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# **INTERNET, INTRANET AND EXTRANET**

Internet, intranet, and extranet are interconnected network concepts that facilitate communication and information sharing within and across organizations. While they share some similarities, they also have distinct characteristics that set them apart. Let's explore the similarities and differences between these three concepts:

## **Similarities**

1. **Network Infrastructure:** All three concepts are built upon the same underlying technology, which is TCP/IP (Transmission Control Protocol/Internet Protocol). This enables data transmission and communication across various devices and platforms.
2. **Web-based Communication:** Internet, intranet, and extranet all utilize web-based technologies and protocols for communication, such as HTTP (Hypertext Transfer Protocol) and HTTPS (Hypertext Transfer Protocol Secure).
3. **Access Control:** Security is a common concern for all three concepts. Each has mechanisms for controlling access to resources and information based on user authentication and authorization.

## **Differences**

### **1. Internet:**

- Definition: The internet is a global network of networks that connects millions of devices worldwide. It is a public network accessible to anyone with an internet connection.
- Access: Publicly accessible to individuals and organizations globally.
- Scope: Covers the entire globe and hosts a wide range of services, websites, and content.
- Security: Security measures are needed to protect against cyber threats, as the internet is susceptible to various forms of attacks.

## **2 Intranet :**

- Definition: An intranet is a private network within an organization that uses internet technologies to facilitate communication and information sharing among its members.
- Access: Limited to authorized members within the organization.
- Scope: Typically used for internal purposes like document sharing, collaboration, internal communication, and resource management.
- Security: Intranets can be more secure compared to the internet since access is restricted to employees or members of the organization.

## **3. Extranet :**

- Definition: An extranet is a controlled network that allows selected external parties (such as partners, suppliers, customers) to access specific resources or services, often in collaboration with an organization. □
- Access: Accessible by authorized external parties with specific permissions granted by the organization. □

- Scope: Used to extend an organization's network to external stakeholders, facilitating collaboration, data exchange, and communication. □
- Security: Extranets require strong security measures to ensure that only authorized external parties have access to the permitted resources.

In summary, while the internet, intranet, and extranet share common technological foundations, they serve different purposes and have distinct levels of accessibility, scope, and security. The internet is a global public network, intranet is an internal network for an organization, and extranet is a controlled network that allows collaboration with external parties. Understanding these differences is crucial for organizations to effectively utilize these networking concepts for communication, information sharing, and collaboration.

## **CONCEPT OF ELECTRONIC DATA INTERCHANGE**

Electronic Data Interchange (EDI) is a standardized electronic communication method used by businesses to exchange structured business documents and information seamlessly between computer systems. It eliminates the need for paper-based transactions, manual data entry, and reduces the likelihood of errors. EDI plays a crucial role in streamlining supply chain operations, enhancing efficiency, and

improving collaboration among trading partners. Here's an overview of the concept of Electronic Data Interchange:

### **Key Elements of EDI:**

**1. Structured Data Format:** EDI uses standardized formats to represent business documents, such as purchase orders, invoices, shipping notices, and more. These formats are typically based on global standards like ANSI X12, UN/EDIFACT, and XML.

**2. Data Mapping:** Trading partners must agree on a common set of data formats, fields, and codes. Data mapping involves translating data from the sender's system to the agreed-upon format for transmission and then back into the receiver's system.

**3. Translation Software:** EDI translation software converts the data from the internal format of the sender's system to the standardized EDI format for transmission. Similarly, it translates incoming EDI messages into a format that the receiver's system can understand.

**4. Communication Protocols:** EDI messages are exchanged using various communication protocols, such as AS2 (Applicability Statement 2), FTP (File Transfer Protocol), and VANs (Value-Added Networks). These protocols ensure secure and reliable data transmission.

**5. EDI VANs:** Value-Added Networks are third-party intermediaries that facilitate secure communication between trading partners. They offer

services like data transformation, encryption, and routing, ensuring smooth EDI transactions.

### **Use Cases of EDI:**

**1. Supply Chain Management:** EDI facilitates seamless communication between suppliers, manufacturers, distributors, and retailers, ensuring timely and accurate order processing, inventory management, and shipment tracking.

**2. Retail Industry:** Retailers use EDI to automate processes related to purchase orders, invoices, and inventory updates, allowing for efficient management of product flow and restocking.

**3. Healthcare:** EDI is used in healthcare for claims processing, eligibility verification, and sharing patient records securely among providers and insurers.

**4. Finance:** EDI supports electronic funds transfers, making it possible to exchange payment information, remittance advice, and other financial documents electronically.

**5. Logistics:** Transportation companies use EDI for shipment and route planning, load tendering, and real-time tracking of shipments.

## **COMPONENTS OF CONTROL OBJECTIVES FOR INFORMATION ANAD RELATED TECHNOLOGY**

The concept of electronic data usage refers to the various ways in which digital information is collected, processed, stored, transmitted, and analyzed in today's digital age. Electronic data usage encompasses a wide range of activities and applications across personal, business, and societal contexts. It has transformed the way we interact with information, make decisions, and conduct various aspects of our lives. Here are some key aspects to consider:

**1. Data Collection and Generation:** Electronic data usage begins with the collection and generation of digital information. This can include data collected from sensors, devices, websites, applications, social media interactions, and more. The proliferation of internet-connected devices (IoT) has led to an explosion of data generation from various sources.

**2. Data Storage and Management:** Electronic data needs to be stored and managed efficiently. This involves selecting appropriate storage solutions, organizing data in databases, ensuring data security, and implementing data retention policies.

**3. Data Transmission and Sharing:** Electronic data can be transmitted across networks, whether locally within an organization or globally over the internet. Cloud computing and file-sharing platforms have facilitated seamless data sharing and collaboration among individuals and teams.

**4. Data Analysis and Insights:** One of the most significant aspects of electronic data usage is data analysis. Advanced data analytics techniques,

including machine learning and artificial intelligence, allow organizations to extract valuable insights from large datasets. This analysis can drive decision-making, predict trends, and optimize processes.

**5. Healthcare and Research:** In the healthcare sector, electronic data usage enables electronic health records, medical imaging, genetic research, and drug development. This data aids in personalized medicine and medical advancements.

**6. Ethical and Legal Considerations:** Electronic data usage raises ethical and legal concerns related to data ownership, consent, privacy, and data rights. Regulations such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) address these issues.

In summary, the concept of electronic data usage encompasses the entire lifecycle of digital information, from collection to analysis and application. It has revolutionized how businesses operate, how research is conducted, how services are delivered, and how individuals interact with technology. As electronic data continues to play a pivotal role in various domains, it's essential to balance the benefits of data-driven insights with ethical and privacy considerations.