

UNIT-9 THE INTERNET AND THE NEW INFORMATION TECHNOLOGY INFRASTRUCTURE

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The New Information Technology (IT) Infrastructure For Digital Firm

Introduction to IT Infrastructure for Digital Firms

The IT infrastructure is the backbone of any any digital firm, enabling seamless operations. operations.

With the rise of digital transformation, businesses must adapt their infrastructure to meet new demands.

This presentation will explore the key components and trends shaping modern IT infrastructure.



1. Cloud Computing Adoption

Cloud computing offers scalability, flexibility, flexibility, and cost efficiency for digital firms. firms.

Organizations can leverage Infrastructure as a Service (IaaS) and Software as a Service (SaaS) models.

The shift to the cloud allows firms to focus on core business activities rather than maintenance.



2. Enhanced Cybersecurity Measures

Digital firms face increasing cybersecurity threats that necessitate robust security protocols.

Implementing multi-factor authentication and end-to-end encryption is essential for data protection.

Regular security audits and compliance checks help mitigate risks and safeguard sensitive information.



3. Data Management and Analytics

Effective data management is crucial for informed decision-making in digital firms.

Advanced analytics tools allow businesses to derive actionable insights from vast amounts of data.

Organizations are increasingly utilizing big data technologies to enhance customer experiences and operational efficiency.

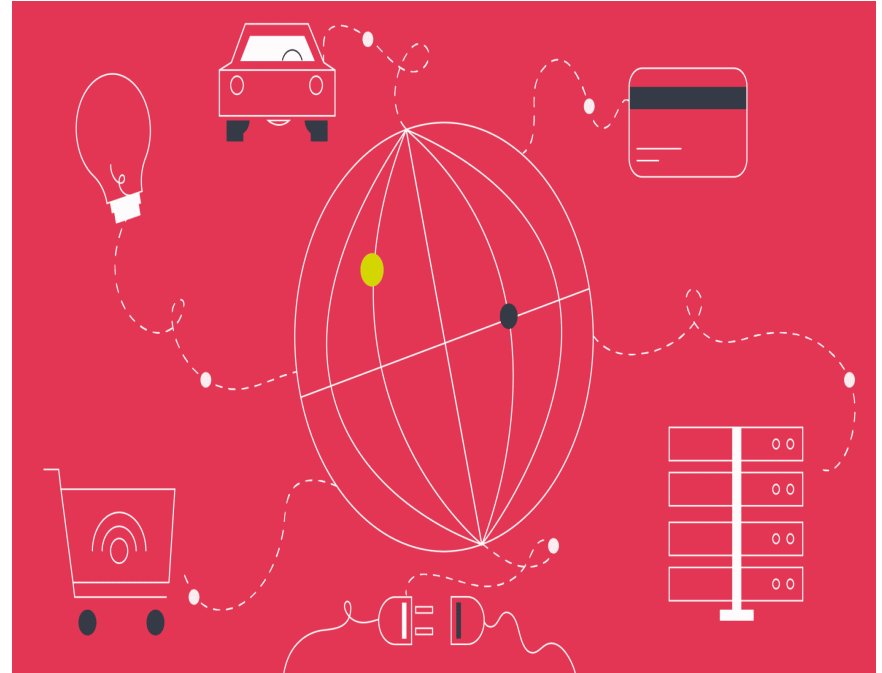


4. Internet of Things (IoT) Integration

IoT devices facilitate real-time data collection and monitoring, enhancing operational efficiency.

Digital firms can leverage IoT for predictive maintenance, supply chain optimization, and customer engagement.

The integration of IoT requires a robust network infrastructure to support device connectivity.

