journal of Food Agriculture and Environment* 5: 119-121

⁷ Excessive ingestion of copper brings about serious toxicological concerns such as vomiting, cramps, convulsion and even death. See also Paulino, A.T et al (2006), Novel Adsorbent Based on Silkworm Chrysalides for Removal of Heavy Metals from Wastewaters, *Journal of Colloid Interface Science* 301: 479 - 487

⁸ Nickel exceeding its critical level might bring about serious lung and kidney problems apart from gastrointestinal distress, pulmonary fibrosis and skin dermatitis. See; Borba C.E (2006) Removal of Nickel Iron from Aqueous solution by Bio sorption in a Fixed Bed Column: Experimental and Theoretical Breakthrough Curves, *Biochemical Engineering Journal*, 30: 184- 191

⁹ Mercury is one of the most toxic heavy metals in our environment including the lithosphere, hydrosphere atmosphere and biosphere. It is a neurotoxin that can cause damage to the central nervous system. High concentrations of Mercury cause impairment of pulmonary and kidney function, chest pain and dyspnoea. See: Damasivayam, C. and Kadirvelu, K. Uptake of Mercury from Wastewater by Activated Carbon from unwanted Agricultural Solid By-Product: Coir pith. *Carbon*, 37: 79-84

¹⁰ Cadmium is easily absorbed by the lungs and it exposes human health to great risk. Chronic exposure of Cadmium results in kidney dysfunction and high levels of exposure will result in death. Baruwa, S. O, note 3 supra at p. 6

¹¹ Once absorbed, lead accumulates in high concentrations in bone, teeth, liver, lung, kidney, brain, and spleen, and it goes through the blood-brain barrier and the placenta. The biological half-life of lead may be considerably longer in children than in adults; lead in blood has an estimate half-life of 35 days, in soft tissue 40 days and in bones 20–30 years. Lead can damage the kidney, liver and reproductive system, basic cellular

not all these metals maintain heavy presence in recharge cards, they all have noticeable presence. It is alarming, that the recharge cards that are daily consumed by millions of mobile phone users in Nigeria could insidiously expose them to varieties of health hazard. Although the gradual disappearance of mobile phone recharge cards having silver coating ushered in a sigh of relief, the emergence of “one card” in various denomination with silver coating, allowing multiple access to mobile phone networks is worrisome.¹⁴ It is necessary therefore, that tortuous search light be beamed in this direction to determine the quantum of duty of care and degree of negligence of the GSM service providers.

Service providers’ Duty of care

The first question to be determined is whether the service providers owe a duty of care to the subscribers, who are the consumers of their recharged cards which expose them to the harmful effect of heavy metals contained in the silver lining thereon. Simply put, ‘duty of care’ means the duty a person owes in law to be careful so that his conduct will not injure another person. It is a legal duty to exercise reasonable care, so that a man’s actions and omissions do not injure other persons. Broadly speaking, duty of care will be owed in any circumstances, whenever it is foreseeable that if A does not exercise due care, B will be injured. The spectrum of duty of care is very wide and the situations where one owes duty of care to another seem endless.¹⁵ In the instant case, it is argued that the service providers owe duty of care to their respective subscribers not to produce the recharge cards with such materials that will expose the latter to the harmful effect of heavy metals. This is because, duty of care is pivoted on the foreseeability that the other party will be exposed to the risk of injury if one party continues particular acts or omissions. This foreseeability test was laid down by Lord Artkin in the celebrated case of *Donoghue v. Stevenson*¹⁶ which is known as the *neighbour principle* as follows:

The rule that you are to love your neighbour becomes, in law, you must not injure your neighbour; and the lawyer’s question, ‘who is my neighbour?’ receives a restricted

processes, and brain functions. The toxic symptoms are anaemia, insomnia, headache, dizziness, and irritability, weakness of muscles, hallucination, and renal damages. Ibid

¹² Chromium is a highly toxic metal and its release into the environment has become a serious health concern. It is commonly used in many industrial applications such as tanning processes, electroplating, pigmentation, wood preservation, and is also used as catalyst for corrosion inhibition. Baruwa, S. O, note 3 supra at p. 8

¹³ Arsenic is a naturally occurring element; it is worldwide contaminant that is found in rock, soil, water, air and food. Arsenic is usually regarded as a hazardous heavy metal even though it is actually a semi-metal. Ibid

¹⁴ “One card” is a recent innovation in the GSM business in Nigeria. With the purchase of “one card” as it is called, subscribers can be credited with air time enabling them access to any network of their choice. While the innovation is a welcomed development, it is disturbing that it comes with silver coatings and in various denominations, ranging from N20 to N500 thereby expanding the spectrum of risk of exposure to injurious elements of the silver coatings.

