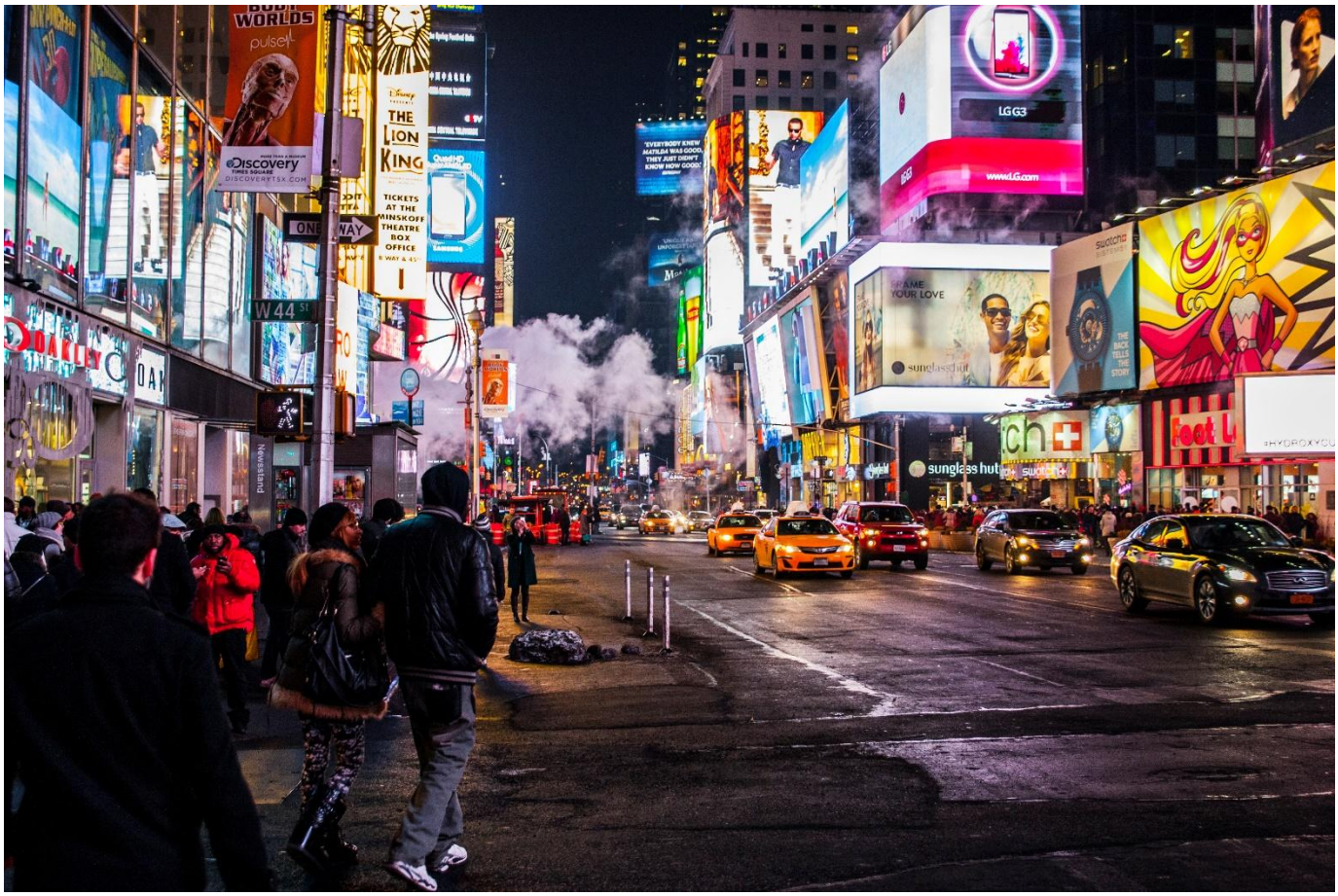
Digital Data



August 3, 2016: Four decades ago, Ray Tomlinson a computer engineer working in the APRPA net system of the US department of defense a precursor to the current day internet, went onto become the first man to ever send an email and pioneering an era where the invention fundamentally transformed the way human society communicates. It has ushered us into an era combining nearly 3.2 billion people, organizations, economies and even countries to digitally communicate creating a milestone in the information age. The growth of global internet bandwidth and data flow across borders has been a key driver of national economies. Data flows account for $ 2.8 trillion of global GDP and generates more economic value than traditional flow of traded goods.

