

2802 - DTI

Unit 06

Ethical Social and Legal Environment for Information System

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- 6.2 Data Protection Regulations and Standards of Sri Lanka
- 6.3 Ethical Use of Information
- 6.4 Sustainability and Green Computing Practices

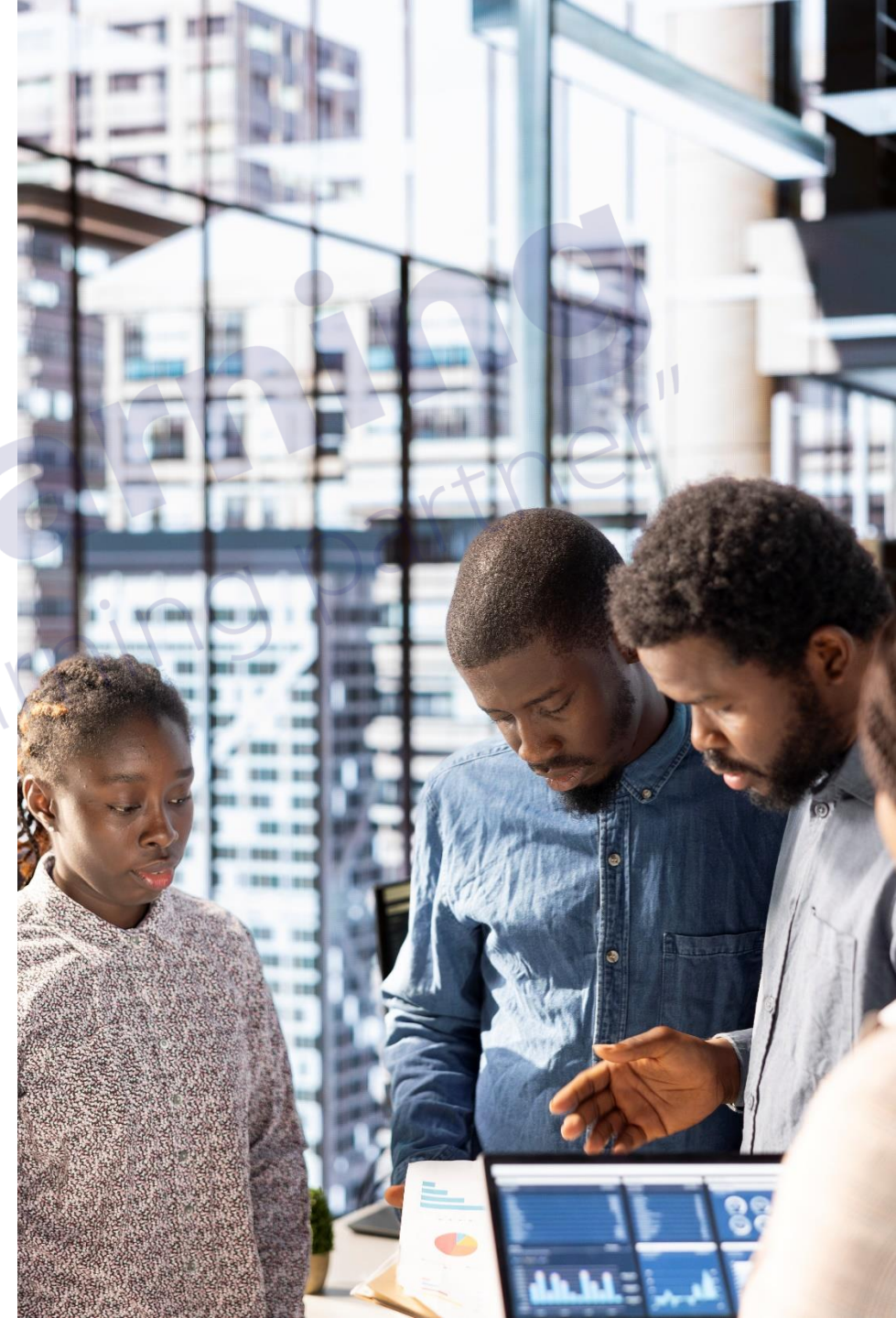




6.1 Social Implications of Information Systems

6.1 Social Implications of IS

- The impact of Information Systems runs deep, **shaping the way we live, work, and connect** with one another.
- While **IS fuels innovation and progress**, it also brings challenges like **privacy issues, changes in cultural norms, and widening social inequalities**.
- To ensure IS benefits society as a whole, it's essential to address these challenges with care and responsibility.



6.1.1 Social Networks and Social Media

- In the last several years, technology has brought us very far from where we started.
- Social media and social networking have been instrumental in many major events around the world.
- It is reasonable to say that **social networking is a subcategory of social media.**
- Many people think that social media and social networking are the same and therefore can be used interchangeably.



Social Media

- Social media is the **content that people upload**, whether that's a **blog, video, slideshow, podcast, newsletter or an eBook**.
- Consider social media as a **one-to-many communication** method.
- Although people can respond and comment, the **ownership remains with the publisher of the content**.
- It helps **individuals and organizations promote ideas, products, and services**.
- Social media content can be **accessed anytime and from anywhere with internet access**.
- It supports different formats such as **text, images, audio, and video**.



Social Networks

- **Social networking is the use of online platforms and websites to connect with people, share information, and build relationships.**
- It enables individuals and organizations to interact, communicate, and collaborate in real-time.
- **Popular social networking platforms are Facebook, Instagram, Twitter (X), LinkedIn, YouTube, TikTok and Snapchat.**
- Facebook and Twitter (X) also provide with numerous opportunities to connect with prospective audience through **web links, posts, news stories, notes, photo sharing, blog posts, direct messages, questions and comments.**



Social Networks

Key Features of Social Networking:

- **User Profiles** - Create personal or business profiles.
- **Connections & Friends** - Connect with people and expand networks.
- **Content Sharing** - Share text, images, videos, and links.
- **Messaging & Communication** - Direct messages, group chats, and video calls.
- **News Feeds & Timelines** - Updates from friends, pages, and followed accounts.
- **Groups & Communities** - Join discussions based on interests or industries.



