

Committee: United Nations Development Programme

Topic: The Question of Finding Solutions to the Challenges of Digital Governance

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Introduction

The issue of digital governance has been of rising importance to the United Nations Development Programme. This committee sets objectives for finding solutions to eradicate poverty, reduce inequality and strengthen governance within one nation, particularly in a way that ensures universal equity. Recent advances in technology and alteration into the system of digitalised government have led to considerations of how digital technologies help nations meet those objectives.

Over the past three decades, the gravity of internet users has expanded and globally distributed among rising and mature economies. There are more than 5.3 billion active internet users, accounting for 65.4% of the global population. A world with a lack of information is now shifted to a world with a plethora of information. Information overload can create social sigma more easily than information lack did. Technology allows people to communicate through networks without partial constraints and to share information on multinational platforms. Accordingly, people get to observe a variety of either reliable or unreliable news. Following the global alteration in people's lives, governments try to tackle challenges by starting Big Data initiatives on various topics from public institutions to agencies to form policies. Especially since the outbreak of the COVID-19 pandemic, the digital transformation and development of online activities have been more actively provoked to be researched.

Digital governance refers to the system, policies and regulations managed and regulated with the use of digital technologies in order to enhance the efficiency and accountability of services. It is crucial to guarantee that the governance frameworks are in place to protect our privacy, security and rights, while also stimulating the economic growth of countries. The question of data protection, cybersecurity, rights and ethics, access to information and the equitable use of technology still remain to be resolved regarding the utilisation of digital framework. Hence, governments and organisations

are responsible for facing these challenges, implementing effective strategies to strike a balance between fostering innovation, and safeguarding individuals and society as a whole.

Whilst the advancement of technology is directly related to a country's development and reinforces the economy, the current inclination of digital changes throughout society would leave drawbacks. This topic deals with the solutions to the challenges of digital governance which is the largest concept of digitalization. Depending on the country stands and current economic status, each nation would have to make different decisions on how to best solve the challenges.

Definition of Key Terms

Digital governance

The use of information and communication technologies to transform the set of governmental policies, procedures, and guidelines, to enhance the efficiency, effectiveness, and accountability of public institutions and services; The ideal initiatives of fostering digital governance are to stimulate citizen participation, inclusion and empowerment in the decision-making process.

Governance

The act of governing under the system of national or organisational work; This provides the fundamental framework for managing the system, which is identified as 'who makes decisions', 'who has the authority to act on behalf and have accountability to the country/organisation', 'civilian policies/rules', 'practical tone of work'. As to improve the performance and stability of the system, the governance must always be under inspection for changes.

Big Data

Voluminous data of high velocity and variety; Big Data is usually known as the three Vs: volume, velocity and variety. Data that has previously existed and been unused can also be put upon the range of use throughout the system of big data. Databases should process and store data immediately as data comes. Structured, semi-structured and unstructured data is collectively gathered. Big Data creates a strong analytical basis and yields stronger insights. Hence it holds a crucial role in private sectors, organisations and individuals by providing maintenance and support to the digital system, wider view of customer insights, and strengthening the cybersecurity.

Digitalization

The incorporation of digital technologies into business/ governmental/ social processes; Digitalization

has emerged as a prevalent force that is revolutionising every aspect of our lives. A wide range of fields including communication, business, education, and governmental activities utilise digital platforms and services. Once digitalization is adapted to the system, either strategic or practical procedures within the system will be operated with the use of computers and the internet.

Artificial Intelligence

Software or a computer-controlled robot designed to perform human-like tasks; Artificial Intelligence, as it implies with the label, is the stimulation of human intelligence by computing systems. With a foundation of hardware and software for gathering the data and training the machine learning algorithms, Artificial Intelligence analyses the pattern of data and creates an outcome.

New Normal

The term to describe people's time of life after upheaved critical structures of changes in health systems, economic life, social life, and medical treatments; As digital technology based interaction and community is formed, people would step forward in the advent the Fourth Industrial Revolution, changed from old traditions of life

Digital Ecosystem

An interconnected information technology resource to create a digital offering; Digital Ecosystem involves suppliers, customers, trading partners, applications, and the third-party data service providers to act as a unit. It is usually self-organised and scalable for economic players or companies. Global governance of the digital ecosystem reaps benefits of economies by converging online platforms, data, infrastructure and digital trade.