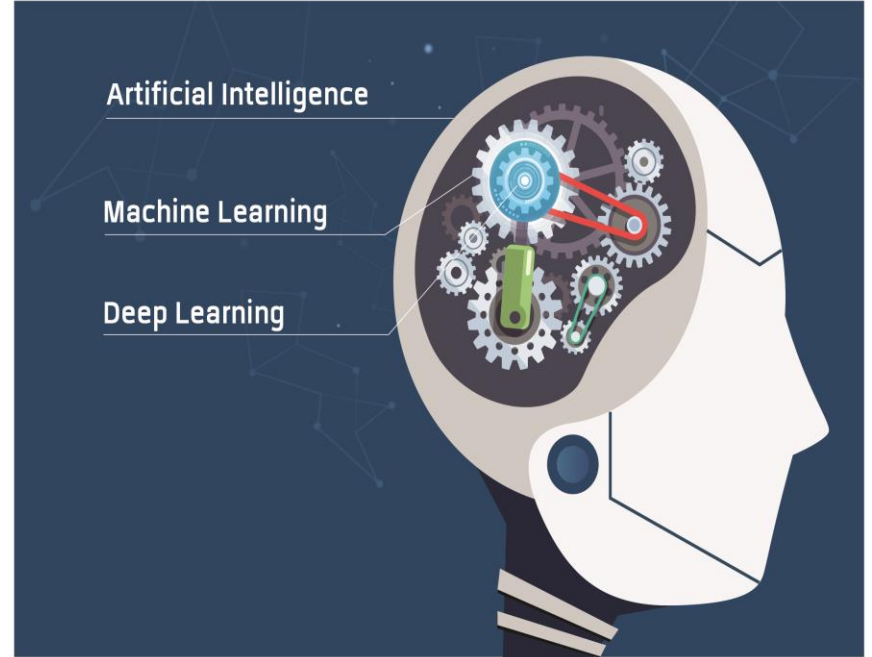


5. Artificial Intelligence (AI) and Machine Learning

AI and machine learning technologies are transforming how digital firms analyze data and automate processes.

These technologies enable personalized customer experiences through smarter recommendations.

Investing in AI infrastructure can lead to improved operational efficiency and innovation.



6. Agile Development and DevOps Practices

Agile development methodologies support rapid application development and deployment.

DevOps practices enhance collaboration between development and operations teams for better outcomes.

Organizations adopting Agile and DevOps can respond quickly to market changes and customer needs.

Best Practices for DevOps in the Cloud

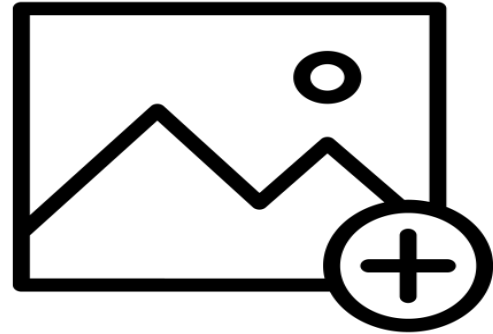


7. Remote Work Technologies

The rise of remote work necessitates reliable communication and collaboration tools.

Digital firms must invest in virtual private networks (VPNs) and secure access solutions.

Employee productivity and engagement can be maintained with the right IT infrastructure for remote work.



8.Sustainable IT Practices

Digital firms are increasingly focusing on sustainability in their IT infrastructure.

Implementing energy-efficient solutions and reducing e-waste are critical for environmental stewardship.

Sustainable IT practices not only benefit the planet but can also enhance a firm's brand reputation.



Future Trends in IT Infrastructure

Emerging technologies like quantum computing and blockchain are set to revolutionize IT infrastructure.

Businesses must stay ahead of technological advancements to remain competitive in the digital landscape.

A proactive approach to adopting new technologies will ensure long-term success for digital firms.



The Internet • The World Wide Web

Introduction to the Internet

The Internet is a global network that connects millions of private, public, academic, business, and government networks.

It facilitates the exchange of data and communication across vast distances in real-time.

The development of the Internet has revolutionized how we access information, communicate, and conduct business.