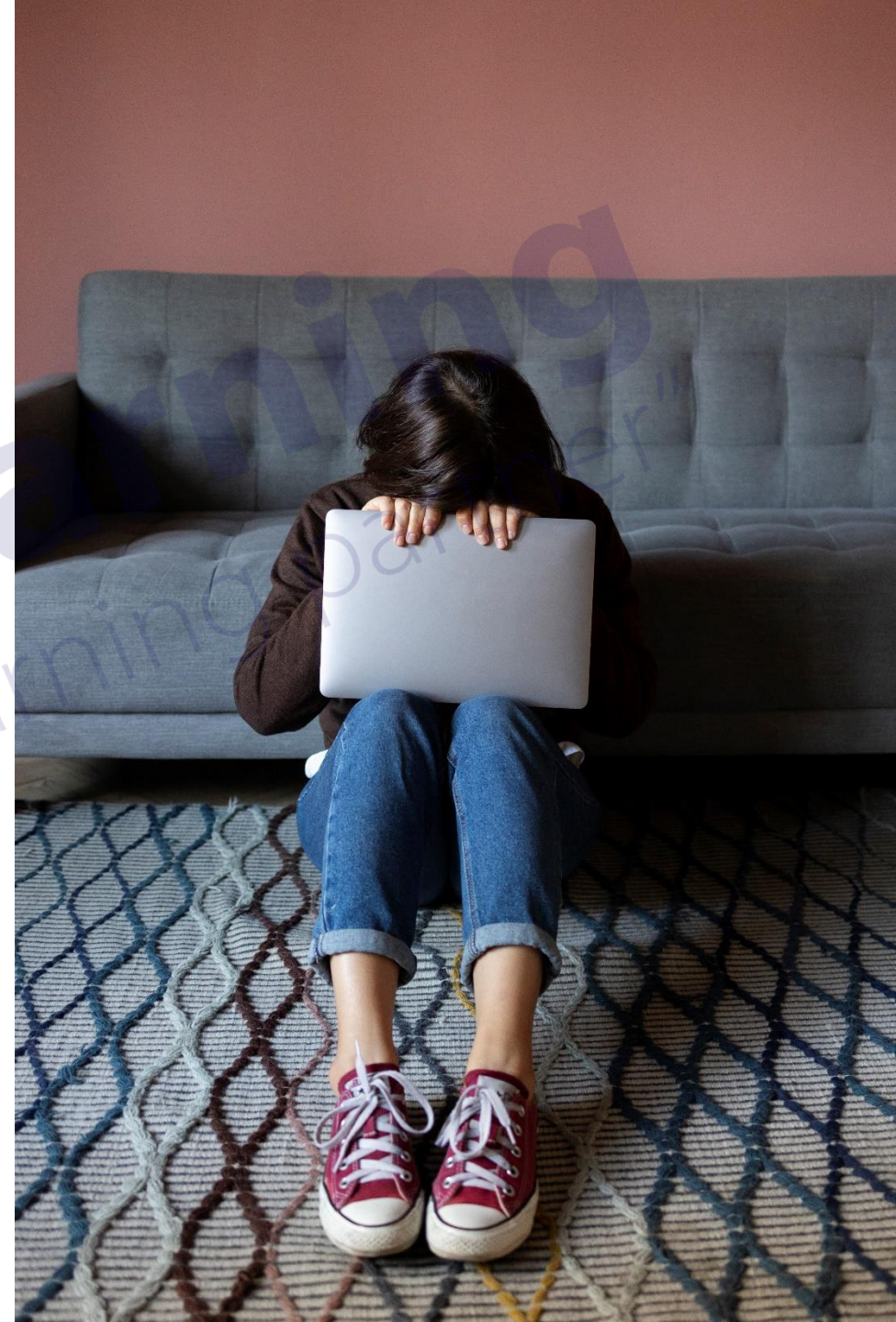
6.1.2 Impact on Individual Behavior

- **Social media and social networking are growing rapidly and constantly evolving with increasing users, platforms, and tools.**
- They enable individuals, families, and social groups to **connect and collaborate easily across geographical boundaries.**
- They **help people stay connected by sharing stories, photos, and communicating through apps and messaging.**
- Overuse **can create dependency**, making it difficult to disconnect from social platforms, **leading to stress and burnout.**
- Younger people may experience **reduced attention spans and difficulty focusing due to heavy digital engagement.**
- It is important to balance the benefits and challenges of information systems for healthy and effective use.



Impact 01 – Cyber Bullying

- Which is sometimes **referred to as online social cruelty or electronic bullying.**
- Definition:
 - Has been defined **as an aggressive, intentional act**
 - Carried out by a **group or individual**
 - Using **electronic forms of contact,**
 - **Repeatedly and over time** against a victim who **cannot easily defend him or herself.**
- Since anyone can create a fake account and do anything without being traced, it has become quite easy for anyone to bully on the Internet.
- Harassment messages: A person repeatedly receives insulting, threatening, or offensive messages through social media or chat apps.
- Spreading rumors: Someone posts or shares false information about a person online to damage their



Impact 02 – Privacy Concerns

- **Privacy is the right of a person to keep their personal information and activities confidential and to control who can access or share them.**
- Data driven reviews, feedback, and recommendations empower users to make informed choices, whether it's selecting a product, a service, or a solution.
- On the other hand, **businesses collect vast amounts of personal data, such as browsing habits and location information.**
- Many individuals find such **practices interfering and worry about data misuse, hacking, or unauthorized access.**
- To address these concerns, **businesses must prioritize transparency in how they use data, earn user trust, and invest in robust security measures to safeguard sensitive information.**



Impact 03 - Hacking

- **Process of identifying the weaknesses of a system or loopholes in a network and private details are accessed.**
- This process commonly results in the **breaching of one's privacy and confidential information.**
- Therefore, hacking is also known as **unauthorized intrusion.**
- Personal data and privacy can easily be hacked and shared on the Internet.
- **They can make financial losses and loss to personal life.**
- Similarly, identity theft is another issue that can give financial losses to anyone by hacking their personal accounts.



Impact 04 – Behavioral Changes

- Social media **greatly influence** how people interact with **content, communicate, and engage with services.**
- Moreover, information systems are reshaping social norms and habits.
- For instance, the **constant exposure to curated content and personalized ads can create echo chambers, limiting people's perspectives.**
- People interact more with digital content (liking, sharing, commenting, and scrolling frequently). Users develop habits based on **personalized recommendations and targeted advertisements.**
- Individuals tend to spend more time on **platforms that match their interests.**



Impact 05 - Addiction

- **Addiction is a condition in which a person becomes dependent on a substance, activity, or behavior and feels unable to stop, even when it has negative effects on their life.**
- The addictive part of the social media is very bad and can disturb personal lives as well.
- The teenagers are the most affected by the addiction of the social media.
- They get involved very extensively and are eventually cut off from the society.
- It can also waste individual time that could have been utilized by productive tasks and activities.