The Fourth Industrial Revolution

The current Industrial Revolution where Information and Communication Technology such as Artificial Intelligence, IoT (Internet of Things), Big Data, Computing Clouds and mobiles are converging across the society;

“Leaving No One Behind”

A commitment made by United Nation Member States to eradicate poverty, reduce inequalities and end discrimination; It is the central transformative promise in this digitised world. We must ensure that no one is left behind with the alteration in society and development in technologies.

Background Information

History of Artificial Intelligence Development

Could machines think? The invention of computers revolutionised discussion of the question. Advances in computing offered the best prospects yet for machines that could simulate reasoning, comprehend decision-making, problem-solving and linguistic procedure, and even read human minds. Development of artificial intelligence requires a method to evaluate the intelligence of machines like index measurements for humans' reasoning ability. Alan Turing raised upon the idea of an 'imitation game'. This game appraises machines' capability to derive a result by a certain input, through a method of questioning and answering. If the action is indistinguishable from that of persons, machines are valued to think as humans. This is later named the '*Turing Test*', which spurred the research on artificial intelligence to imitate human brain cells.

Computationalism, also known as the computational theory of mind, is the information processing system in which human cognition and consciousness are processed through computation to analyse problems and sequences. Computationalism only portrays results with information that humans put in. John McCarthy, Marvin Minsky, Nathaniel Rochester and many other cognitive psychologists conducted studies on computer science, based on this ideology of computationalism. However, due to computer performance constraints, limits on functionality, and lack of data, computationalism failed to gratify the expectation for artificial intelligence. In 1980, Connectionism then came to the forefront of machine research. Connectionism imitates the human brain with the Artificial Neural Network. Rather than manual inserting of information, computers learn data themselves like the process in the human brain. This requires an enormous range of data and computing capabilities but these also hold constraints at that time, making it insufficient to be used in business. Finally, with the emergence of the GPU (Graphic Processing Unit) in 2010, artificial intelligence fell into a deep learning state. This is the basis of modern computer's artificial intelligence systems.

Artificial Intelligence Overview

Artificial Intelligence today learns the data by focusing on acquiring data and creating rules for how to turn it into actionable information, which is the algorithm. The algorithm provides computing devices with precise instructions for completing specific tasks, especially in a way of specialised work to an individual. Reasoning and self-correction are aspects of AI programming that are related to the way of

reaching desired outcomes and constantly fine-tuning the algorithm in order to provide the most accurate result. 'Alpha Go', and 'Chat GPT' are among some of the most pivotal outcomes. This has proved that Artificial Intelligence can easily mock humans' creativity and reach the fields of art. Neural networking systems, rules-based systems and statistical methods are used to generate new images, texts and ideas in this case.

In recent years, big technology firms provide open source artificial intelligence, which leads to the standardisation of the system. Therefore, overall finance and time required for artificial intelligence development is significantly reduced from 2015, accelerating the advancement of the digital ecosystem. Google, for example, opens its 'TensorFlow' to the public. As large companies like Apple, Samsung, Alphabet, and Amazon competitively take over start-up companies to let them focus on the Fourth Industrial Revolution, it is implied that the daily products and services would be more digital-based.

Post Covid-19 pandemic society

The transmission of Covid 19 has become the most dominant disease in this modern era. Globally, seen as the first outbreak in China. 'social distancing' emerged as an inevitable act to prevent the spread of disease. Or, some countries 'locked down' cities, meaning that citizens were resisted, by compulsion, to only move within a permitted boundary of area for public safety from the contagious disease, called quarantine. This accelerated the shift in the international social economic paradigm.

IT companies and large companies opened online servers where employees can work from home. This mutually augmented the number of web communication platforms like 'Zoom', 'Google Meet', and 'Webex'. Scholarly situations were not an exception. Students joined online classes, learned through videos of their professors, and readily accessed PDF versions of their textbooks. Regardless of the differences in the degree among nations, civil services, and national commerce also encountered noticeable changes. Unmanned or hybrid shops advanced, and the rate of E-commerce increased to the level where it influenced offline distributors to push ahead with online sales and shipping strategies. Furthermore, healthcare, transportation, and cyber security are other aspects of post-covid 19 digitalisation.

This state of '*New Normal*' is also sometimes analysed as a new emergence of '*untact society*', introduced in 2020 as the Korean government constructed a policy to remove layers of human interaction. Experts explain this phenomenon may inaugurate new reforms of racial justice and social

equity, enhance the quality of the workplace, and produce technological benefits in communities living with smarter and safer environments. However, many highly criticise the close relationship between humans and technology. It may rather worsen economic inequality because it reduces the level of fertility and digital tools are not accessible to every person. Also, misinformation would be spread via online, and lies, or hate speech deliberately stigmatise social problems, propagating biases and fears. It is crucial to find ways to adapt to the changes while ameliorating the problems.