¹⁵ A medical doctor owes duty of care to patients. See; *Mahon v. Osborne* (1939) 2 KB 14; *Wilsher v. Essex AHA* (1987) QB 730; *Allen v. Bloomsbury HA* (1993) 1 All ER 651. An employer owes duty of care to his workers, for instance to provide safe equipment and a safe working environment. See *Wilson & Clyde Coal Co v. English* (1938) AC 57. An occupier of premises owes a duty to lawful visitors to ensure that the premises are reasonably safe he also owe duty of common humanity to trespassers. See *British Railway Board v. Herrington* (1972) AC 877. *Wells v. Cooper* (1958) 2 QB 265. Road users whether such persons are driving, riding cycles or walking owe a duty of care to other road users, and to occupiers of adjacent to the road to conduct themselves carefully not to cause injury to other persons. See *Eseigbe v. Agholor* (1993) 9 NWLR pt. 316 p. 128 SC. Manufacturers of products owe duty of care to the consumers of their products to ensure that the products are not harmful to the users. See *Nigerian Bottling Co. v. Ngonadi* (1985) 1 MWLR pt. 4 p. 739 SC

¹⁶ (1932) A.C 562 at p. 597

reply. You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour. Who, then in law is my neighbour? The answer seems to be persons who are so closely and directly affected by my act that I ought reasonably to have them in contemplations as being so affected when I am directing my mind to the acts or omissions which are called in question.

The test inherent about neighbours in *Donoghue v. Stevenson* above is not one of physical closeness but of foresight, for my neighbours are 'persons who are so closely and directly affected by my act that I ought reasonably to have them in contemplations'¹⁷. Sometimes plaintiff and defendant may be physically close but there is no duty because, for example, the latter has no reason to expect the former's presence; conversely, there may be a duty even though the goods are negligently manufactured in Newcastle and cause damage in Southampton.¹⁸ Invariably, the subscribers in Nigeria as the end users of recharge cards are the neighbours of the GSM service providers, because, they are closely and directly exposed to heavy metals from silver coating of mobile phone recharge cards and the service providers ought reasonably to have them in contemplation, even when such subscribers are in Daura in Katsina state or Otuoke in Bayelsa state, while the recharge cards were produced in Lagos state. However, going by the reasonably foreseeable harm, the case of *Caparo v. Dickman*¹⁹ in the House of Lord, per Lord Bridge of Harwich, while delivering the lead judgement, stated the now famous *Caparo test* introduced a threefold test for a duty of care. Thus, there had to be foreseeability of damage, a relationship characterised by the law as one of proximity or neighbourhood; and the situation should be one in which the court considers it would be fair, just, and reasonable that the law should impose a duty of given scope on one party for the benefit of the other²⁰. All the three conditions apply *mutatis mutandis* to the relationship between service providers and consumers of recharge cards in Nigeria; a *prima facie* duty of care is therefore established. *Donoghue v. Stevenson* (supra) was premised on Lord MacMillan's recognition of a new category of tort which is now known as the "implied fitness of a product" in a completely different category of tort "product liability" because it was analogous to previous cases about people hurting each other.²¹ With the chemical content of the silver coating on recharge cards of mobile phone in Nigeria, the cards cannot be said to have passed the implied fitness of product test and product liability test. Confirming the foreseeability of damage to subscribers by the activities of service providers, section 136 of the Nigeria Communications Act which margin note is entitled 'duty of care', provides that the licensees (service providers) owe duty of care to their neighbours and must take reasonable steps to protect the safety of persons and property as well as the environment.²² The Act states further that the service providers must be mindful of causing detriment and inconveniences to the general public²³. Consequent upon the above, the fact that the service providers owe duty of care to Nigerian subscribers becomes unequivocal.

¹⁷ Rogers W.V. H. (1989) *Winfield and Jolowicz on Tort* 13th edition, London: Sweet & Maxwell p. 81

¹⁸ *ibid*

¹⁹ (1990) 2 AC 605; (1990) 2 WLR 358; (1990) 1 All ER 568

²⁰ *Caparo Industries Plc. v. Dickman* (1990) HL in Oshitokunbo L. O. (2008) *An Almanac of Contemporary Judicial Restatements*, Ibadan: Spectrum Books Limited p. 926

²¹ *ibid*

²² Section 136, Nigeria Communications Act 2003.

²³ See generally sections 136 (1) (2) (3) (a) – (d) of the Nigeria Communications Act 2003

Breach of duty of care by service providers

Having established the existence of duty of care owed by the service providers to the subscribers, the next consideration is to determine whether the service providers have breached such duty. In carrying out this task, the age long consideration of the law is whether a reasonable man in the service providers' position would have acted the way they did given the same circumstances. Breach of duty of care is categorised as a tort of negligence. Negligence in the words of Alderson²⁴ has been defined as follows:

“Negligence is the omission to do something which a reasonable man, guided upon those considerations which ordinarily regulates the conduct of human affairs, would do, or doing something which a prudent and reasonable man would not do.”