6.1.3 Impact on Organizations

- Social media platforms are used by billions of people worldwide, creating a major opportunity for organizations to promote their products and services and connect with target audiences effectively.
- Social media helps businesses maintain and strengthen engagement with customers and potential customers.



Impact 01 - Data Driven Decision Making

- Organizations depend heavily on information systems to analyze data and automate processes, transforming how decisions are made.
- Instead of relying on intuition or past experiences, decisions are now driven by accurate, real time data insights.
- This shift improves efficiency and accuracy and helps organizations stay competitive in a fast changing market.



Impact 02 – Collaboration and Communication

- Information systems make it much easier for people to work together, regardless of where they are.
- Tools like email, video conferencing, and shared platforms allow teams to communicate, share files, and collaborate on projects in real time.
- Employees can join virtual meetings from different locations or work together on shared documents online.
- This boosts productivity and allows businesses to operate smoothly even when teams are globally distributed.



Impact 03 – Changes in Hierarchies

- Information systems make it easier for everyone in a company to access important data, no matter their role.
- Employees at all levels can use dashboards, reports, and shared databases instead of relying only on managers for information.
- This increases participation in decision making and gives employees more responsibility and ownership of their work.
- It also allows faster decision making.
- It can lead to changes in job roles and workflows, creating both challenges and opportunities for employees to develop technical skills and contribute more effectively.



Impact 04 – Ethical and Security Challenges

- Organizations must encourage the responsible use of information systems to ensure technology is used ethically and effectively.
- Employees should be trained on best practices such as protecting passwords, avoiding unauthorized access, and respecting data privacy.
- Responsible use reduces the risk of data breaches and misuse.
- Strong security measures such as encryption, firewalls, and regular updates are important to protect sensitive data from cyberattacks.
- Organizations should also implement clear policies for data collection, storage, and sharing while ensuring compliance with privacy laws and regulations.



6.1.4 Impact on Societal Norms

Societal norms are the shared rules, expectations, and behaviors that a society considers acceptable and appropriate for how people should act in different situations.

Shift in Communication Norms

- The rise of social media, messaging apps, and online platforms has shifted communication from face-to-face interactions to digital communication.
- People now connect instantly across geographical barriers for personal, professional, and civic activities.
- It has changed how relationships are maintained, how experiences are shared, and how discussions and community activities take place online.
- While communication has become faster and more convenient, it has also reduced in-person socialization and increased issues like misinformation and digital inequality.



6.1.4 Impact on Societal Norms

Ethical Challenges

- **Misinformation:** False information spreads quickly and can shape opinions, spread rumors, or create chaos during emergencies.
- **Cyberbullying** - The internet's anonymity allows people to harass or intimidate others without immediate consequences, affecting emotional and mental health, especially among teenagers.
- **Privacy** - Companies collect personal data and use it for profit, raising concerns about user control, surveillance, and data misuse.
- **Loss of reputation** - False stories spread on social media can damage the reputation of individuals and businesses



6.1.4 Impact on Societal Norms

Consumer Expectations

As technology advances, society expects services to be fast, efficient, and personalized.

People want instant access to services such as online shopping, support, and information.

Personalization is important, with users expecting tailored recommendations, ads, and experiences.

Convenience is a key priority, including easy access to information, smooth online transactions, and quick customer support responses.



6.1.5 Impact from Employment

1. Job Automation and Displacement

Automation powered by information systems is replacing repetitive and manual jobs with machines and software, especially in manufacturing, administration, and monitoring.

It improves efficiency and productivity while introducing technologies like robots and automated software systems.

Although it creates new skilled job roles, it also leads to job losses in traditional roles.

Workers need retraining and upskilling to adapt to new employment opportunities.



6.1.5 Impact from Employment

2. Rise of Gig Economy

- The growth of gig economy platforms like Uber, PickMe, Upwork, Fiverr, and others has created short-term and freelance job opportunities.
- It offers flexibility, allowing workers to choose when, where, and how much they work.
- However, gig workers often lack benefits such as health insurance, retirement plans, and paid leave.
- They are usually classified as independent contractors, meaning less job security and fewer protections compared to full-time employees.



6.1.5 Impact from Employment

3. Skill Demands

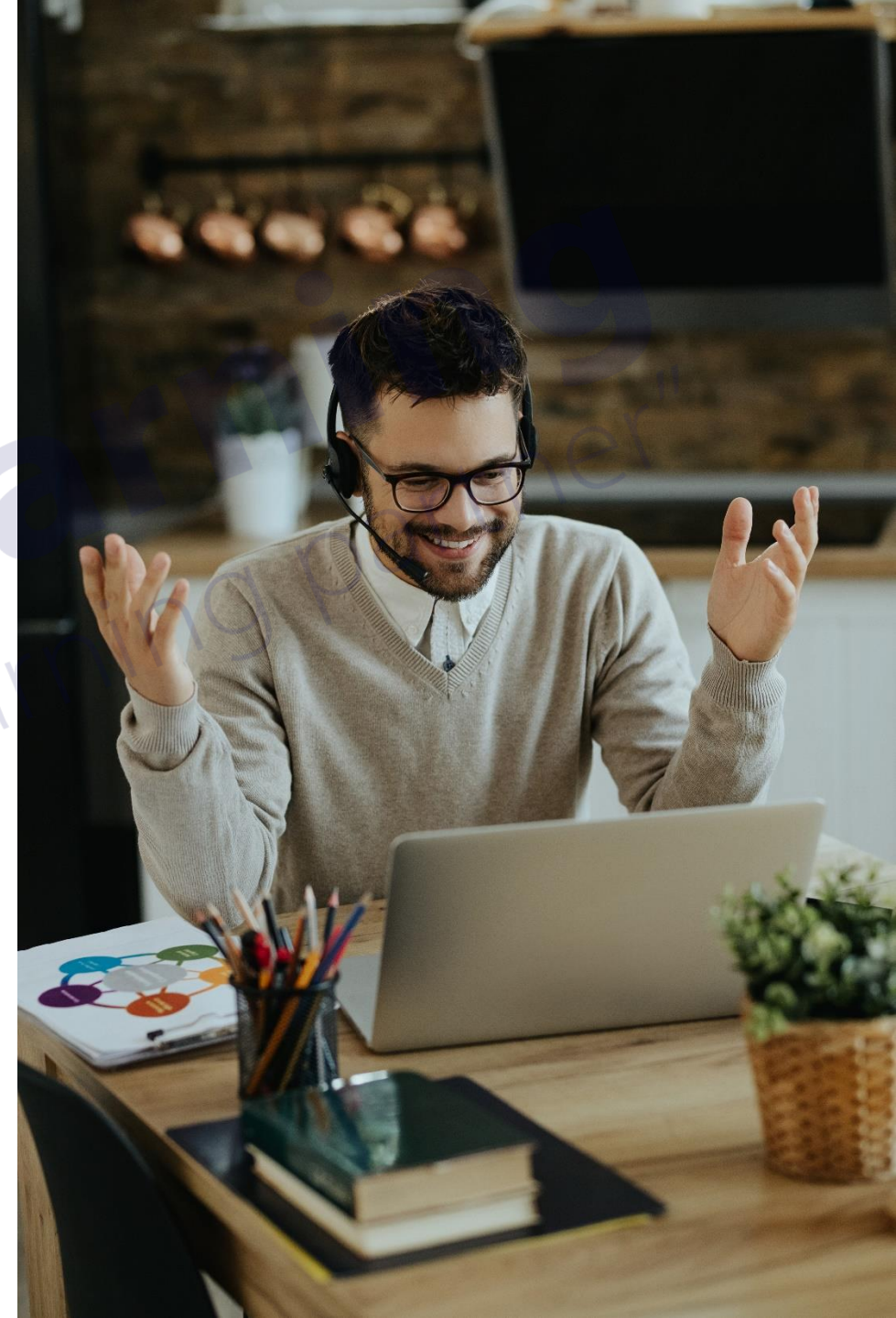
- Information systems have changed workplace requirements by increasing the need for digital and technical skills.
- Employees are expected to continuously upgrade their skills to keep up with technological changes.
- This creates both opportunities for career growth and challenges for workers who lack digital literacy.