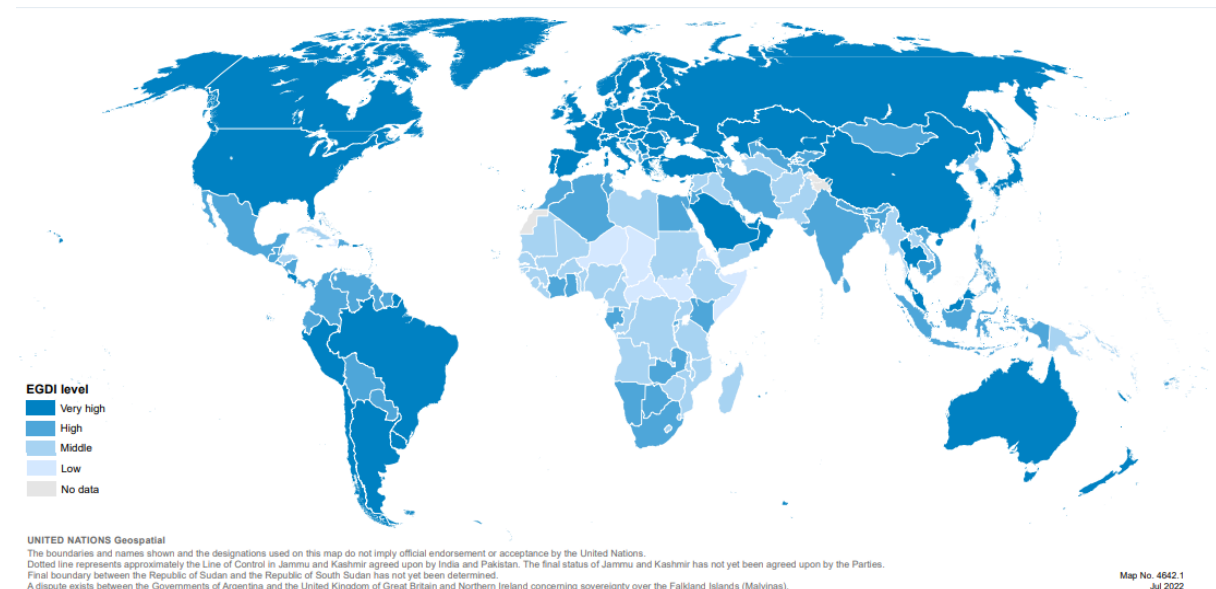
Past Approaches to E-government to Current Digital Governance Practice

As it is addressed as the Computationalism and Connectionism above, the global attempt towards development of computing systems and e-government started around the 1980s. The early e-government programs lacked in-house abilities to inspect private sector offerings and the market was relatively smaller than needed to use as information for the initiated long-term digital legacy. The failure of IT procurement was also due to the soloed machinery of governments. Weak infrastructure and insufficient database underpinning the service made it difficult to link various units and policies, though some countries like Canada were able to avoid the trend. Problems of data protection and the need for integration of governmental systems were also followed to improve the quality of IT government practices.

In response to this, the United Kingdom GDS (Government Digital Service) was introduced in 2011, which was the earliest valid effort to create a governmental online service portal. The government of the United Kingdom successfully managed to transfer policy. Many other nations then made adaptations regarding DGU (Digital Governmental Units) within their central agencies to resolve IT failures. The USDS (United States Digital Service), the DTA (Australian Digital Transformation Agency), and the CDS (Canadian Digital Service) were created after. The newly developed digital governments started to go through design-thinking processes. The system is iteratively advanced via civilian uses and artificial intelligence and allows open-source solutions. As it uses algorithms to provide individualised systems to one user and another, it is user-centric and the decision is data-driven and reliable as long as the data in the database is reliable.

The current Digital Government framework consists of a strategy-making process, governmental decisions, infrastructure development, and other variations depending on the country's competency. Governments of Denmark, Finland, the Republic of Korea, the United States, the United Kingdom, Japan, Singapore, most of the European Union, and many other countries now handle Big Data in policy-making processes. Many developing countries like Kenya, Bangladesh, Nigeria, and Bhutan

are also trying to implement similar online governance structures in an effort to adapt to the shifting national tendencies.