To assess the standard of care expected of the service providers in Nigeria and determine what a reasonable man would do in the circumstances, the law considers the risk factor, which has four elements. These elements are discussed *seriatim* with respect to the relationship between the subscribers and service providers.

The likelihood of harm

The greater the degree of likelihood that the defendant's act will cause harm, the greater the quantum of caution required of him. In the words of Lord Wright²⁵, “the degree of care which the duty involves must be proportioned to the degree of risk involved if the duty of care should not be fulfilled.” In the instant case, the likelihood of harmful effects of heavy metal in the silver coatings of mobile-phone recharge cards in Nigeria have been established through empirical scientific research²⁶ and as such, the service providers require a great degree of caution. The opinion of Eze Malemi²⁷ is quite relevant at this juncture. The learned scholar opined thus:

“Where the matter or activity under consideration is on the fringes of science, and the amount of knowledge currently available to man on the matter does not avail an answer to the risk posed, then if society for reasons of utility and so forth, permits such activity to continue, a defendant would have discharged his duty of care if the amount of care he exercised, was in consonance with the level of knowledge available to humanity on the matter.”

It goes without saying that the matter under consideration is on the fringes of science. However, the amount of knowledge currently available to man does avail an answer to the risk posed. Again, the service providers cannot be said to have discharged the duty of care expected of them, because the amount of care exercised is not in consonance with the level of knowledge available to humanity on this matter. Like Okunola et al²⁸, Baruwa²⁹ in an empirical research, revealed the concentration of heavy metals in the silver coatings of mobile-phone recharge cards in Nigeria. The concentration in various denomination of

²⁴ Blyth v. Birmingham Waterworks Co. (1843 – 60) All E.R. Rep. 478

²⁵ *North western Utilities Ltd. v. London Guarantee & Accident co. Ltd.* (1936) A.C. 108 at p. 126

²⁶ See note 3 – 13 supra

²⁷ Eze Malemi (2013) *Law of Tort*, Lagos: Princeton Publishing Co. p. 306

²⁸ Note 4 supra

²⁹ Note 3 supra

recharge card is rendered in micro-gram per gram ($\mu\text{g/g}$) in the graphs contained in figure 1 and 2 below:

