Internet Waste Management - The Intangible Waste & Its Impact on Carbon Footprints

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Abstract

The growth and development of an economy is crucial in today's times. With fast pace of technological advances all across the globe, the need for internet is an absolute necessity. Once which was considered crucial only for work is now flying high up the ladder and is required for all most everything. Be it live streaming for leisure, shopping, payments and transfers, re-creation, investments, hospitality and so on. The list is endless.

With growing population & development in technology the telecom service providers have made sure to provide data services available in every corner of the world at throw away prices, making it an inevitable part of one's life. The day is not far off when Internet shall find its place in Physiological Needs among the basic being food, clothing & shelter as quoted by Maslow in Needs Hierarchy Theory.

To be true there is nothing wrong in updating oneself and using the available internet. But the problem is the amount of waste it generates which further adds to the carbon emissions creating another mode for environmental pollution.

This paper wishes to create an awareness among the people about the waste created through internet and suggest ways to reduce it. For the purpose of the study exploratory research is conducted to enquire about the created waste through the means of internet and its implication on the environment and our lives.
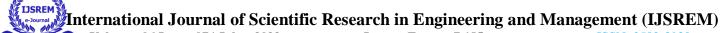
Key Words

Internet Waste, Green Digital Economy, carbon emissions Internet Waste Management.

Introduction

Internet is shaping our present and is a key ingredient in transforming our future. No one would have thought that a tool that was created in 1960's where the biggest problem was size of computers & cost soaring the heights, where data sharing was inconvenient and resulted in slower processing slowly and steadily progressed to packet switching making the transfer of data in small packets for easier transmission without interruption. This further gave birth to ARPANET, the first widely used computer network in 1969 which gave birth to E-

Mail and electronic messages in early 1970's. The constant upgradation in efforts gave the world HTML developed by Tim Berners Lee in 1990 which gave another magic box to the people in the following year in the form of World Wide Web (WWW). Business leaders like Amazon started their commercial operations which further gave the world advent of Google on the web. Today's market leader in social media Facebook emerged providing an interface to build a community on the internet and gave the world more options from Instagram, WhatsApp and Telegram. Internet recorded 400 million active users for the first time in 2010.

Since then, there has been no looking back for the internet. The current game changers include, Big Data, Internet of things, Artificial Intelligence & Metaverse ruling the entire world. There are unprecedented tons of waste created in electronic form through the use of these modern technologies and its further going to increase expediently requiring efficient & effective management handling. The world being run by Genius Management Gurus requires their attention & expertise to handle such waste and create a safe, progressing Green Digital World.

Meaning of Internet Waste

It refers to the waste created by storing and transfer of data through usage of land, water, electricity and other resources. In other words, a waste without the intention to re-use. There are tons of garbage that we dump each nanosecond in form of live streaming, online advertisements, social media reels and stories, photographs, videos, online gaming, e-mails, file transfers. All these can be termed as waste because they may not be useful in future but have been stored in the available space which requires electricity, infrastructure, cooling resources, rare minerals etc.

Where everyone talks about environment preservation and conservation through environmentally friendly goods and services like banning single used plastics, biodegradable cutlery, tree plantation, energy conservation, recycling, management of waste through Internet Of Things (IOT) where we are managing the tangible waste, no importance is being given to the waste that is created through the usage of internet. Its easier to say that Ignorance is Bliss but not necessarily that it doesn't exists. Where handling waste is governed under different laws of the nations, unfortunately there is no mechanism for monitoring the internet waste that results in carbon emissions.

The business houses have been awarded with numerous awards and recognition and have brought laurels to their country for their immense contribution in areas of technology, management, social development, working culture but there is no mention of efficient handling of internet waste. Unnecessary e-mails, files sharing, cloud storage, devices & equipment further accentuate the issue of internet waste and requires immediate attention.

With 1.6 billion tons of Green House Gases (GHG) emissions every year, it is projected that by 2030 internet waste shall contribute to 25% of the total emissions. As per the data available one Gigabyte of data gives 1 KG of CO2 emissions. Every internet page that is loaded, every online advertisement, views of videos uploaded on any internet platform increases the GHG emissions. Advances in modes of marketing & advertising through digital platforms have resulted in adding more to the prevalent issue. The rising popularity of Tik Tok & Instagram may have provided a wide access of information, business & recreation to the public at large but have been widely responsible for aggravating our concern for environment.