2022 UN E-government Survey: Global and regional EGDI (E-Government Development Index) averages, country grouping by EGDI levels, and online services provision in selected sectors, 2020 and 2022

Government priorities in online service provision are mostly centred on health, education and social protection. There has been an increase in the number of nations who offer services to allow social protection such as maternity care, child subsidies, pensions, and housing and food allowances. The main merit of implementing E-government strategies is that populations who have traditionally been identified as vulnerable—people in poverty, with disabilities, old individuals, immigrants—can be benefitted from the system. This is because institutional and legal frameworks are strengthened following the development of digital government. Legislation on cyber security, personal data protection, national data policy, open government data and e-participation ensure that citizens are able to interact with public institutions through online platforms, obtain free access to public content and governmental information.

Challenges of Digital Governance

Digital Divide

The pandemic has exacerbated digital divides. It usually occurs in a form of the disparity in technology among nations whose socio economic status and global levels are jarred with. There are more than 3 billion people living in countries with low EGDI (E-Government Development Index)

value in comparison to the global average value. Most of these countries are concentrated in Africa and Asia, while also being fully aware that there are also the most digitally developed countries in Africa and Asia. Only 4 out of 54 countries in Africa have EDGI values above the global average. This means that a number of people are being deprived of the opportunity for meaningful engagement in the digital age. As citizens' lifestyle demonstrates the countries' ability to develop, it makes the quality of digitisation lower, and creates a gap between highly digitised countries and those countries from the way they communicate and economically trade. The gaps in digital development between nations are very likely to persist or further widen.

Moreover, digital divide can happen within one single country. A person's income can be a determinant of their availability to purchase smart devices where they can access information online. Since older people tend to encounter more difficulties when dealing with online services, there would be a gap between the ability to utilise the technology fully. Yet this type of digital divide is relatively less visible than between countries. Even high-income countries who have greatly improved internet speed, reliability and versatility with 5G wireless technology usually have around 5-20% of their population under the condition of lack of access to the mobile broadband network.

Cybersecurity, Cybercrime, Privacy

When one person is accessible to the internet, they are automatically sharing their personal information to websites, broadband network providers, and many interconnected sites. This fact alone makes the personal use of the internet hazardous. If a country gets into a complete state of e-government, all citizens would be required to give more detailed information about themselves and their digital activities are monitored by the government. The collection of information may include background information, financial records, and national security data. Nations have been collecting data before digital governance. However, as information gets more readily available to citizens and governmental data is opened to the public, the risk from cyber attack—malware, phishing attacks, ransomware, hacking—rises. Social media outlets such as Facebook require access to users' personal information in order to analyse the user preferences and provide personalised service advertising products. Although it may organise the platform to be more user-based, personal information can easily be leaked. Depending on the enterprises' proficiency in security awareness and information handling, data may not be secured to a satisfactory level. In particular, when customers use the services for domestic outlets that are more likely to ask for precise information like resident registration numbers or banking details, the information hacking may come as being extremely malicious and cause a great disorder in their online activities.

The possibilities of getting attacked can be minimised by strengthening the security system and

implementing measures. The main challenge is faced by Less Economically Developed Countries. Despite that low or middle-income countries are also keen to harness the potential of digital access and boost the economy, improvements in cybersecurity lag far behind. This becomes a fertile ground for cybercrime. Their cybersecurity protection is unable to handle the vast amount of data and protect civilians' privacy at a satisfactory level.

Possible solutions

International and National Assistance of Technology to reduce Inequalities

In order to reduce inequality between nations, developed countries can adopt targeted and systematic measures to assist low-income and lower-middle-income countries in particular circumstances. The government may implement a project to endorse stability and security of cyberspace in less economically developed countries. It provides a double-sided benefit to the developed nations who offer help and the supported nations. This is because these types of projects would contribute to the thriving of an open and peaceful digital society around the whole world by trusted technologies.

Since 2022, the government of the United Kingdom has persisted on funding for its largest overseas cyber capacity building projects. The 16 projects included helping law enforcement for better digital forensic capabilities, protection of citizens' private information, delivery of cybersecurity education, digital regulation for banking sector, prosecution of cyber criminals, and others. As no other developed nations have made similar efforts yet, enacting these strategies may help reduce the digital divide between countries.