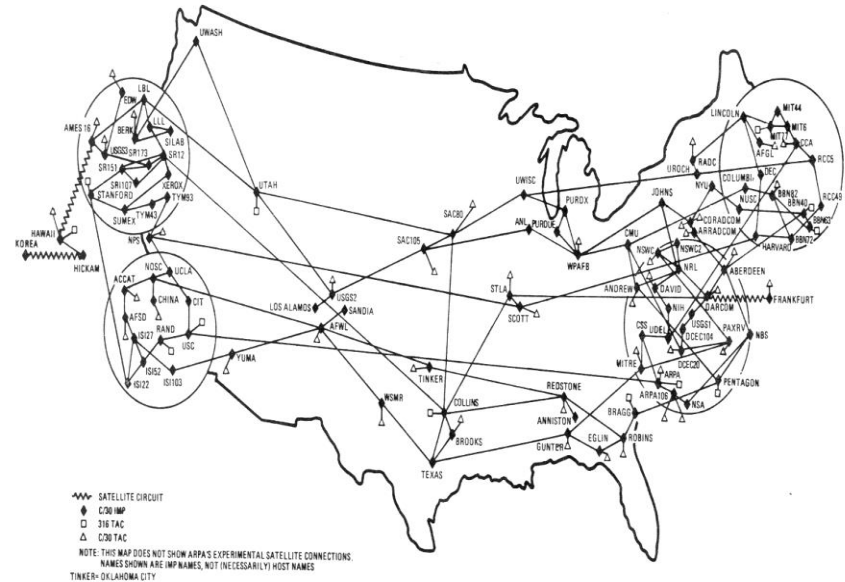
History of the Internet

The origins of the Internet date back to the ARPANET, funded by the U.S. Department of Defense in the 1960s.

Over the decades, the network evolved with the introduction of protocols like TCP/IP in the 1980s.

By the 1990s, the Internet began to expand rapidly, leading to the World Wide Web's creation and popularization.

ARPANET/MILNET GEOGRAPHIC MAP, APRIL 1984

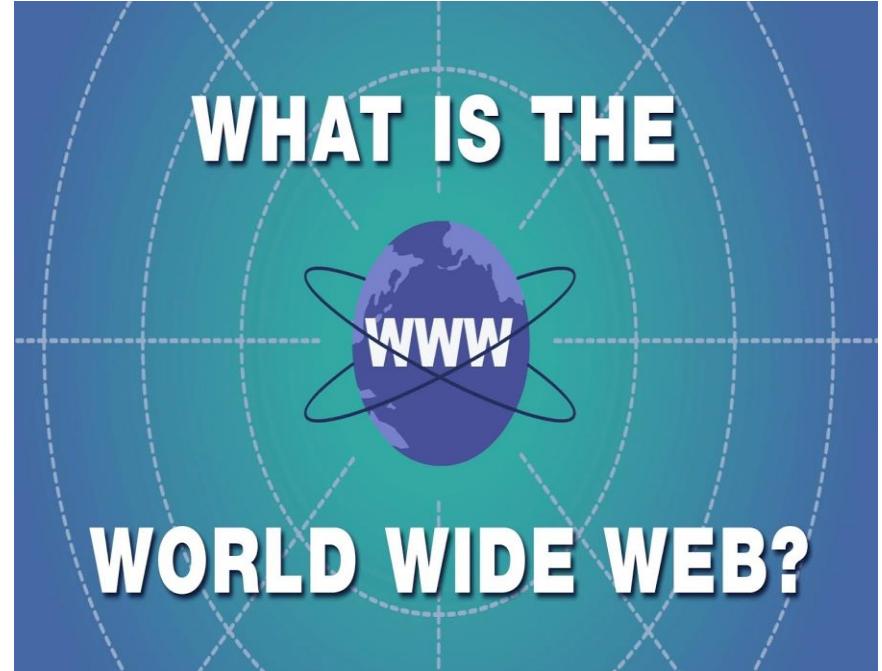


What is the World Wide Web?

The World Wide Web (WWW) is an information system that allows documents to be connected via hyperlinks.

