**Professional Practices in ICT**

**1. Professionalism in ICT**

**Definition**: Professionalism is the set of behaviors, attitudes, and ethical practices that demonstrate excellence, integrity, and responsibility in ICT.

**Key Concepts:**

* **Profession:** Vocation or occupation
* **Professional**: An expert who adheres to industry standards and ethical guidelines.
* **Professionalism in ICT**: Includes ethical coding, data protection, project management, and legal compliance.
* **Professional Ethics**: Moral principles governing ICT professionals (e.g., data privacy, transparency).
* **Regulatory Challenges in ICT**:
  + **Data Privacy** (GDPR, AI risks)
  + **Cybersecurity threats** (hacking, ransomware)
  + **AI Bias** (legal loopholes in discrimination laws)
  + **AI, Social Media**

**2. Professional Bodies in ICT**

**Definition**: A Professional Body is an organization that represents and regulates professionals in a specific field.

**Functions of Professional Bodies:**

* Setting Standards (Define skills and ethical guidelines)
* Certifications & Accreditation (e.g., IEEE, ACM)
* Professional Development (workshops, training programs, conferences)
* Advocacy & Policy Influence
* Networking & Professional Development

**Major ICT Professional Bodies:**

* **International**:
  + **ACM** (Computing science & ethics)
  + **IEEE Computer Society** (Technology standards)
  + **BCS** (UK Chartered IT professionals)
  + **ACS** (Australia’s ICT regulatory body)
* **Sri Lanka ICT Bodies**:
  + **FITIS** – ICT industry representation
  + **SLASSCOM** – IT and Business Process Management (BPM)
  + **CSSL** – Professional association for ICT

**3. Professional Communication & Teamwork**

**Definition**: Professional communication is the structured exchange of information for workplace collaboration.

**Types of Communication:**

* Verbal Communication (Meetings, presentations)
* Non-verbal Communication (Body language, tone)
* Written Communication (Emails, reports, documentation)

**Common Barriers to Communication:**

* Technical Jargon
* Cultural Differences
* Remote Work Challenges
* Poor Listening skills

**Teamwork & Group Dynamics:**

* **Stages of Team Development**:
  1. **Forming** (Introduction phase)
  2. **Storming** (Conflicts arise)
  3. **Norming** (Roles established, work towards a common purpose)
  4. **Performing** (Efficient teamwork, task completion)

**4. Leadership in ICT**

**Definition**: Leadership is the ability to **influence, guide, and motivate** a team towards common goals.

**Key Leadership Styles:**

* **Democratic Leadership** (Team participation, collaboration)
* **Autocratic Leadership** (Strict control, fast decision-making)
* **Laissez-Faire Leadership** (Minimal supervision, trust-based)
* **Transformational Leadership** (Innovation-focused, Motivates team members)
* **Transactional Leadership** (Task-focused, reward-based)
* **Bureaucratic Leadership** (Sticks to the rules, Go by the book)
* **Servant Leadership** (Leading by Example, Less Agile)

**5. Collaboration Tools in ICT**

**Definition**: Collaboration tools are software that facilitate teamwork and communication in ICT projects.

**Types of Collaboration Tools:**

* **Communication** (Slack, Microsoft Teams, Google Meet, Zoom)
* **Project Management** (Jira, Trello, Asana, ClickUp, Monday)
* **File Sharing** (Google Drive, Dropbox, MS Sharepoint)
* **Version Control** (Git, GitHub, Bitbucket)

**6. Organizations in ICT**

**Definition**: An organization is a structured group of individuals working towards a common goal. Achieve specific missions or fulfill certain functions.

**Types of Organizations:**

* **For-Profit – Corporations/** **Small and Medium** (Google, Apple)
* **Non-Profit – Charities/Foundations** (Red Cross, Oxfam)
* **Government - Agencies/Bodies** (NASA, ICTA Sri Lanka)
* **Hybrid** (Social enterprises like Good Market)

**Common Organizational Structures:**

* **Hierarchical** (Top-down management)
* **Flat** (Fewer management levels)
* **Matrix** (Employees report to multiple managers) -> **functional + project-based**
* **Functional** (specific functions or expertise areas -> finance, marketing, operations)
* **Divisional** (semi-autonomous divisions or units)
* **Network**

**7. Intellectual Property (IP) in ICT**

**Definition:** Intellectual Property (IP) refers to legally protected intangible creations of the human mind, giving creators exclusive rights over their innovations.

**Types of Intellectual Property**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Definition** | **Examples** | **Validity** |
| **Patent** | Protects new inventions & technology | iPhone Face ID, Tesla batteries | 20 years |
| **Copyright** | Protects creative works | Software code, books, movies | Life + 70 years |
| **Trademark** | Protects brand names & logos | Nike Swoosh, Apple logo | Renewable every 10 years |
| **Industrial Design** | Protects product appearance | Coca-Cola bottle, car designs | 10-15 years |
| |  | | --- | |  |   **Geographical Indication** | Protects region-based products | Ceylon Tea, Champagne | Indefinite |
| **Trade Secret** | Confidential business info | KFC recipe, Google algorithm | No expiry |

**8. Internet Issues, Privacy & Data Protection**

**Definition**: Internet privacy ensures control over personal data shared online.

**Key Concerns:**

* **Data Collection & Surveillance** (Facebook-Cambridge Analytica)
* **Cybersecurity Threats** (Hacking, phishing)
* **Regulations**:
  + **GDPR (EU)** – User data rights
  + **CCPA (USA)** – Consumer privacy law
  + **Sri Lanka’s PDPA (2022)** – Local data protection law