It is also imperative to ensure affordability of devices that can cope with evolving digital trends over a relatively long timeframe. If necessary, governments can subsidise digital devices such as laptops to provide them to vulnerable groups; for instance, during the COVID-19 pandemic, youth could receive devices for online education. However, the shelf life of many devices can be relatively short due to wear and tear and technology obsolescence. In the mid to long term, these households may not be able to afford replacements for the digital devices they were given. Strategic long-term planning is essential to look at the costs of both devices and broadband connectivity to ensure continued meaningful digital access.

Civil Education on 'How to remain Cybersecure'

Governments have to act to shore up their cyber defences, so as to make their systems and institutions more resilient and firm. Not only should the major departments protect their overall administration of cyberspace for governance, but they also need to be able to educate their population on how to remain cybersecure. Cyber threats often come as individual threats. Individual citizens must be able to keep their information and privacy safe from other sources hacking into their account. The government can advertise the dangers civilians might face through public media and enforce educational courses to teach students about the information.

Major parties involved

The Kingdom of Denmark

Denmark has made the world's best digitalisation of the public sector. There is a joined-up national digital service infrastructure which enables public authorities who are at government levels to deliver the best possible public services. The Danish Agency for Digital Government provides access to civilians with strategies public authorities take, systems of digital service infrastructures, legislation, international cooperation, and other information on digital governance. This would ensure authorised activities are publicly shared. The public sector acknowledges that artificial intelligence offers opportunities for growth and prosperity, and uptakes new technologies in a way to flourish the lives of citizens.

Republic of Finland

Finland is the second leading country with particular strengths in digital skills and digital public services. According to the Global Competitiveness Report, Finland has one of the most digitally oriented populations, as ICT specialists' roles play a major facet in workplaces. This is primarily because of the satisfactory education system and high levels of basic understanding towards digital techniques. Overall, the Finnish government seeks to assemble digital innovations into the platform economy and spearhead the industry sector. The Digital Finland Framework also provides a framework for companies to create digital innovation in both the workplace and products.

The Republic of Korea

The Korean Government has openly declared its willingness to foster digital transformation and the use of artificial intelligence. In January 2022, the Ministry of Science and ICT held a pan-governmental Digital New Deal Conference and announced the Digital New Deal Action Plan. The Republic of Korea created the '*Untact Policy*', in which they minimised human interaction and contact with the spread of Covid-19. This especially spurred unmanned stores, machine replacement of human labour, and other digitalisation in fields that involved human activities and interaction. The government launched this policy under the objectives of 'economic growth'. However, this has received a lot of critiques from international experts especially of the Republic of Korea's lowest employment rate.

People's Republic of China

Along with the largest population, China has the highest number of people who use the internet on a daily basis. '*Smart Cities*' are particularly expanding throughout the country. More than half of the 1000 smart cities worldwide are located in China. However, the 74% rate of internet penetration is not high compared to countries in the similar range of income or GDP Index. As the media is partially banned under the Chinese government, citizens do not have access to all websites and information online. Therefore, there have been an increasing number of *digital doubters* within the Chinese community. They oppose the adoption of new digital technologies, not being convinced by efficiency, security, or convenience due to a lack of trust in their government

The United States of America

The United States has long enabled the transformation of workplace to mobile workplace where citizens can easily access high-quality information on digital government. In 2012, the government launched the Digital Government Strategy with *Notification and Federal Employee Antidiscrimination Act* to notify employees and applicants for employment-related information and training about their rights against discrimination and whistleblower laws. The government prioritises customer-facing services and tries to improve customer sophistication on service delivery. As a result, its major agency websites are designed as user-friendly and effective to website visitors.

The United Kingdom

The United Kingdom has the most internet penetration rate of 98.19%, meaning that more than 98 percent of the population uses the internet. Starting out its digital government plan in the 1980s, the United Kingdom has the longest history of successful enactment of digital government units. The government formed the DAP (*Digital Access Programme*) to build a more secure, affordable and inclusive digital economy for all citizens. It promotes digital ecosystems to stimulate innovation and create local skilled workforces. The *Foreign Commonwealth and Development Office* also implemented projects to enhance cyber capability and reduce harm in five other countries—Brazil, Kenya, Nigeria, South Africa and Indonesia. This helped these countries improve the overall quality of their digitised legislation and governmental system.

The United Arab Emirates

The digital government strategy is well constructed in the United Arab Emirates. The government set the United Arab Emirates Digital Government Strategy 2025 which aims to create a broad cross-sectoral government commitment and embed digital aspects into government strategies. It is drafted to leverage the OECD Digital Government Policy Framework, adjusted to accommodate the post pandemic era. The changes are not yet noticeable but the government seeks to meet the objectives in strategies, as well as fostering development in the economy.