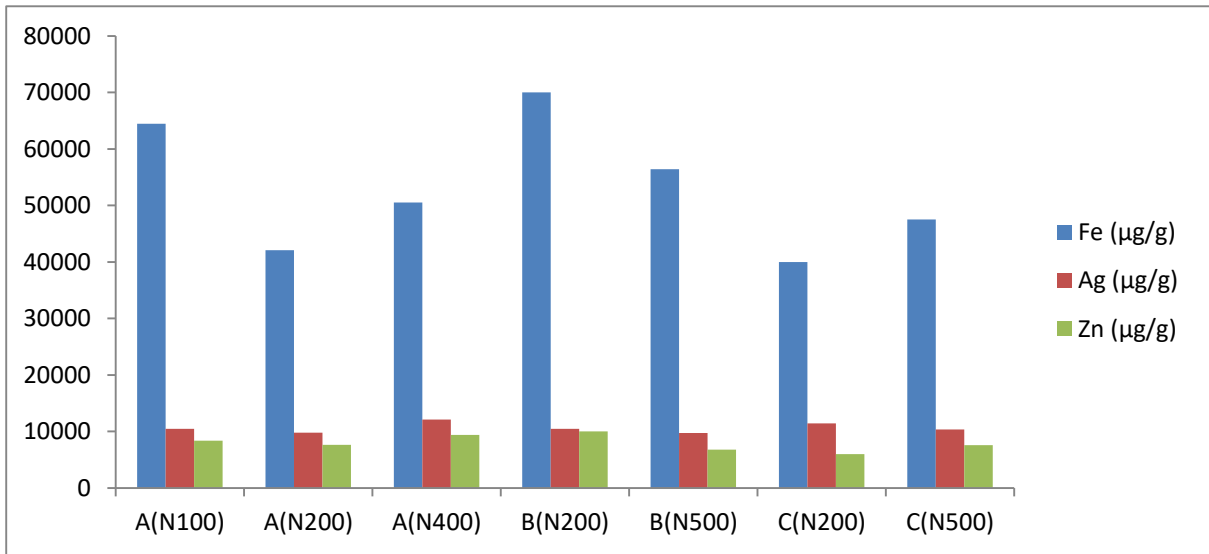
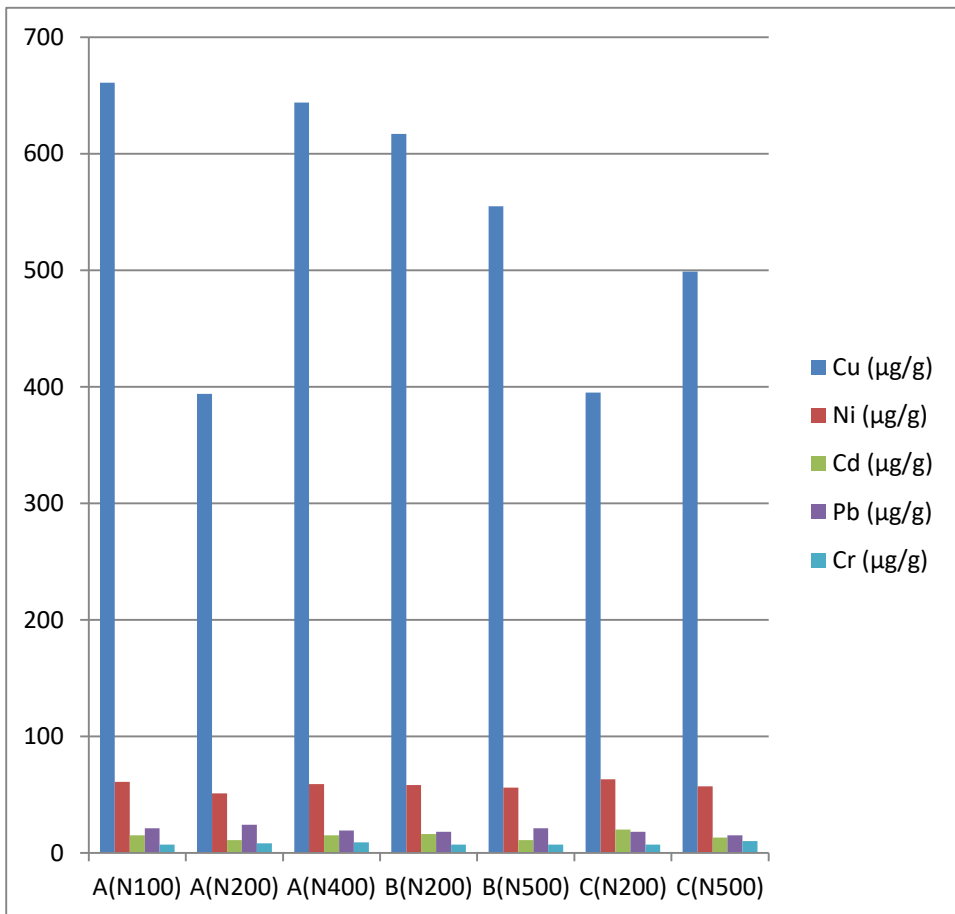


Figure 1: Concentration of Fe (Iron), Ag (Silver) and (Zn) Zinc in silver coatings of recharge Cards
Source: Baruwa (2012)³⁰



³⁰ Baruwa S.O Note 3 supra p. 47

Figure 2: Concentration of Cu (Copper), Ni (Nickel), Cd (Cadmium), Pb (Lead) and Cr (Chromium) in silver coatings of recharge Cards Source: Baruwa (2012)³¹

Figure 1 above shows that Iron (Fe) has dominant high concentration across all samples of recharge card denominations. B (₦ 200)³² has the highest concentration with 70,000 (µg/g) followed by A (₦100) with 60,500 (µg/g), B (₦ 500) with 50,500 (µg/g), A (₦ 400) with 50,000 (µg/g) while C (₦ 500) has 40,500 (µg/g) concentration of Iron (Fe). Across board, no denomination of recharge card has less than 30,000 (µg/g) concentration of Iron (Fe).³³ Zc (zinc) and (Ag) Silver also maintain concentration of between 5,000 - 10,000 (µg/g) across the sampled denominations of recharge card. Amazingly and unfortunately, A (₦100)³⁴ denomination which is most affordable by the consumer of this product contains very high concentration of the heavy metals compared with other samples investigated, and therefore could pose serious health risk³⁵. For instance, it contains about 700 (µg/g) of chromium one of the highest as shown in figure 2 above. In the graph contained in figure 2, high concentration of chromium was also discovered in A (₦ 400), B(₦ 200) and B (₦ 500) denomination of recharge cards, while Cu (Copper), Ni (Nickel), Cd (Cadmium) and Pb (Lead) maintain various degree of concentration³⁶.

Generally, A (₦ 100), B (₦ 200) and B (₦ 500) denominations have high concentration of the heavy metals compared with C (₦ 200) and C (₦ 500).³⁷ The sources of these heavy metals in the silver coating could be due to the use of their oxides as pigment or colorants for aesthetic purposes during production. It may also be due to trace quantities of these heavy metals in the raw materials in addition to water used during production processes.³⁸ The relatively high concentration recorded in the above Study is alarming for a product like recharge cards that is consumed daily by millions of cell or mobile phone users in Nigeria. This study has also demonstrated that mobile recharge cards coating could serve as source of human exposure to heavy metals through dermal contact to human system.