6.1.5 Impact from Employment

4. Remote Work

- Information systems have enabled employees to work from anywhere, removing the need to be physically present in an office.
- It allows organizations to access global talent and supports better work-life balance for employees.
- However, remote work can reduce team interaction and make collaboration, creativity, and employee engagement more difficult.



6.1.6 Digital Divide

- Information systems create disparities between people who have access to technology and those who do not, leading to inequalities in education, healthcare, and economic opportunities.
- Underprivileged communities without reliable access to information systems often struggle to compete in a digital-first world.
- In education, students without access to digital tools face disadvantages in online learning compared to those with access to technology.
- In healthcare, limited access to information systems reduces the ability to use telemedicine, health apps, and digital health records.
- In employment, lack of digital skills or access to online job platforms and networking tools can limit job opportunities.



6.2 Data Protection Regulations and Standards of Sri Lanka

- Data protection laws and regulations are used to protect people's privacy and secure personal information in the digital world.
- They help prevent unauthorized access, data misuse, and data breaches such as identity theft and fraud.
- These rules build trust between users and organizations, encouraging safe use of digital services.
- They also ensure data is handled ethically and properly.
- In addition, they align local practices with global standards, supporting international trade and economic growth.

Personal Data Protection Act No. 9 of 2022

INTRODUCTION

- The Personal Data Protection Act No. 9 of 2022 of Sri Lanka is a comprehensive legal framework that regulates how personal data is collected, processed, and stored.
- It ensures the protection of individuals' privacy and aligns with international data protection standards.
- The act promotes transparency, accountability, and ethical data handling by organizations managing personal data.

PURPOSE AND SCOPE

- Protect individuals' personal data from misuse and unauthorized access.
- Ensure data is processed transparently and only for legitimate purposes.
- Promote trust in digital services by creating a secure data environment.
- Encourage compliance with international data protection standards to support global business interactions.



Personal Data Protection Act No. 9 of 2022

Key Provisions:

- **Applicability:** Applies to both public and private organizations in Sri Lanka, including foreign entities processing data of Sri Lankan citizens.
- **Rights of Data Subjects:** Individuals can access, correct, object to processing, and request deletion of their personal data under certain conditions.
- **Data Controllers and Processors:** Organizations must appoint Data Protection Officers (DPOs) and ensure compliance with the law.
- **Data Retention & Purpose:** Data must only be used for specific, legitimate purposes and retained only as long as necessary.



Personal Data Protection Act No. 9 of 2022

Key Provisions:

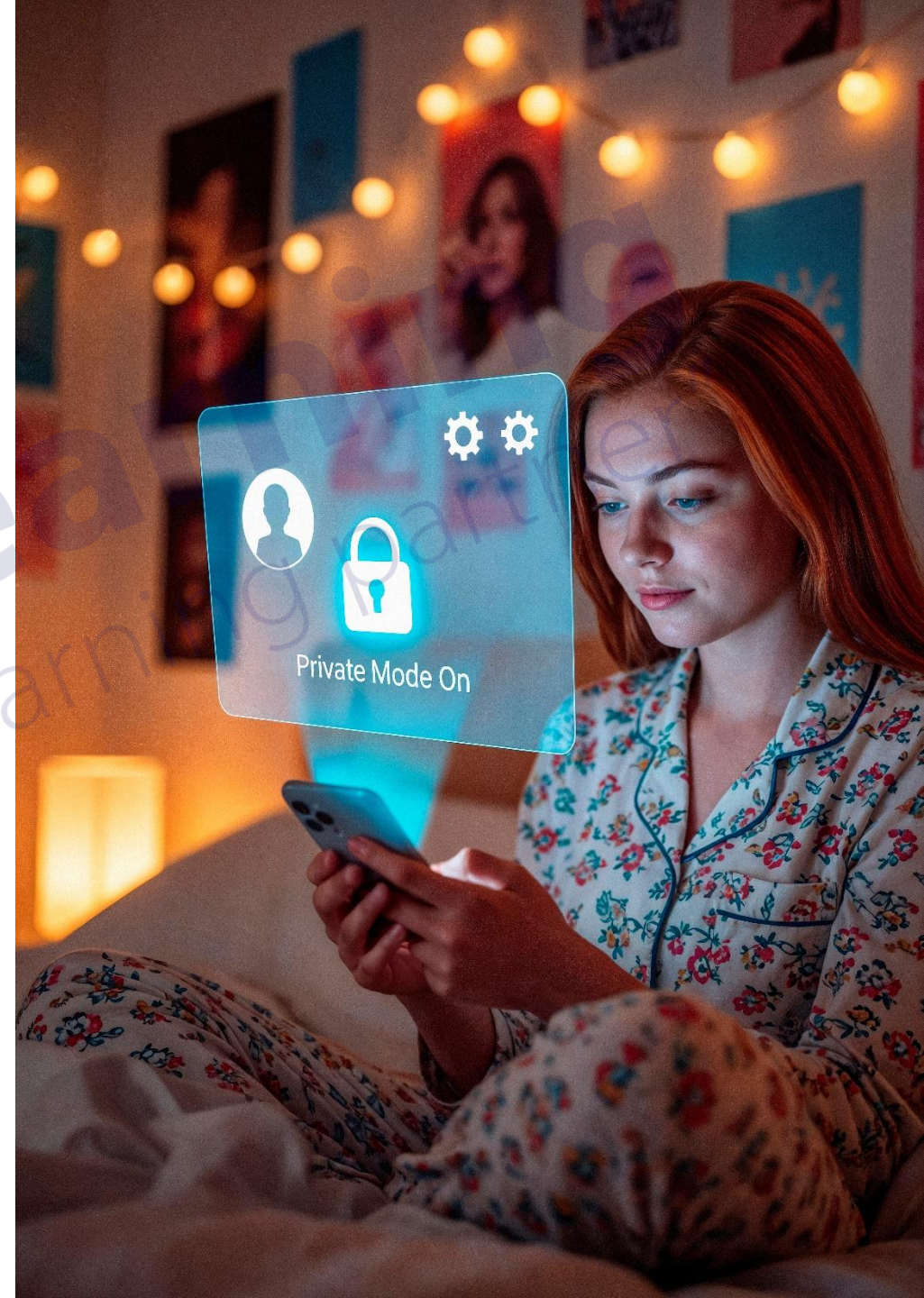
- **Consent:** Explicit consent is required for processing sensitive data, and individuals must be informed clearly.
- **Data Security and Breach Management:** Organizations must protect data with security measures and report breaches promptly.
- **Cross-Border Data Transfers:** Transfers outside Sri Lanka are restricted and must ensure adequate protection standards.
- **Penalties and Enforcement:** Non-compliance can lead to fines, legal action, and enforcement by a regulatory authority.



