How Pakistan Ranks Comparatively?

The state of internet accessibility in Pakistan is well below international standards and considerably lower than other regional countries. For instance, Pakistan's neighboring country India is ranked 41 places higher on The Economist's The Inclusive Internet Index.

Pakistan is ranked 90th on the list whereas India is in the 49th spot. Furthermore, scores for Pakistan are significantly lower than for India for each of the Index's sub-categories. *(See Figure 3).*

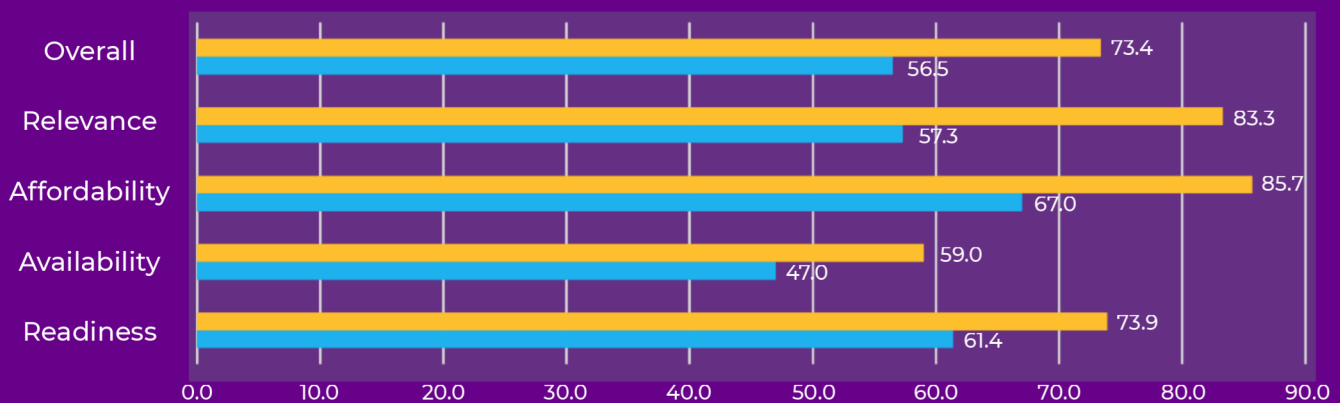## Internet and the Right to Information

It is about time we realize not only the economic losses that we are incurring as a country by depriving the majority of the population of access to proper and affordable internet, but also stress the point that in this day and age, access to adequate and affordable internet is something that falls under the ambit of essential public services. It is the responsibility of the state to make sure that the relevant infrastructure and trade policies are put in place that ensures adequate and affordable internet access to its citizens. This does not mean that the state has to ultimately provide this service itself, but rather that through effective public policies and private sector development the length & breadth of internet access along with its affordability can be increased in the country.

Every person innately has a right to access public information and we should not deprive a large section of our population of this basic right. Access to adequate and affordable internet plays an integral part with regard to access to public information in this day and age. By connecting our masses with the global information base through internet we can effectively reap the social and economic benefits that come with it.

Fig 3:
Inclusive Internet Index (2021)

	Blue	Yellow
Overall	56.5	73.4
Relevance	57.3	83.3
Affordability	67.0	85.7
Availability	47.0	59.0
Readiness	61.4	73.9

Source: *PSLM 2019-20*

Internet of things: The new economy in making

"If we had computers that knew everything there was to know about things—using data they gathered without any help from us—we would be able to track and count everything, and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling, and whether they were fresh or past their best."

"We need to empower computers with their own means of gathering information, so they can see, hear and smell the world for themselves, in all its random glory."