The health risk assessment in the work of Baruwa³⁹ was done for some metals viz: Fe (Iron), Zn (Zinc), Cu (Copper), Ni (Nickel), Cd (Cadmium), Pb (lead), Ag (Silver) and Cr (Chromium)⁴⁰. The Health Risk Index (HRI) of Fe (Iron), Zn (Zinc) and Ag (Silver) in all the samples were greater than 1 ($HRI > 1$), which show that the user of mobile phones using silver coating recharge cards are experiencing relative high health risk⁴¹. According to Chien et al.⁴² and Sajjad et al.⁴³, if the value of HRI is less than 1 ($HRI < 1$), the health risk to the population is considered acceptable. On the other hand, if the HRI is equal or greater than 1 ($HRI \geq 1$) the population is exposed to unacceptable health risk. Going by the results of the

³¹ Baruwa, S.O note 3 supra p.48

³² The real identities of the Service providers are concealed for ethical reasons. They are thus represented as A, B and C.

³³ Note 3 supra, p. 34

³⁴ It is noteworthy that this denomination of recharge card is now available as ordinary paper print

³⁵ Note 3 supra, p. 35

³⁶ Note 3 supra, p. 39

³⁷ Note 3 supra, p. 40

³⁸ Note 3 supra, p. 43

³⁹ Note 3 supra

⁴⁰ Note 3 supra, p. 43

⁴¹ Note 3 supra, p. 42

⁴² Chien L.C, Hung T.C, Choang, K. Y, Yeh, C.J, Meng, P.J (2002) Daily Intake of TBT, Cu, Zn, Cd and As for Fishermen in Taiwan, *Science of Total Environ* 285: 177 - 185

⁴³ Sajjad K., Robina, F., Shagufta, S. Mohammad, A.K, Maria, S. (2009) Health Risk Assessment of Heavy Metals for Population Via Consumption of Vegetables, *World Applied Science Journal* 6(12) : 1602 - 1606

research carried out by Baruwa⁴⁴ and Okunola et al⁴⁵, it is clear that the population consuming these samples with heavy metals is exposed to high health risks. Unarguably, the likelihood of harm of the silver coatings of commercially available recharge cards has been established empirically. This is one of the elements of risk factors considered by law to determine the standard of care expected of the service providers. It is therefore unequivocal, that the Service providers are in clear breach of duty of care owed their respective subscribers.

The seriousness of the injury that is risked

Another element of risk factor to be considered with respect to the standard of care expected of the service providers is the seriousness of the injury that is risked. By this we mean gravity of the consequence of the service providers' act of exposing their customers to the hazard of heavy metals through the silver coatings on mobile-phone recharge card. The consequences of dermal contact or any other form of exposure to these heavy metals are so serious and severe that it will amount to a gargantuan tortuous lacuna should there be any established injury on the part of any subscriber or consumer of recharge card. For instance, Ni (Nickel) exceeding its critical level might bring about serious lung and kidney problems apart from gastrointestinal distress, pulmonary fibrosis and skin dermatitis.⁴⁶ Too much Zn (zinc) can cause eminent health problems such as stomach cramps, skin irritation vomiting, nausea and anaemia.⁴⁷ Excessive ingestion of Cu (copper) brings about serious toxicological concerns such as vomiting, cramps, convulsion and even death⁴⁸. Cd (Cadmium) is easily absorbed by the lungs and it exposes human health to great risk. Chronic exposure of Cadmium results in kidney dysfunction and high levels of exposure will result in death.⁴⁹ Once absorbed, Pb (lead) accumulates in high concentrations in bone, teeth, liver, lung, kidney, brain, and spleen, and it goes through the blood–brain barrier and the placenta. Pb (lead) can also damage the kidney, liver and reproductive system, basic cellular processes and brain functions.⁵⁰ The above constitute a few examples of the serious injury that recharge card users risk due to the heavy metals contained in the silver coating of recharge cards in Nigeria. The seriousness of the various degrees of injury calls for a great duty of care from the service providers and the obvious absence of this care signifies a clear breach of duty of care. In *Paris v. Stepney Borough Council*⁵¹ the plaintiff was employed as a mechanic in the maintenance unit of the defendant. The one-eyed plaintiff was not provided with goggles to wear for protection in his work. While working under a vehicle, a metal flew into the good eye and he became blind. An action against the defendant for negligence succeeded as the court held that the defendants were negligent for not providing the plaintiff with safety goggles. This decision was based on the seriousness of the injury suffered. Just as the plaintiff in this case had only one eye, recharge cards consumers have one life and exposing them to the risk of heavy metals contained in the silver coatings could be quite dangerous.