Online Safety Act No. 9 of 2024

Introduction

- The Online Safety Act No. 9 of 2024 is a law enacted by the Sri Lankan Parliament to regulate online content and improve digital safety.
- It establishes the Online Safety Commission, a five-member body appointed by the President, to oversee and enforce the Act.
- The Act focuses on ensuring a safer digital environment for all users in Sri Lanka.



Online Safety Act No. 9 of 2024

Purpose and Scope

- Protect individuals from harm caused by online communication.
- Prevent misuse of online accounts and inauthentic accounts for harmful activities.
- Promote a safer and more responsible digital environment.
- Ensure accountability and proper regulation of online platforms and content.
- Applicable to online activities within Sri Lanka and content affecting Sri Lankan users.



Online Safety Act No. 9 of 2024

Key Provisions

- **Prohibited Statements:** Prevents the use of online accounts to spread harmful or offensive content, including cyberbullying, hate speech, and misinformation.
- **Identification of Online Locations:** Provides mechanisms to detect and declare online platforms or accounts used for prohibited activities.
- **Protection from Online Harm:** Aims to protect individuals from psychological, social, and reputational harm caused by online content.
- **Prevention of Misuse of Platforms:** Stops the use of fake or inauthentic accounts for spreading harmful content.



Online Safety Act No. 9 of 2024

Key Provisions

- **Accountability of Online Content:** Ensures monitoring of online platforms and holding them responsible for harmful activities.
- **Fostering Safe Digital Practices:** Encourages responsible use of social media and online platforms.
- **Enforcement and Oversight:** Establishes the Online Safety Commission to monitor, regulate, and enforce the Act, including penalizing violations.



Acts and Regulations

No	Act/ Regulation	Description
01	Computer Crimes Act No. 24 of 2007	• Provides a legal framework for identifying and penalizing computer-related offenses. • Strengthens cybersecurity by preventing malicious digital activities. • Establishes accountability for cybercrimes.
02	Electronic Transactions Act No. 19 of 2006 (Amended in 2017) & National Payment Systems Act	• Facilitates secure electronic communications and online transactions. • Supports the growth of e-commerce and digital services. • Enhances trust in digital payments and transactions. • Promotes economic growth in digital and online industries.
03	Right to Information (RTI) Act No. 12 of 2016	• Promotes transparency and accountability in public institutions. • Grants citizens the right to access government information. • Empowers citizens to participate in governance. • Encourages responsible use of information in public administration.

Acts and Regulations

No	Act/ Regulation	Description
04	Intellectual Property Act No. 36 of 2003	• Protects intellectual property rights in the digital era. • Safeguards the rights of creators and innovators. • Encourages innovation and creativity. • Prevents unauthorized use of protected digital content.
05	Telecommunications Act No. 27 of 1996	• Regulates telecommunications services and internet service providers (ISPs). • Ensures proper and responsible delivery of digital communication services. • Maintains standards for telecom operations in the country. • Supports reliable and regulated communication infrastructure.

International Standards Adopted in Sri Lanka

- **ISO/IEC 27001:** Focuses on Information Security Management Systems (ISMS) to protect and manage sensitive data securely.
- **GDPR Compliance (General Data Protection Regulation):** Requires organizations handling data of European Union (EU) citizens to follow strict data protection rules.
- **PCI DSS (Payment Card Industry Data Security Standard):** Ensures secure handling of credit and debit card information to prevent fraud and data breaches.

What is GDPR?

- The General Data Protection Regulation (GDPR) is a data protection law introduced by the European Union in May 2018.
- It sets rules on how personal data of EU citizens must be collected, processed, stored, and shared.
- It applies to any organization, even outside the EU, if they handle data of EU citizens.



6.2.1 Implications on Organizations

Increased Accountability:

- Companies must strictly follow data protection, cybersecurity, and digital transaction laws.
- The Personal Data Protection Act requires transparency in how data is collected, stored, and used.

Implementation of Security Measures:

- Laws such as the Computer Crimes Act and Electronic Transactions Act require organizations to adopt strong cybersecurity systems to prevent data breaches and cyberattacks.
- Compliance with standards like ISO/IEC 27001 is important to ensure secure operations and build trust.



6.2.1 Implications on Organizations

Operational Changes:

Organizations must invest in employee training, system upgrades, and new technologies to meet regulatory requirements.

Financial institutions must comply with the National Payment Systems Act for secure digital transactions.

Penalties and Legal Risks:

Non-compliance can lead to fines, reputational damage, and legal action under acts such as the Online Safety Act and Personal Data Protection Act.

Global Collaboration:

Companies involved in international business must align with local laws and global standards like GDPR to maintain partnerships and avoid cross-border legal conflicts.



6.2.1 Implications on Individual

Enhanced Privacy Protections:

Individuals have greater control over their personal data and can access it, while organizations are held accountable for misuse or breaches.

