

## ROLE OF INTERNET ON ENVIRONMENT

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**Abstract:** *Environmental pollution is the outcome of industrialization and urbanization which causes irreparable damage to terrestrial and aquatic environment. In this modern era, the information and communication technologies are growing very rapidly which remodel our future society. The digital technologies are responsible for about 4% of global carbon emission, which looks relatively small but its contribution is similar to that of aviation industry. To understand the impact of information era, it is necessary to identify the environmental aspects of information and communication technology. In this paper, the discussion is based on role of internet on environment. This study is focused on internet infrastructure and to analyze its environmental impact. Here the discussion is also on the possible solution to minimize internet impact on environment.*

**Key words:** *Internet, environment, pollution.*

### Introduction:

Excess of anything is not good and it creates nuisance and this is very appropriate in today's scenario for unrestricted and excess use of internet. In present era, the whole world is churning about various types of environmental pollution like air, water, noise and soil pollution and most of them are because of unscrupulous anthropogenic activities. Same is happening with the excess use of internet by millions of peoples in the world which adversely impact on their social and personal life. Many studies have already proved that social media addiction increased the level of depression in many peoples around the world. Justin Rosenstein was the engineer who invented Facebook "Like" button has removed the app from his mobile phone over the fear the psychological effects apps are having on the people from every corner of the world. Internet is creating similar type of havoc on the environment too.

Many of us are thinking that, using internet is a green practice. It allows us to shop online, bank online, paperless work, attend meetings from any corner of the world online instead of flying around the world. Here question arises, is it really so? Of course many things are replaced by internet which makes it one of the important tool in modern era. As compare to the traditional activities, internet's carbon footprint is low but it does not mean it is totally innocuous (Marcus Hurst, Jan.2014)<sup>(5)</sup>. But one thing we all should keep in our mind that it is just a tool and it is created by we humans so; we must control it, let internet should not control us. Internet is only a kind of development and it is fact that everyone has to pay the price of development, but at what cost? The cost should not be the destruction of our environment.



Internet of things (IoT) technology is getting very much importance in this ultra-modern era. Now days, the vehicles, watches, wrist bands, music system and many home appliances are also connected with the internet through this technology. Ultimately it will adversely impact on our environment. It is known to all of us that refrigerants contained in refrigerators and air-conditioners emit chlorofluorocarbon (CFC) which is responsible for ozone layer depletion. Now IoT connected this device emits carbondioxide also due to inappropriate recycling process <sup>(1)</sup>.

According to Professor Paul Bradford who is a Professor of computer science at University of Wisconsin – Madison that about 4,000 miles of fiber optic cables and 1,100 nodes may be underwater within next 15 years i.e. by 2033. Which will result an increase in the sea level because of which cities like New York would lose 20% of its metro conduit and 32% of its long-haul conduit (Terry Devitt)<sup>(7)</sup>. Today the internet can be accessed through smart phones and it is known to all of us that this device releases electromagnetic radiations and radio frequency which when mixed with the atmosphere causes increase the level of Green House Gases<sup>(1)</sup>.

Carbon footprint is the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization or community. Researchers recorded that a normal e-mail contains 4 gm of carbon footprints which is a cause of worry for the environment <sup>(1)</sup>. According to one study, billions of spam e-mails issent everyday across the world which can generate tremendous energy to power millions of home and vehicles on road.

Alexander D. Wissner-Gross a physicist of Harvard University estimates that every second 20 milligrams of carbon dioxide is emitted when a person brows any website<sup>(1)</sup>. Every day very huge amount of electricity is consumed by big data centers where the multiple servers are stored<sup>(2)</sup>. And in the servers, the e-mails are being stored which are transmitted over the internet from every corners of the world. And fossil fuels are the main source of electricity production which results in global carbon emission. Hence one can conclude that e-mails cause greenhouse gas emission. A recent study by the Melbourne based research center CEET in 2013 reports that the internet now accounts for 1.5 to 2% of the worlds energy consumption<sup>(5)</sup>.

We can save significant amount of electricity by just deleting some unuseful e-mails from our mail box. It can be understood by one rough calculation. In 2019, about 3.9 billion e-mail users were in the world (estimated that 4.48 billion users will be in 2024)<sup>(3)</sup>. The average size of e-mail is about 75 kb. Suppose everyone start deleting about 10 unwanted e-mails from their mail box, it could probably prevent about 2,92,5000 GB of data being stored in servers in the world. About 32 KWH of energy is required to store 1GB of data (Parth Garg, 2019) <sup>(2)</sup>. So, if we calculate above figure it would means generating 93.6 million kWh less electricity to run those servers. In its report, Greenpeace found that In India 70% of the 4,00,000 mobile phone antennas don't have access to reliable electricity sources and to make up the inadequate power supply, diesel powered generators are used. The big data center in western countries also depends on backup diesel generators that kick into action when power cuts (Marcus Hurst, 2014)<sup>(5)</sup>.



For solving data storage problems, cloud service probably could play a significant role. According to Google, cloud service can help in reducing carbon footprints. According to a research funded by Google and conducted by Lawrence Berkeley National Laboratory in conjunction with Northwestern University revealed that, organizations can also reduce about 87% of energy by using cloud<sup>(4)</sup>. Over the last few years, several giants like Google, Facebook and Apple have committed to powering their data centers with 100% renewable energy, which is a good start. Unfortunately, Amazon Web Services (AWS), the world's biggest cloud services provider, hasn't yet made the same commitment – and the same goes for many other web hosting providers <sup>(6)</sup>.

Here are some tips, by using this we can save considerable amount of energy while using internet.

1. Use spam filters, by using same we can save crazy amount of energy.
2. Delete unwanted e-mails from mail box.
3. Unsubscribe unwanted newsletters and YouTube channels.
4. Delete apps on your smartphone that you seldom use.
5. Delete unused screenshots, images, videos etc. from your drives.
6. Instead of computers, use cell phone for quick Google search.
7. Avoid visits to various internet sites just for passing the time.
8. Follow good habits for searching and browsing.

## Conclusion:

Internet itself is not bad for the environment but our habits and big data centers are responsible. In nut shell manner, one can conclude that, internet is just a tool, it is just like two-sided sword and if not use properly it will definitely harm us. So, use it wisely. Don't allow internet to harm our environment. Let's all use internet judiciously for the betterment of our Mother Earth.

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