The importance or utility of the defendant's activity

⁴⁴ Note 3 supra

⁴⁵ Note 4 supra

⁴⁶ Note 8 supra

⁴⁷ Note 6 supra

⁴⁸ Note 7 supra

⁴⁹ Note 10 supra

⁵⁰ Note 11 supra

⁵¹ (1951) AC 367 1 All ER 42. See also *Watt v. Herefordshire CC* (1954) 2 All ER 368 AC

The next variable to be considered in the risk factor is the importance or the utility of the defendant's activity to the social, economic, and political life of the people. If such activity is of high value, the society may permit otherwise unjustifiable exposure to risk. An example of the above circumstances is where a police officer may be justified if he resorts to the use of firearms in carrying out his duty of apprehending a criminal, thereby exposing innocent passers-by and bystanders to some risk of injury from stray bullet⁵². Another instance is the driver of an ambulance or fire engine responding to an emergency is required to move at a very fast speed and take some traffic risk to the detriment of other road users.⁵³ Even at that, no one is entitled to entirely ignore the safety of bystanders or other members of the public. In the above circumstances; one is expected to confine himself to reasonable and necessary measures to achieve his purpose. The risk involved must be balanced against the end to be achieved. However, the commercial end to make profit is different from the human end to save life. The activity of the mobile-phone service providers does not attract any emergency nor a great value that may justify exposing millions of subscribers to risk of health injury from heavy metals contained in the silver coating of recharge cards in Nigeria. The activity is clearly a commercial venture with the sole objective of making profit. This absence of importance or utility of the service providers' activity further establish a breach of duty of care owed to the subscribers.

Cost and practicability of measures to avoid the harm

In determining what a reasonable man in the position of service providers will do, another element of the risk factor to examine is the cost and practicability of measures to avoid the harm of exposing mobile-phone users to heavy metals contained in the silver coatings of recharge cards in Nigeria. According to Lord Denning⁵⁴, in every case of foreseeable risk, it is a matter of balancing the risk against the measures necessary to eliminate it. In doing this, a reasonable man in the service providers' position would only neglect a risk of small magnitude if there are valid reasons for doing so, for instance if the cost of eliminating the risk is very high⁵⁵. In *Latimer v. A.E.C Ltd.*⁵⁶ the occupier of a factory did everything possible to make the slippery floor safe again, nevertheless a worker slipped and sustained injuries, it was held that the occupiers had not been negligent. The only probable option would have been to close the factory, which in the opinion of the court is too much because the risk of harm created by slippery floor is not so great to require such action that will bring economic loss upon the factory. Contrarily, in the case of the service providers, the cost of avoiding exposure of subscribers to the harm of heavy metals in the silver coatings of recharge cards is low. For example, printing the pin code of the recharge cards on ordinary paper is far cheaper than enclosing them in silver coatings containing heavy metals which are harmful to the consumers.⁵⁷ Again, mobile-phone can be recharged through request code on Short Messaging System (SMS), through the internet or from the Automated Teller Machine (ATM).

⁵² *Bein v. Goyer* (1965) S.C.R 638

⁵³ Fleming, *The Law of Torts* (5th ed.) p. 115, in Kodilinye, G. and Aluko O. (1999) *The Nigerian Law of Torts*, Spectrum Books Limited: Ibadan. p. 43

⁵⁴ *Latimer v. A. E. C Ltd.* (1952) 2 QB. 701 at 711

⁵⁵ *The Wagon Mound (No. 2)* (1967) 1 A.C. 617 at 642

⁵⁶ Note 51 *supra*

⁵⁷ As a matter of fact, the recharge cards' pin codes across networks and denominations are increasingly appearing on ordinary paper in recent time, perhaps because the cost effectiveness and the state of the Nation's economy.

It is therefore cost-effective and practicable to avoid the harmful effect of heavy metals contained in the silver coating of mobile-phone recharge card in Nigeria. Hence, one can safely conclude that considering cost and practicability as elements of risk factor, the service providers have breached the standard of care that is required of a reasonable man in their position by not balancing the risk involved in the use of silver coatings on recharge cards against the measures necessary to eliminate it in accordance with the position of the law espoused by Lord Denning in *Latimer v. A.E.C Ltd.* (supra). Other similar factors that could be considered under the law to establish whether the service providers are in breach of duty of care owed the subscribers are skill, knowledge and intelligence. An individual who holds himself out as having a given skill is expected to display the average skill, knowledge and intelligence possessed by people or organisation performing such services.⁵⁸ With the claims of cutting edge technology by virtually every mobile-phone service provider in Nigeria, it is expected that their level of skill knowledge and intelligence will dictate safer methods of preserving the pin code for customers to recharge their cell phones.