Freedom of Information:

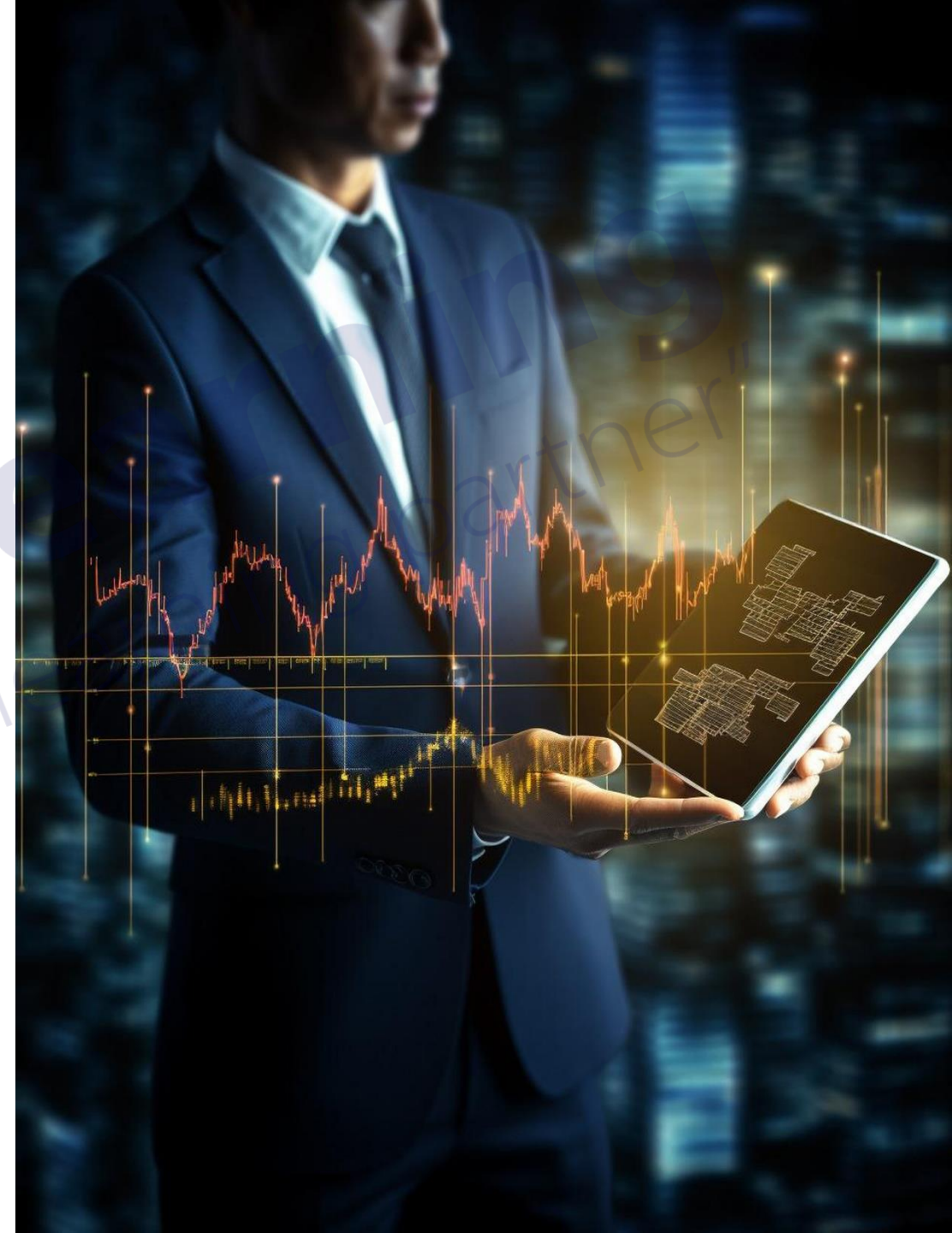
Citizens can access public information, promoting transparency and accountability in government.

Digital Safety:

Individuals are protected from online threats such as cyberbullying, hate speech, and misinformation.

Secure Transactions: People can safely use e-commerce and digital payment systems with better data protection.

Employment and Digital Rights: Individuals are protected in workplaces using digital systems but must also adapt to new technologies to remain employable.



A conceptual image featuring a handshake between two people in business suits. Overlaid on the handshake is a glowing blue digital network of interconnected lines and nodes, symbolizing technology, data, and digital communication. The background is a blurred city skyline at night with lights from buildings.

6.3 Ethical use of Information?

6.3.1 Ethical Issues Related to the Use of Information Systems

1. Privacy Concerns

Information systems collect and store personal and sensitive data such as health, financial, and online activity.

Unauthorized access, surveillance, or misuse of data can violate privacy.

Examples include tracking users without consent, collecting excessive data, and selling data to third parties.

2. Data Security

Dependence on information systems increases risks like data breaches, hacking, and cyberattacks.

Weak security can lead to unauthorized access, identity theft, and financial loss.

Example: Failure to encrypt data or protect systems properly



6.3.1 Ethical Issues Related to the Use of Information Systems

3. Intellectual Property Rights

Information systems make it easy to share and copy digital content.

This leads to misuse such as piracy and copyright violations.

Examples include illegal distribution of media, software piracy, and unauthorized use of content.

These actions harm creators by denying them credit and income.



6.3.2 Solutions to ethical issues in IS

- **Data Minimization:** Collect only necessary data and ensure clear user consent.
- **Advanced Security Measures:** Use encryption, firewalls, and secure access controls.
- **Regular Audits:** Conduct frequent security checks to identify risks.
- **Employee Training:** Educate staff on cybersecurity practices.
- **Incident Response Plan:** Prepare procedures to handle data breaches quickly.
- **Licensing & Digital Rights Management:** Protect content from unauthorized use.
- **Common Licenses:** Use licenses like GPL and Creative Commons to ensure proper usage and credit.



6.3.2 Solutions to ethical issues in IS

- **Bias and Discrimination:** Use diverse datasets and regularly audit AI systems.
- **Transparency:** Apply Explainable AI (XAI) to make decisions understandable.
- **Autonomy and Accountability:** Define responsibility for AI decisions and outcomes.
- **Job Displacement:** Provide reskilling programs and support new job creation.
- **Manipulation and Misinformation:** Detect fake content and educate users about risks.



A vibrant green plant with several large, glossy leaves is growing inside a transparent glass sphere. The sphere is set against a dark, blurred background filled with out-of-focus bokeh lights in shades of teal, blue, and orange. The overall scene conveys a sense of nature thriving within a controlled, possibly technological, environment.