Thanking the pandemic Covid-19 the demand and usage of internet has grown exponentially all across the globe. The lengthy video conference meetings, the online mode of education, investment opportunities using technology in form of virtual currency, NFT, online entertainment OTT platform like Netflix, Amazon Prime, Online gaming have contributed an unimaginable amount of CO2 into the environment. Facing an acute demand for fast data transfer the creation of data centers having been a booming opportunity for the tech giant like IBM, Microsoft, Apple etc. making them explore the deep-down oceans to form their reservoir of data storage. Marine pollution due to plastics have already been a cause of concern for the environmentalists and now internet infrastructure, its radiation shall further add to its basket.
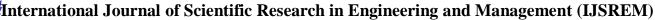
Objectives

1. To create awareness for Internet Waste.
2. To suggest measures to reduce it.

Impact of Internet Waste

1. **High Traffic -** Technological gadgets being affordable create a huge demand for high speeding data packs. Data service providers running in the race for cheaper data packs are creating excess demand for internet usage all across which creates heavy traffic on the web. Regular updates in the technological world provide a smooth experience to the users at the cost of the eco system. Such high traffic on the web is handled by the tech giants with number of infrastructure development at the cost of the environment wellbeing.

2. **More Infrastructure –** The rising demand for 5G has compelled the Telecom companies to develop well organized system to deal with the unending requirements of the people for faster and consistent data services. When the entire world was shut behind the doors due to global pandemic Covid- 19, the sector that was working through making other things work was telecom. Such kind of work requires immense set up in form of cables, wires, equipment's, machines, computers etc. Huge amount of investment both in form of capital and working is essential to make things work.
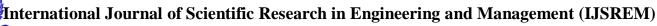
3. **Increase in Carbon Footprints –** Carbon footprints refers to total amount of GHG emissions in the environment. An average carbon footprint by an individual is nearly 4 tons. As per the studies conducted the median of carbon footprints of entire world due to data storage and transmission emit around 32 g of CO2 per GB. The global water and land footprint of internet use is estimated around 2.6 trillion of water and 3400 square kilometers respectively.

4. **Loosing Traditional System –** Everything surrounding us evolves around the technology driven by the internet. Though internet being beneficial in reducing our burden, saving times, providing anything at wink of an eye takes us away from our traditional means which had various purposes. For example, going to a library not only provided us knowledge but also made people connect with each other and fulfil their social needs with shared knowledge and experience.

5. **Increased Stress –** It is aptly said that excess of anything is harmful and so is applicable in our current study. Everything available at the click of a button is more of a disadvantage rather than benefit. More gadgets to be maintained requiring advanced infrastructure, further paving ways for cut throat competitions among the service providers at the cost of social wellbeing. Having a secure and steady internet service all the time may not be necessary but may soon become a habit to be constantly being available online which may have not being necessary. The same time could have been utilized to pursue some hobby which would have helped in reducing screen time and investing in more health and mental and emotional developments.

6. **Impacts work life balance –** In earlier days the work time being specific to hours and days made people more content and healthier. But in today's times with everything connected to the internet there is nothing that's stopping people from work anytime and anywhere giving a serious issue of work life balance. Many corporate housed have acknowledged the same and have formulated practices to cater to the needs of their employees to create a balanced life coupled with work.

7. **High radiation –** Every now & then new studies have highlighted the issues relating to high radiation and its impact on the environment due to high intensity fiber optic cables and other supporting infrastructure required for data storage and transmission. The entire world being in need of speedy internet services have increased the radiation to the greatest levels.

8. **Eating away natural resources –** Every creation is based upon extinction of the other. Equally is applicable in the case of spread of internet services all across the globe. The base of development of these services depends upon copper, iron, aluminum and other precious metals which are extremely scarce. The rising requirements & dependance of the globe on internet services have left the world with acute shortage in supply of these natural resources.