It operates over the Internet, providing users with access to various resources such as websites and multimedia.

The Web uses HTML, CSS, and JavaScript to create interactive and visually appealing content for users.

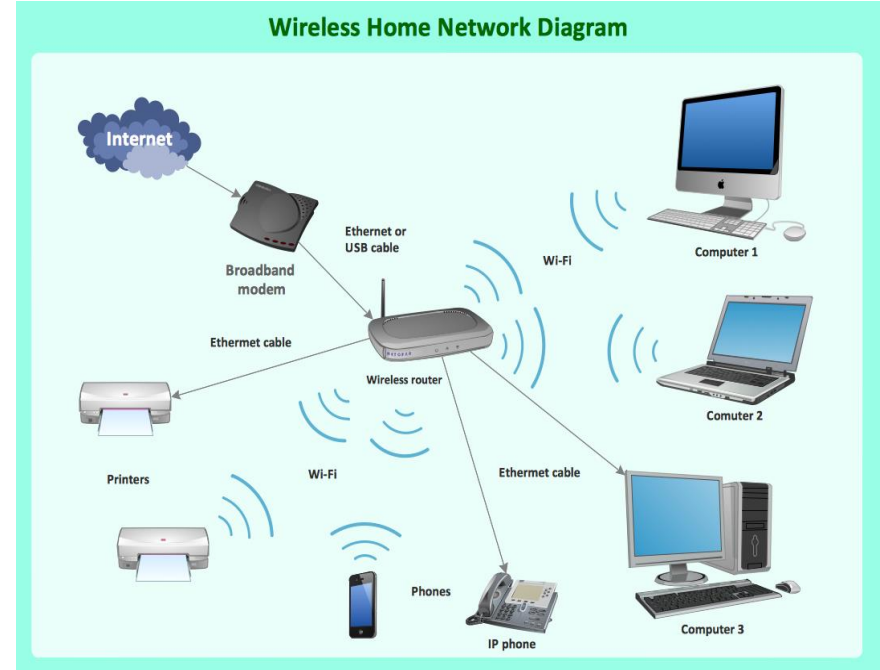


Key Components of the Internet

The Internet consists of several key components, **including routers, servers, and clients.**

Routers direct data traffic and ensure that information reaches its intended destination efficiently.

Servers host websites and provide resources, while clients are devices that access the Internet, such as computers and smartphones.



How the Internet Works

The Internet operates on a system of protocols that define how data is transmitted and received.

Transmission Control Protocol (TCP) and Internet Protocol (IP) are foundational protocols for communication.

Data is broken into packets, sent across the network, and reassembled at the destination, ensuring efficient delivery.



Internet Services

The Internet offers a wide range of services, including email, file transfer, and online gaming.

Social media platforms, streaming services, and e-commerce sites are also significant components of the online ecosystem.

These services enhance connectivity and create opportunities for personal and professional interactions.

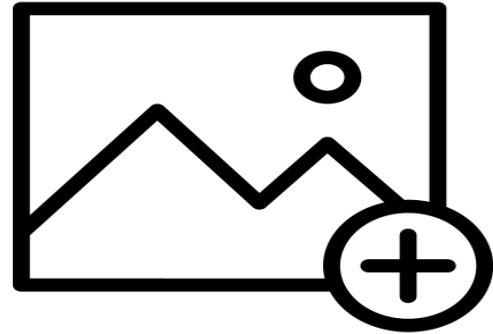


The Impact of the Internet

The Internet has transformed communication, allowing individuals to connect across geographical boundaries.

It has also revolutionized commerce, enabling businesses to reach global markets and consumers.

Education has been significantly impacted, with online learning resources making knowledge more accessible.