6.4 Sustainability and Green Computing Practices

Green computing refers to the practice of designing, using, and disposing of computers and IT systems in a way that minimizes their environmental impact.

It focuses on reducing energy consumption, electronic waste, and carbon emissions caused by technology use.

As organizations increasingly rely on information systems, their energy usage and environmental impact also grow.

This leads to higher electricity consumption, increased e-waste, and a larger carbon footprint.

Therefore, sustainability and green computing are important to ensure that IT operations are environmentally friendly and do not harm the environment.



6.4.1 Reasons for Increased power consumptions

1. Increasing Demand for Internet

More people rely on electronic data and internet-based communication.

Businesses are increasingly digitizing processes and applications. Legal requirements for data retention and disaster recovery are growing.

These factors have led to rapid growth in data centers.

2. Increasing Equipment Power Density

More servers are being installed with high-performance, power-hungry processors.

Servers now require more memory and computing capacity.

Smaller server designs (e.g., blade servers) increase packing density.

This leads to higher power usage per area in data centers.



6.4.2 Reducing Energy Consumption

- Data centers consume large amounts of electricity mainly for servers and cooling systems.
- With the growth of technologies like AI, ICT energy consumption is expected to increase by about 6% annually.
- To reduce energy use, organizations can adopt energy-efficient hardware and optimize server usage.
- Advanced cooling methods like liquid cooling and free cooling help reduce energy needed for temperature control.
- Cloud computing helps improve efficiency by sharing resources and reducing redundant infrastructure.



01 – Growing awareness about Impact of IT on Environment

- The IT industry contributes about 3.7% of global greenhouse gas emissions.
- A typical smartphone user has a carbon footprint of around 25 kg CO₂e, similar to levels in 2007 when smartphones were first introduced.
- Awareness of IT's environmental impact encourages businesses and individuals to adopt greener practices.
- Companies use energy-efficient technologies such as low-power servers, virtualization, and cloud computing to reduce energy waste.
- Data centers are optimized and renewable energy sources are increasingly used to lower environmental impact.



02 – Green Computing Design

- Green computer design focuses on reducing the environmental impact of computers by using eco-friendly technologies and materials while maintaining performance.
- Many manufacturers are producing computers using non-toxic materials that consume less electricity.
- These devices are designed to be easily upgradable, which extends their useful lifespan and reduces electronic waste.
- Companies like Dell and Apple are adopting long-term environmental strategies to produce greener products.
- Apple's custom silicon chips improve energy efficiency, offering better battery life and lower power consumption.
- Sony's Bravia TVs use advanced technology to reduce power usage while maintaining high display quality.



03 – Green Manufacturing for Minimizing Carbon Footprint

- Devices such as smartphones, computers, and tablets contribute a large portion of the ICT sector's carbon footprint.
- To reduce carbon emissions, companies can use renewable energy sources for IT operations.
- Energy-efficient devices and automated power management systems help lower energy consumption.
- Google aims to operate carbon-free by 2030 by using 100% renewable energy and improving data center efficiency.
- Microsoft plans to become carbon negative by 2030 by improving energy efficiency across its operations and products.
- HP aims to achieve net-zero carbon emissions across its operations and product lifecycle by 2040.



04 - Virtualization

- Virtualization is a key strategy used to reduce data center power consumption.
- It allows one physical server to host multiple virtual servers.
- This reduces the need for many physical servers by using fewer but more powerful machines.
- Virtualization improves hardware utilization and makes better use of computing power.
- It reduces data center floor space requirements.
- It significantly lowers energy consumption and overall electricity usage.
- Many enterprises use virtualization to reduce the high energy demands of data centers.



05 – Virtual Meetings and Remote Work

- Virtual meetings and remote work support green computing by reducing the environmental impact of traditional office work.
- Working from home reduces the need for daily commuting, lowering carbon emissions from vehicles and reducing traffic-related pollution.
- Remote work also decreases energy consumption in office buildings, including electricity used for lighting, heating, and cooling.
- Virtual meeting tools such as Zoom, Microsoft Teams, and Google Meet reduce the need for business travel.
- Overall, these practices help reduce fuel consumption, energy use, and greenhouse gas emissions.



06 – Paperless Work Environment

- A paperless office supports green computing by reducing the environmental impact of paper production and waste.
- Paper production consumes large amounts of energy, water, and chemicals for processing and bleaching.
- Going paperless reduces the need for printing, copying, and storing physical documents.
- It helps reduce paper waste, misprints, and unnecessary document duplication.
- This approach saves natural resources and reduces overall energy consumption.
- Tools such as DocuSign, Dropbox, OneDrive, and Google Drive help eliminate paper-based processes.



07 – Enabling Power Management Features

- Enabling power management features helps reduce energy consumption in computers.
- Computers can be set to automatically switch to energy-saving modes when they are idle.
- Managing power use across many PCs in an organization can be difficult for IT staff.
- Software tools such as “Surveyor” help control and monitor PC power usage at a network level.
- These tools can put computers into low-power modes like shutdown, hibernation, or standby when not in use.
- Monitors can also be set to enter sleep mode during inactivity.
- The software can measure and report the energy consumption of each PC and monitor.



6.4.3 MANAGING E-WASTE

The trend of frequent device upgrades, technological advancements driven by marketing and short product life cycles, contributes to more waste and higher production related emissions. Improper disposal of devices leads to e-waste, releasing harmful substances like **Boron**, **Barium**, **Lead** and **Mercury** into the environment that cannot withdraw from its' danger for many decades.



Sustainable practices like **Reduce, Reuse and Recycle (R3)** can decrease e-waste and extend the lifecycle of IT equipment.



REDUCE

Reduce means minimizing electronic waste by making smart purchasing and usage decisions. This includes buying only necessary devices, maintaining and repairing them to extend their lifespan, choosing durable and upgradeable products, and opting for energy-efficient technology.



- ✓ Buy only what you need
- ✓ Maintain and repair to extend life
- ✓ Choose durable, upgradeable products
- ✓ Opt for energy-efficient technology



REUSE

An old computer should continue to be used if it meets the user requirements. Otherwise, it can be given to someone who needs it or the functional components may be used from a retired product. By using the hardware for a longer period of time, the total environmental footprint caused by computer manufacturing and disposal will be reduced greatly.



RECYCLE

When computers cannot be reused, even after considering the prospects of refurbishing, they must be disposed properly in environmentally friendly ways. Old electronic systems should be recycled by taking component material and reprocessing it into the same material or breaking it down into constituent materials for reuse.



- Extract Components
- Reprocess Materials
- Reuse Materials



Dell incorporates recycled plastics and other sustainable materials into its devices, further reducing their overall environmental impact.