Kevin Ashton wrote a quote in 2009 for the RFID journal and this will help us in understanding IoT from its core. Internet of 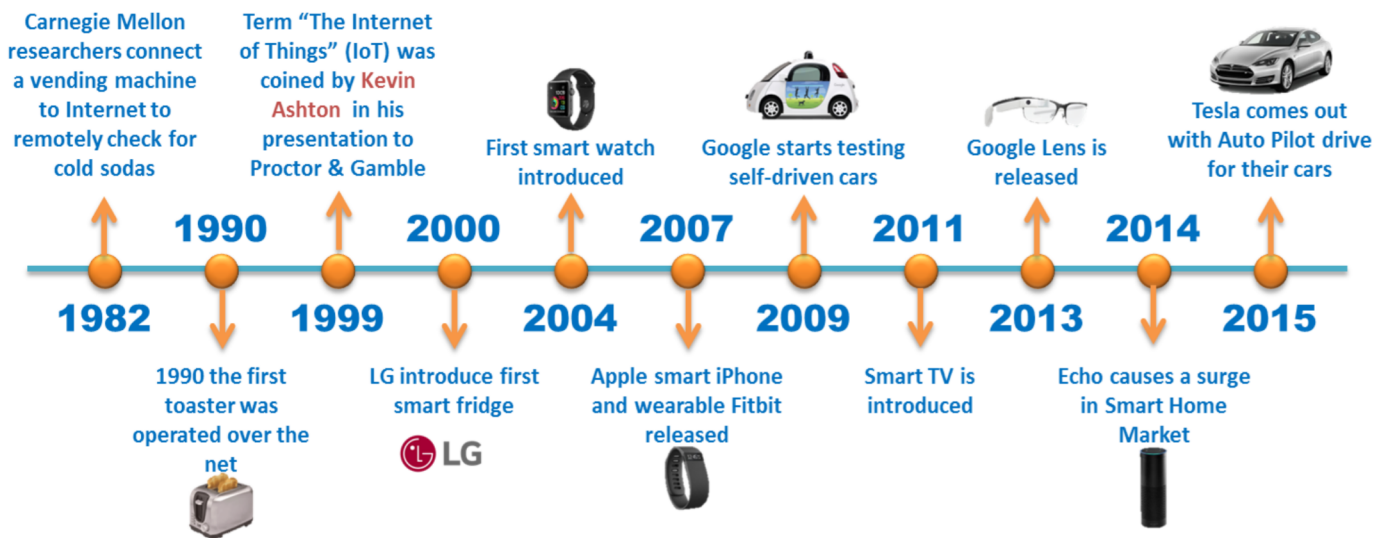things (IoT) is the interconnection of computing devices embedded in everyday objects, enabling them to send and receive data via the Internet. These devices range from ordinary household objects to sophisticated industrial tools. With more than 10 billion connected IoT devices today, experts are expecting this number to grow by 22 billion in 2025. It has spawned a new economy all together.

The IoT works in five simple steps: 1) storage devices collect data for future use 2) remote devices such as smartphone control IoT 3) the internet will provide the platform for connectivity 4) the router and gateway will allow devices to connect via wifi 5) thousands of devices will connect with internet and/or each other. The IoT concept is already in use such as Smart Mirror,

Smart Money Transfer, Smart Irrigation, Smart Doors, Air monitoring system, Smart alarm clock, Weather reporting, Smart Wheelchair, and Smart Street Light system.

There is a general view around the globe that 5G has been specifically designed for IoT use. 5G will be much quicker than first predicted. According to ETSI, 5G will address the following IoT segments: the Massive Machine Type of Communication (MTC) or Massive IoT, & Ultra-Reliability and Low latency Communication (URLLC) or Critical IoT. Examples of Massive IoT include Smart Cities, Smart Homes, and Buildings, Critical IoT includes, Gigabytes in Second, Augmented reality, 3D video, UHD Scenes, Work and Play in the cloud, Industry Automation, Self-Driving Cars, and Mission-critical applications like e-health etc.

In Pakistan, international and national computer technology firms are in the initial stages of developing Innovative services using IoT technology. IoT concept is using in measuring infrastructure with automatic meter readings in real time, Communications smart devices / sensors / actuators, smart farming, healthcare solutions, Smart grid and connected agriculture. However, a formal and comprehensive regulatory framework is needed for elaborating IoT Ecosystem. PTA Pakistan Telecommunication Authority has created an Industry working group. The purpose of this functioning group is mainly to a) Foresee the IoT future expansion in Pakistan, and b) To evaluate and recommend the possible regulatory options that PTA and the Government of Pakistan may adopt to handle the challenges and avail the opportunities offered by IoT services/applications.

Carnegie Mellon researchers connect a vending machine to Internet to remotely check for cold sodas

Term "The Internet of Things" (IoT) was coined by Kevin Ashton in his presentation to Proctor & Gamble

First smart watch introduced

Google starts testing self-driven cars

Google Lens is released

Tesla comes out with Auto Pilot drive for their cars

1990   2000   2007   2011   2014

1982   1999   2004   2009   2013   2015

1990 the first toaster was operated over the net

LG introduce first smart fridge
LG

Apple smart iPhone and wearable Fitbit released

Smart TV is introduced

Echo causes a surge in Smart Home Market

Many IoT devices run wirelessly, while others are connected. Most IoT devices use very little bandwidth, but the sheer amount of devices going online means that more bandwidth will be required. As IoT progresses, it will be important to make sure that the network can accommodate these changes. The accumulation and transmission volume of IoT devices will increase as the technology continues to evolve, resulting in an increase in bandwidth. Consumers believe bandwidth is available at the fastest speed, even as demand for IoT increases. Companies focus on bandwidth and scalable solutions because the solution will be important as the need arises. Reliability is important, self-healing fiber optic networks automatically detects and redirects in the event of a fiber cut or other interruption.

History of IoT
Courtesy: https://simplycoding.in/internet-of-things/