9. **Creating E-Waste –** E Waste formally known as electronic waste refers to the waste created out of electronic products after their useful life. It includes, televisions, mobile phones, fax machines, printers, electronic chips and other electronic products. The changing technology may make the current gadgets incompatible and outdated being replaced with the newer ones leading these to the dump yards to further add to the existing pile of junk.

10. **Unnecessary reliance on technology –** Technology is a gift to mankind. But the same technology is over utilized at the greatest level everywhere around us. Anything in the name of technology using the data is commercially sold by the big corporate giants even where its not actually required. The consumers being attracted by multi-functionality of a product have shown their over dependance on the gadgets around them.
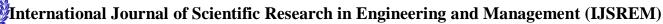
Future of Internet Waste

An estimate by the experts' project that by year 2050 the total amount of E-Waste and Internet Waste shall be twice than that of today which clearly highlights the effects it shall have on the total ecosystem. In name of growth & development we will be putting risks, hazards for the generation to come. The soaring high temperatures, ozone layer depletion, draughts, melting glaciers we have certainly devastated our habitat – The Earth.

Suggestions To Reduce Internet Waste

1. **Avoid Multiple Browser Tabs –** Multitasking is always preferred as its convenient and saves the time. Having multiple tabs open providing simultaneous view at the same time is preferred by everyone but has an impact on energy consumption and internet traffic. More tabs being open requires more energy and adds to the internet traffic. Hence, it is advisable to close the tabs which are not in use.

2. **Cloud Clean Up –** There are multiple ways to create and further add on to the digital waste. To list a few- unnecessary e-mails, duplicates of files, photographs, videos and other documents. They not only eat away the free space but also consume a lot of energy. Data centers require unimaginable quantity of power along with uninterrupted supply of air conditioning to safeguard the servers from overheating. There is one simple solution to the problem. Just delete the data which is not required. This would solve the problem of free space and also help in reducing carbon footprints on individual level.

3. **Conscious Consumption –** Prevention is better than cure holds true in the present scenario of management of internet waste. Once can just utilize the free time in investing in some productive work

or pursuing their hobbies and interests rather than surfing the internet for vlogs, reels, stories post etc. This consciousness can be brought into the minds of the people and help in creating a Green World.

4. **Talk about Internet Waste –** Coining something new and making others believe that it holds importance requires immense zeal and dedication. More & more interactions with community at large is essential to make people aware about the consequences of our working on our environment.

5. **Walk The Talk –** We live in the world of icons & role models. Be it humans or business empires. They can serve in communicating to the world at large about the impact of carbon footprints by leading from front and setting examples.

6. **Government Intervention –** The economies are being run and managed by the system of government intervention acting as a regulatory body making laws, code of conduct, execution etc. A special attention by the bodies in enactment and execution of laws relating to internet consumption can serve as a game changer.

7. **Rewards & Recognitions –** The true form of motivation is in getting backed up in the form of rewards and recognitions for the work done. The business leaders, organizations, individuals and economies at large can be felicitated with prestigious tags and statuses for contributing towards the energy conservation and carbon emissions.

8. **Usage of IOT –** Internet of Things being so powerful that everything around is surrounded by it. It further contributes to heaps of internet waste through its excessive use. The same can also be used to tackle the problem of internet waste management with due efforts of experts in the field.

Conclusion

Internet being the inevitable resource of our current and future world holds an indispensable place in the working of anything surrounding us. The growth and development of any economy is dependent on wide variety of factors. The ultimate purpose of any economy is to make this world a better place to live in with collaboration and cooperation of everyone around. The management practices are based upon the concept of efficiency and effectiveness which means technological advancements coupled with balanced ecological system creating a Green Digital Economy.

The world has been acknowledged with some great management techniques like JIT, Kaizen, Managerial Grid etc. With regular inputs and collective concern in the same direction, environmentally friendly techniques can be designed for handling the internet waste and the most optimum manner. The sustainable living is the talk of the hour and efforts are needed to make sure that the waste which is in intangible form is also dealt in the most efficient manner and in the direction of environment conservation.

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