State of Japan

The State of Japan, as one of the economically developed countries, has a wide range of internet users throughout the country. However, Japan's conservative cultural aspect influences the advancement of digital technologies not as rapidly as it is in its neighbouring countries like the Republic of Korea. The Japanese government's primary initiative with its multi-stakeholder system is to create a 'trusted web' because the internet makes users' go through a deep decision-making-process to trust a source. Therefore, their digital mechanism would expand the verifiable portion of websites and information sites. This will ensure transactions between parties are verified without a great bargain of surveillance-minded states.

The Socialist Republic of Vietnam

Vietnam is a rapidly growing nation. In June 2021, The Prime Minister administered his decision to ratify the E-government strategy of 2021 to 2025 period, for the first time. The government works

towards making a development strategy that can be in line with the global trend. Vietnam also interacted with the Republic of Korea at the Korea-Vietnam Digital Transformation Forum, in 2022. The ministries of the Republic of Korea shared the ways to activate business platforms into digital platforms. As interconnections with other countries are continuously yielded, a positive growth within the Vietnamese community and the government will be seen further.

The Republic of Kenya

Kenya has been considered less economically developed countries but its economic growth is now in the phase of economic recovery after the pandemic. Kenya also started to digitalise some governmental units. In 2021, the government of the United Kingdom assisted the government particularly to protect the country with the implementation of digital strategies. The government of Kenya and the DAP (Digital Access Programme) Tech Hub launched the Business Regulatory Tool-Kit which enhanced local digital entrepreneurs' access to clear and user-centric information.

Timeline Of Events

Date	Description of event
1956	Allen Newell, Cliff Shaw, and Herber Simon's "Logic Theorist" Logic Theorist was an IPL program designed to mimic the problem-solving skills of a human. It was funded by the RAND (<i>Research and Development</i>) Corporation. This is known as the first computing program that deliberately performed automated thinking.
July 1956	John McCarthy and Marvin Minsky, "Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI)" Also known as the Dartmouth Workshop, it was the founding event of the first appearance of the "artificial intelligence" phase as a field of study.
1965	Moore's Law Moore's Law is an observation that the number of transistors on a microchip and in an integrated circuit would double approximately every two years. This is a theory suggested in 1965, by Gordon Moore, which still reflects the present. Although this law holds a limit that the statistics

	cannot show perpetual rise in the graph it is still valid, but in a slowly diminishing manner. It is important to consider when advancements in technology are still seemingly unstoppable.
1980	Edward Feigenbaum, artificial intelligence “Expert Systems” Computer Scientist Edward Feigenbaum made the expert system. An expert system is a computer program that utilises artificial intelligence technologies to emulate decision making processes through a rules engine.
1982-1990s	Japan’s Fifth Generation Computer Project Japan’s MITI (Ministry of International Trade and Industry) began a 10-year initiative to create fifth generation computers that employ artificial intelligence technology to interpret human language, graphs, photos and letters.
April 1997	First publicly available speech recognition software developed by Dragon Systems Dragon System introduced the first speech recognition software which was called ‘Dragon NaturallySpeaking’. The speech-to-text functionality was revolutionary although the quality is not very sophisticated. The software has been developed since first created.
May 1997	IBM Deep Blue IBM Deep Blue was a chess-playing system in the IBM supercomputer. This was the first and the start of an artificial intelligence construct to win against human champions.
2015-2016	AlphaGo Computer Program developed by DeepMind which plays the game ‘Go’. Unlike previous chess matches Go has to play with a number of probabilities, and therefore took a long procedure of deep learning. With one defeat from Korean Go Player, “Lee Sedol”, AlphaGo played a wonderful game.
November 2020	Open AI, ChatGPT Chat GPT is by far the most impactful invention of Artificial Intelligence construct. Standing for Chat Generative Pre-trained Transformer, ChatGPT is a language model and is capable of generating human-like text based on

	context and text conversation. This encompasses all artificial intelligence to date, being able to have a basic conversation, translate, read code or generate information.
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UN Involvement, Resolutions, Treaties, and Events

Digital Government Act(No.24 of 2022)

- Right to access information (articles 3 (2-f,l), 8(e), 9)
- Active transparency (articles 15(d.g) 12, 13)
- Public participation (articles 3 (2-c))
- Participation in plans, programmes and policies (article 7)

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