Apart from advancement in global bandwidths, connectivity, storage and processing speeds the cross border flow has been supported by explosion in data generation. The big bang in the generation of data has been accredited the use of smart phones, connected devices, digital TV etc. which are creating gigabytes of data by the second offering a minefield of business insights. In support, number of smartphone users in India is said to be nearly 204 million and is expected to touch 2.7 billion worldwide by 2019.

Internet of Things (IoT):

In the context of data generation and cross border flow, technologies like Internet of Things (IoT) and Big Data analytics play a major role both in terms of the scope and challenges. It is expected that generation of digital data is expected to be dominated by IoT applications. It is basically a web enabled smart devices which interact with

other machines such as household appliances, security devices, public installations etc. and communicates the data, acquired from embedded sensors, for data management and analysis. Its applications are enormous, for example such gadgets monitor infrastructures like bridges to communicate conditions and warn regarding impending disasters, impacting millions of lives. In businesses operations, productivity and product design are greatly benefitted due to a high order of real time information and data analytics.

According to industry statistics, currently there are over 6 billion networked sensors installed worldwide and is expected to touch 21 billion by 2020. John Deere, a maker of agricultural equipment, uses sensors to monitor and collect moisture levels, air and soil temperatures to send such data to farmers. It helps farmers make timely decisions regarding irrigations, greatly improving output.

Big Data Analytics:

In the era of unprecedented deluge of data, its creation and storage has become inconceivable. The potential to extract key insights for business decisions are enormous. To realize that, Big data provides the tools to structure and analyze large data sets and produce insights from information available to organizations. Analysis of this data has provided answers to firms regarding cost & time reductions, product designs, optimization and smart decision making.

The digital data universe will grow from 4.4 trillion gigabytes today to 44 trillion gigabytes by 2020, making big data an indispensable tool.

Challenges:

Even though the impact of data generation, its flow and analysis to people and the economy are tremendous, yet it rakes up concerns of privacy, nation & regional security, ownership. Regarding ownership of data, the problem has been due to the conformity of laws regarding ownership centered towards physical assets and duplication. Contrasts posed by digital data due to its non-physical nature and the ability to duplicate it without losing its original value, makes it very hard for the existing laws. Furthermore, it becomes more complex when dealing with big data, where the data once sorted and analyzed becomes more useful to those specific users.

Multiple users to a single raw form of data, applying different analytical techniques with diverse goals in their minds, provide varying value to each of them. This adds a lot of ambiguity to the pricing of data making it exasperating for the seller.

Security and Privacy:

Areas of privacy and security have become a major source of worry for countries and its regulators. In spite of the tall order of global data flow there is no global model to manage it, with some countries having no restriction on transfer of personal data to foreign jurisdictions. The areas of focus regarding data protection needs to be centered around 1) types of data subject 2) sensitivity of data 3) sources of data; and 4) sectoral data, exemptions related to the above factors need to be addressed for a robust framework.

In the recent years, countries with data protection legislations have grown rapidly, now reaching a total of 108 with either comprehensive or a partial plan, however with nearly 30% of the countries with no law in place, reduces trust and confidence in a wide range of commercial activities. This situation bemoans of a long journey ahead in terms of strong protection and global consensus.

Recent cyber-attack on the Bangladesh Central bank which led to the loss of $ 80 million is not a one off incident, according to McAfee the reported cost of cybercrime to the global economy is estimated at $ 445 billion. The exponential rises in the number of attacks by the day are conducted by organized groups using sophisticated

methods making it difficult to track for the enforcement agencies. Experts confirm that banks are the most vulnerable among the firms, exposing the poor conditions of security.

With the number of firms going digital, they are exposing themselves and putting lots of sensitive data at risk. In spite of efforts by firms in shoring up their defenses, the dynamic nature technology makes it an uphill task. Considered one of the major technological innovations of the 21st century digital data generation and its flow keeps us on our toes in terms of the opportunities and insights it offers, yet it important to have a definite plan to tackle the challenges it comes with.