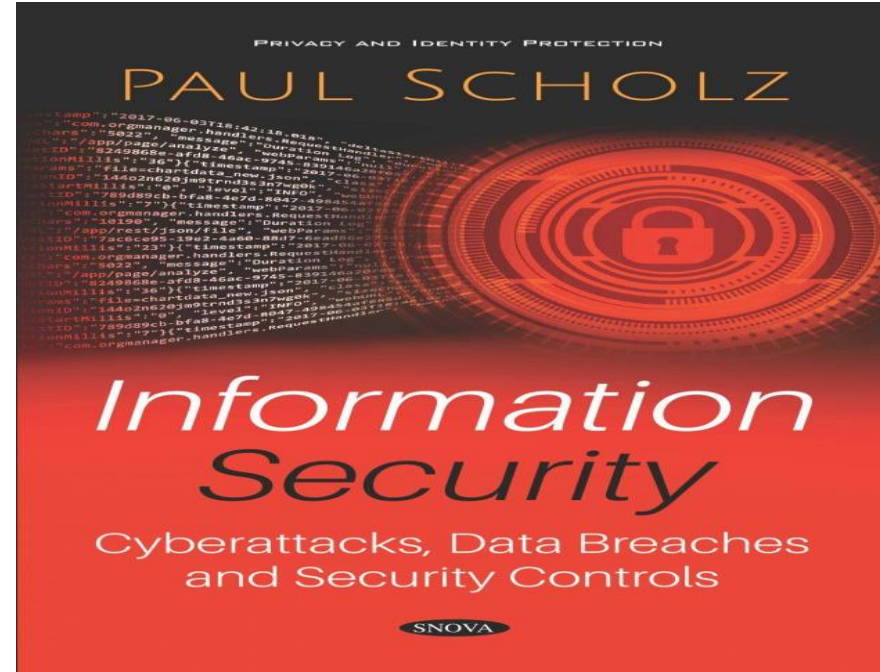


Internet Security and Privacy

With the growth of the Internet, concerns about security and privacy have emerged.

Cyberattacks, data breaches, and identity theft are prevalent issues that affect individuals and organizations alike.

Implementing strong security measures, such as encryption and two-factor authentication, is essential for protecting personal information.



The Future of the Internet

The Internet continues to evolve, with advancements in technologies such as AI, IoT, and 5G connectivity.

These developments promise to enhance user experiences and expand the capabilities of the Internet even further.

However, challenges like digital divide and cybersecurity will need to be addressed to ensure equitable access and safety.

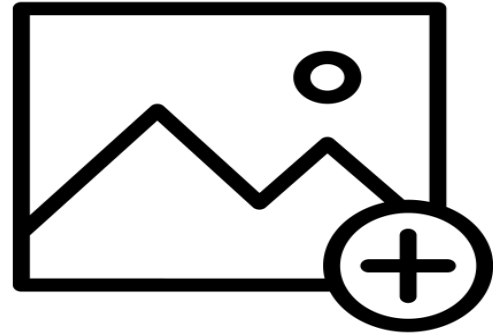


Conclusion

The Internet and the World Wide Web have fundamentally changed the way we live, work, and interact.

Understanding their structure, functionality, and implications is crucial in navigating the digital age.

As technology advances, the Internet will remain a pivotal force in shaping our future.



Support Technology For E-Commerce And E-Business • Management Issues And Decision In IT

Introduction to E-Commerce and E-Business

E-commerce refers to the buying and selling of goods and services over the internet.

E-business encompasses all aspects of running a business online, including supply chain management and customer service.

Understanding the technological support behind these platforms is crucial for operational success.



Key Technologies for E-Commerce

E-commerce platforms such as Shopify, WooCommerce, and Magento provide robust frameworks for online selling.

Payment gateways like eSewa, Khalti, online banking, PayPal and Stripe facilitate secure online transactions, enhancing customer trust.

Cloud computing offers scalable resources that can accommodate fluctuating traffic and data storage needs.

| Platform | Stores |
|--------------------------------------|--------|
| WooCommerce | 5,241 |
| Custom Cart | 1,885 |
| Wix | 762 |
| Square Online | 446 |
| GoDaddy Online Store | 445 |
| SHOPLINE | 423 |
| Shoplazza | 411 |
| YouCan | 410 |
| Squarespace | 381 |
| Yampi | 354 |



Importance of Data Analytics

Data analytics helps businesses track customer behaviors and preferences for improved marketing strategies.