Puzzles and paradoxes

In the foregoing discussion, it has been empirically established, that the silver coatings of commercially available recharge cards in Nigeria contain heavy metals which are harmful to human health. It is therefore unequivocal, as discussed above, that the Nigerian service providers owe their respective subscribers the duty of care not to expose them to the harmful effects of these heavy metals. This duty of care has also been breached by dint of scientific analysis of the inherent danger in the various components of the heavy metals. What remains unclear is the degree of injury suffered by the subscribers. There is no available data to show whether subscribers suffered any injury as a result of exposure to silver coating of commercially available recharge cards in Nigeria. This is an obvious limitation of this work. However, it is trite that the ailments that can afflict recharge card users via exposure to heavy metals could also be contracted through other means. Therefore, any injury suffered because of exposure to heavy metals from the silver coatings of recharge card could be shrouded in doubt with respect to its specific source. As such, an ailment suffered because of exposure to heavy metals from the silver coatings of recharge card can be attributed to another source. Even when it is obvious that a particular injury is as a result of exposure to heavy metals, which service provider will be held liable for breach of duty of care? because most Nigerians are multiple subscribers. The matter becomes more precarious with the recent emergence of “one card,” which allows access to any mobile network. In *Holthy v. Brigham & Crown (Hull) Ltd*⁵⁹, the claimant was negligently exposed to asbestos by many employers for several years, he consequently contracted asbestosis. There arises the conundrum of quantum of negligence and liability of each of the numerous employers of the claimant. However, asbestosis cannot be treated as a divisible injury; proportionate damage can only be awarded technically for divisible injury. It is therefore difficult to measure the length of time and intensity of the claimant's exposure to asbestos while working for different employers. Similarly, in *Rahman v. Arearose Ltd*⁶⁰ the claimant was beaten and thereafter received negligent medical treatment, both acts were found to have cumulatively caused him psychiatric harm. In the same vein, any injury caused by the exposure of subscribers to heavy metals contained in the silver coatings of recharge card will be cumulative and not divisible

⁵⁸ While a surgeon is expected to display the amount of care and duty expected of a competent member of that profession, a Jeweller who pierces ears for earrings is expected to possess only the skill expected of a Jeweller not that of a surgeon. See *Whiteford v. Hunter* (1950) W.N. 553 and *Philips v. Whiteley* (1938) 1 All E.R. 566

⁵⁹ (2000)3 All ER 421

⁶⁰ (2001) QB 351

injury because most individual Nigerians are subscribers to more than one service provider. In this situation, it is apparently difficult to measure the degree of tortious liability of different network service providers in case of any injury.

Further still, if the service providers are negligent, subscribers who scratched the silver coatings of recharge cards with bear finger nails are not less negligent as they would be guilty of contributory negligence. Essentially, contributory negligence is the negligence of a subscriber which works in consonance with the negligence of the service providers and results in an injury to such subscriber. Lord Denning captured the purport of contributory negligence in the following words:

A person is guilty of contributory negligence if he ought reasonably to have foreseen that, if he did not act as reasonable prudent man, he might be hurt himself; and in his reckoning he must take into account the possibility of others being careless.⁶¹

The standard of care for the safety of a subscriber expected of him is that of a reasonable and prudent man who is expected not to scratch the silver lining on recharge cards with his finger nail to avoid direct dermal contact and ultimately, exposure to heavy metal content therein.

Despite the foregoing, sight must not be totally lost of the inherent injury of silver coatings of commercially available recharge cards in Nigeria as established in empirical research⁶². The concomitant breach of duty of care owed the subscribers should not be overlooked either. More importantly, the backward and forward-looking elements of tort law must be considered for a detached understanding of the latent issues in this paper. Law of tort looks backward to the past wrong and addresses the harm done, while focusing at the same time on developing a response to the risk of harm embedded in the future.⁶³ If for paucity of empirical data in respect of possible injury suffered, the retrospective interest of Nigerian subscribers cannot be protected in form of compensation; their prospective interest must be protected by preventing or deterring future harm via exposure to heavy metals from the silver coatings of recharge cards. Law in the information communication technology (ICT) age must be poised to constantly regulate the emerging human behaviours and develop unrelenting response to the risk of harm accompanying our technological advancement. Even when the production of the recharge cards with silver coatings is out sourced by the service providers, they can still be vicariously liable in case their negligent act results in a tortious injury.⁶⁴

In Africa, where many countries including Nigeria are still groping for development, law must be viewed beyond its traditional objective of maintaining public order and justice. There must be a conscious use of law as an instrument of development in Africa, in tandem with the emerging scholarship in Law and Development studies around the world. Deteriorating human welfare is one of the established characteristics of underdevelopment in Africa;⁶⁵ law

⁶¹ *Jones v. Livoz Qaurries Ltd.* (1952) 2 QB 608 at 615; *Oyalowo v. M. De Bank Transport Ltd.* (1973) 2 W.S.C.A. 35

⁶² Note 3 – 13 supra

⁶³ Kirsty H. and Erika R. (2009) *Tort Law*, Press New York : Oxford University p.9

⁶⁴ Out sourcing of the recharge card production becomes a certain possibility with the emergence of ‘one card’ which bears no label or trade mark of any of the prominent service providers in Nigeria but allows access to all the networks.