Made with recycled materials



HP's printers are built to optimize energy consumption using features like instant on technology and auto off mode.



Instant On Technology



Auto Off Mode

Enhancing CSR

- Corporate Social Responsibility (CSR) refers to a company's commitment to operate in an ethical manner while contributing to environmental protection, social wellbeing, and sustainable development.
- CSR reflects a company's dedication to ethical practices, environmental care, and societal wellbeing. In the context of climate change, reducing carbon footprints is an important part of CSR because businesses contribute significantly to greenhouse gas emissions.
- Frameworks like the **Greenhouse Gas Protocol** help organizations accurately calculate and disclose emissions.
- Companies adopt eco-friendly practices such as using sustainable packaging, reducing fossil fuel use, and improving energy
- Ex: Apple is an example of strong CSR, as it operates on 100% renewable energy



6.4.4 National Laws, Regulations and Standards on E-Waste Management in Sri Lanka

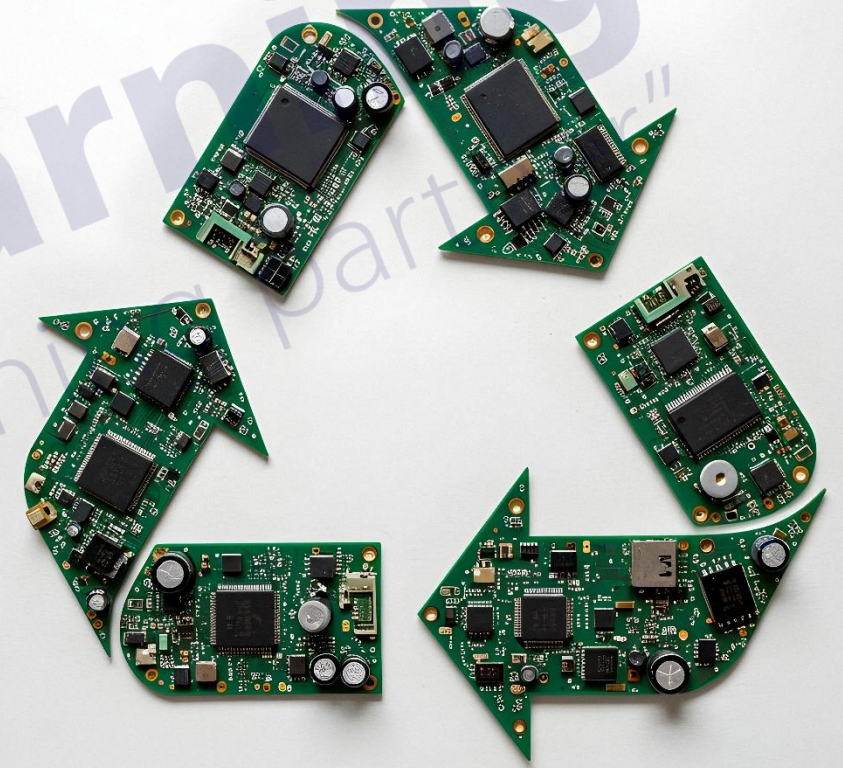
- The importation of electronic equipment in Sri Lanka has gradually increased, leading to a large amount of Waste Electrical and Electronic Equipment (WEEE).
- This growing use of electronic devices has resulted in a rising problem of electronic waste (e-waste).
- Sri Lanka is currently facing challenges in managing and addressing the proper disposal of e-waste.



Organizational Structures for Managing E-Waste

(A) Ministry of Environmental and Renewable Energy

- The Ministry of Environment and Renewable Energy is the main policy-making body in Sri Lanka for environmental management.
- Under this ministry, several agencies are responsible for implementing environmental policies.
- The Central Environmental Authority (CEA) and Sri Lanka Sustainable Energy Authority (SLSEA) play key roles in environmental protection.



Organizational Structures for Managing E-Waste

(B) Central Environmental Authority

- The **Central Environmental Authority (CEA)** integrates environmental considerations into national development processes.
- It was established under the **National Environmental Act No. 47 of 1980**.
- Since 1996, hazardous waste management has been regulated under the CEA.
- Gazette Notification No. 1534/18D (2008) authorizes the CEA to regulate disposal of electronic waste.



Policies and Regulations Imposed

National Electrical and Electronic Waste Management Policy

- The **National Electrical and Electronic Waste Management Policy (2008)** focuses on sustainable management of electronic and electrical equipment throughout its life cycle.
- It encourages compliance with the **Basel Convention** and other international agreements for safe e-waste handling.
- Under the **National Environmental (Protection & Quality) Regulation No. 01 of 2008**, e-waste is classified as hazardous waste.
- Entities involved in e-waste handling (generators, collectors, recyclers, etc.) must obtain a **Scheduled Waste Management (SWM) license** from the CEA.



Regulatory Compliance

- Governments and international organizations enforce regulations to protect the environment and promote sustainability.
- Compliance helps businesses avoid fines, penalties, lawsuits, and reputational damage.
- It improves corporate reputation and builds trust with customers, investors, and stakeholders.
- Environmentally responsible companies gain a competitive advantage in the market.



International Green Computing Initiatives

- The **Energy Star Program (EPA, 1992)** promotes energy-efficient IT hardware.
- The **European Union Energy Efficiency Directive** encourages energy-efficient IT equipment usage.
- The **EU Waste Electrical and Electronic Equipment (WEEE) Directive** ensures proper disposal, recycling, and recovery of e-waste.
- The **EU Emissions Trading Scheme (ETS)** requires organizations to monitor and report carbon emissions.
- **ISO 14064** provides standards for measuring and reporting greenhouse gas emissions.
- **ISO 14001** focuses on environmental management systems within organizations.



6.4.5 Advantages of Green IT

1. Competitive Advantage

Customers consider a company's environmental performance when making purchasing, leasing, or outsourcing decisions.

Strong environmental practices improve a company's reputation in industries such as apparel, electronics, and automobiles.

2. Lower Energy Cost

Green IT practices help organizations reduce energy consumption.

Companies can also benefit from tax savings by complying with environmental regulations.

Producing goods under strict environmental standards reduces operational costs



6.4.5 Advantages of Green IT

3. Investor Satisfaction

Investors and consumers increasingly demand transparency about carbon footprints and environmental initiatives.

Companies that fail to address environmental issues may face reduced share values.

Initiatives like the **Carbon Disclosure Project (CDP)** encourage companies to report their carbon emissions.

Industries such as apparel, electronics, and automobiles are major focus areas for such disclosures.