It allows for real-time insights into sales performance, enabling timely decision-making.

Businesses can leverage predictive analytics to forecast trends and optimize inventory management.



Cybersecurity Challenges

E-commerce sites are prime targets for cyberattacks, making data protection a top priority.

Implementing robust cybersecurity measures is essential to safeguard customer information and maintain trust.

Regular audits and updates to security protocols are necessary to combat evolving threats.

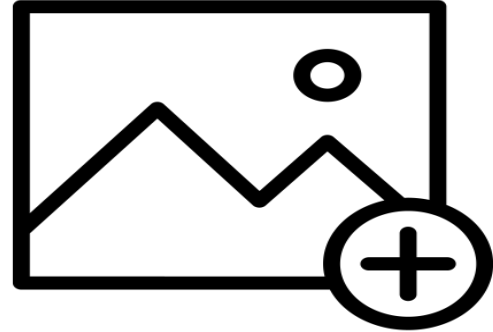


Mobile Commerce Trends

Mobile commerce (m-commerce) is rapidly growing, necessitating mobile-optimized websites and applications.

Responsive design enhances user experience, leading to increased conversion rates on mobile devices.

Integrating mobile payment options can streamline transactions and improve customer satisfaction.

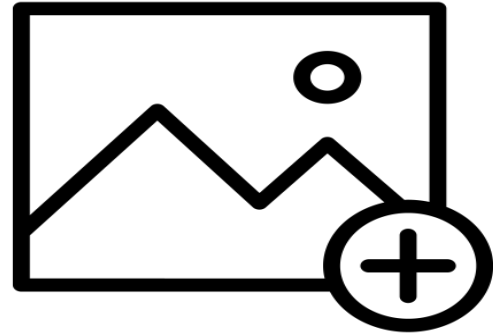


Supply Chain Management Technology

Efficient supply chain management software is vital for coordinating inventory and logistics in e-business.

Real-time tracking systems enhance visibility and reduce delays in the delivery process.

Automation tools can optimize order fulfillment and minimize human errors.



Customer Relationship Management (CRM)

CRM systems help businesses manage interactions with current and potential customers effectively.

They provide insights that allow for personalized marketing and improved customer service.

Integrating CRM with e-commerce platforms can enhance customer engagement and retention.

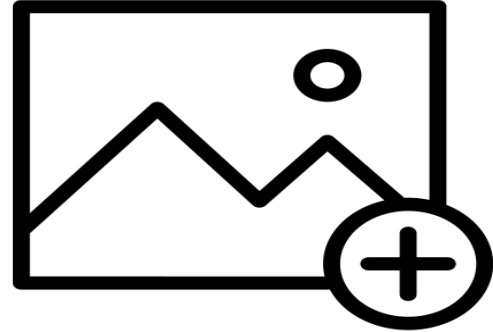


Decision-Making in IT Management

Effective decision-making in IT management requires aligning technology with business goals.

Leaders must evaluate technology investments based on ROI and long-term sustainability.

Collaboration among IT, marketing, and operations teams is crucial for informed decision-making.



Emerging Technologies Impact

Technologies like Artificial Intelligence (AI) and Machine Learning (ML) are transforming e-commerce strategies.

Chatbots and virtual assistants enhance customer service and streamline communication.

Blockchain technology is being explored for secure transactions and supply chain transparency.



Conclusion and Future Directions

The continuous evolution of technology will shape the future of e-commerce and e-business.

Businesses must remain agile and adaptable to leverage new technological advancements.

Ongoing training and development in IT management will be essential for sustaining competitive advantage.

This presentation outlines crucial aspects of support technology in e-commerce and e-business, along with associated management issues and decision-making processes in IT.