⁶⁵ E. Nnadozie ‘NEPAD, APRM, and Institutional Change in Africa’ in S. Adejumbi and A. Olukosi (Eds.) *The African Union and New Strategies for Development in Africa*, Amherst: Cambria Press, pp. 207- 241

can therefore not be passive when subscribers' health is endangered through exposure to heavy metals from the silver coatings of recharge cards in Nigeria as established in this study. It is this legal foresight, through tortuous window, that this study seeks to exercise, given the knowledge of law as both an 'accelerator' to propel and a 'brake' to save developmental process from derailment.⁶⁶ Traditionally, there are two main approaches to the study of Law and Development, idiographic and nomothetic approaches.⁶⁷ The idiographic approach involves piecemeal empirical studies into specific areas of substantive laws relating to different socio-economic activities, institutions and regulations assessing their effectiveness and developmental impact.⁶⁸ It also includes how substantive laws affect economic, social and human development generally. Furthermore, the idiographic approach is particularly useful to promote and provoke an evaluation of substantive laws in Africa with their colonial heritage which do not meet our contemporary developmental needs. It is in consonance with this approach that this study assessed the effectiveness of tort of negligence as received in Nigeria on emerging issues in the ICT sector.

Recommendations

It is recommended that the service providers must alert the end-users of their services to the health risks inherent in the recharge card coatings and the safeguards against falling victim to the risks. Inscription of warning and direction on each card would fulfil this requirement. Waiting for the occurrence of serious legal injury may be too costly. It is also incumbent upon the service providers to take out adequate insurance coverage against these insidious but real risks. The predominance of paper recharge cards could be encouraged to reduce the risk of possible health hazards inherent in the use of recharge cards with silver coatings. This trend has however been disrupted by the emergence of "one card" with silver coatings across all denominations of recharge card. Providing enabling facilities for the purchase of air time by electronic means would reduce the risk of health hazard. These include recharge through SMS and ATM among others. There is the obvious need for further research on this subject, by both legal and non-legal scholars. Such research should not be restricted to mobile phone recharge cards, it should involve investigation of the content of other forms of scratched cards. As a matter of necessity, service providers could sponsor Chemists and Laboratory Scientists to do further research in this direction. Specifically, a research is required to investigate the contents of "one card", to assess the degree of health hazard that could emanate from this new innovation and create awareness about same among subscribers.

Conclusion

This paper examined the puzzles and paradoxes of the GSM service providers' liability in relation to their duty of care to the subscribers. This is in the customers' exposure to the heavy

⁶⁶ Allegorising development process as a vehicle in a motion, Ocran noted that Law could serve as 'accelerator' to keep the process moving and as 'brake' to save the process from derailment. As 'accelerator', law must be consciously evoked as a tool for social engineering towards development, with both legislation and enforcement of the law serving as crucial instrument in that regard. As 'brake', law must also be consciously evoked as an instrument for stemming pathologies such as corruption and other impediments in the development process. See: T.M. Ocran (1978) *Law in Aid of Development*, Tema: Ghana Publishing Corporation. p.17. Cited in Baderin, M.A (2011) *Law and Development in Africa: Towards a New Approach*. *NIALS Journal of Law and Development*. Vol. 1 p. 19

⁶⁷ T.M. Ocran op cit. p. 17 and R.B. Seidman (1972) 6 *Law and Society Review*, No. 3 pp. 311- 342

⁶⁸ M.A. Baderin Note 63 above supra p. 30 The nomothetic approach, essentially relates to general conceptual studies and involves the theoretical analysis and interrogation of the different variables that influence the relationship between law and development generally. *ibid*

metals immanent in the silver coatings of the mobile phone recharge cards. The paper touched on diverse but related issues like breach of duty of care by service providers, likelihood of harm, the seriousness of the injury that is risked, the importance or utility of measures to avoid defendants' activity and the cost and practicability of measures to avoid the harm, among others. It is found that the neighbourhood principle, which is pivotal to the all – important duty of care in tort of negligence, has not been observed by the service providers. This is evident in the hazardous content of silver coatings of the commercially available mobile phone recharge cards in Nigeria, as revealed through empirical research. The service providers seem to place profit-making over and above the health, safety, and welfare of their numerous subscribers. These excesses of the service providers can be curtailed through the instrumentality of law at the slightest opportunity. Therefore, the discipline of law in Nigeria needs to grow beyond the traditional means of social sanction; it must be a catalyst behind our development process. This is what this paper sought to demonstrate.