ICT 700
Introduction To
Business Information Systems

LECTURE 5

Social Media, Cloud Computing and IOT

Unit Coordinator:
Sajad Ghatrehsamani

King's Own Institute

Reading Chapter:

Chapter 8 – Stair & Reynolds (2020)

Learning Objectives

1. Identify Social Media, Cloud Computing and Internet of Things (IOT) used approaches.
2. Discuss what are the challenges of using Social Media, Cloud Computing and Internet Of Things (IOT).
3. Discuss what are the benefits of using Social Media, Cloud Computing and Internet Of Things (IOT).
4. Summarize four common issues organizations encounter when moving to public cloud computing.
5. Discuss the advantages and disadvantages of using public, private, and hybrid cloud computing.

Social Media

1. Social media is a digital technology that facilitates the sharing of text and multimedia through virtual networks and communities.

2. More than 4.7 billion people around the world use social media.

3. In 2022, the number of social media users worldwide grew by 137 million, or about 3%.

Source: https://www.investopedia.com/terms/s/social-media.asp

KOI
King's Own Institute

Social Media Platforms

- The biggest social media platforms are TikTok, Facebook, YouTube, WhatsApp, Instagram, and WeChat.

- Social media typically features user-generated content and personalized profiles that lend themselves to engagement via likes, shares, comments, and discussion.

KOI
King's Own Institute

Discussion

1. Which social media platform do you use?
2. Justify what are its features?
3. Why do you choose the social media platform?

King's Own Institute

How Did Social Media Evolve?

In 2004, My Space was the first network to reach one million monthly active users.

In social media originated as a way to interact with friends and family but soon expanded to serve many purposes.

KOI
King's Own Institute

Social Media In Business Marketing

Social Media has become a key tool. Companies use the platforms to find and engage with customers, drive sales through advertising and promotion, gauge consumer trends, and offer customer service or support.

Social media's ability to collect information helps businesses to fine-tune their marketing campaigns and conduct market research.

.

KOI
King's Own Institute

Social Media In Business Marketing

1. Social media helps companies promote products and services as it enables the distribution of targeted, timely, and exclusive sales and coupons to potential customers.
2. Social media can help build customer relationships through loyalty programs linked to social media.

Types of Social Media

1. Video game players.
2. Social gamers.
3. Video sharers.
4. Professional business networks.
5. Virtual worlds.
6. Review platforms.
7. Network career opportunities.
8. Discussing global issues such as politics.
9. Business Marketing and Customer Engagement.

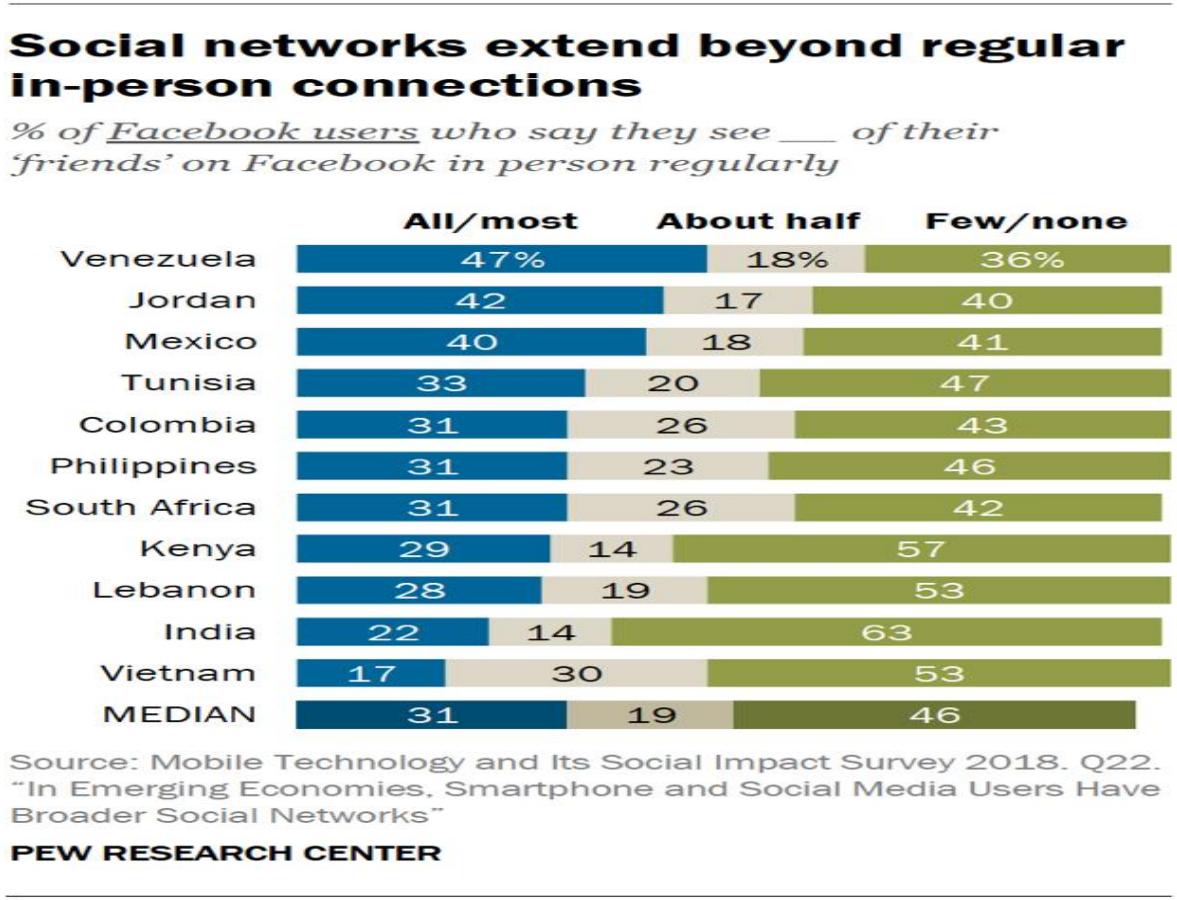
Social Media Benefits

1. Navigating and sharing digital content.
2. Responsible online interaction.
3. Building an online identity.
4. Maintaining their digital reputation.

King's Own Institute

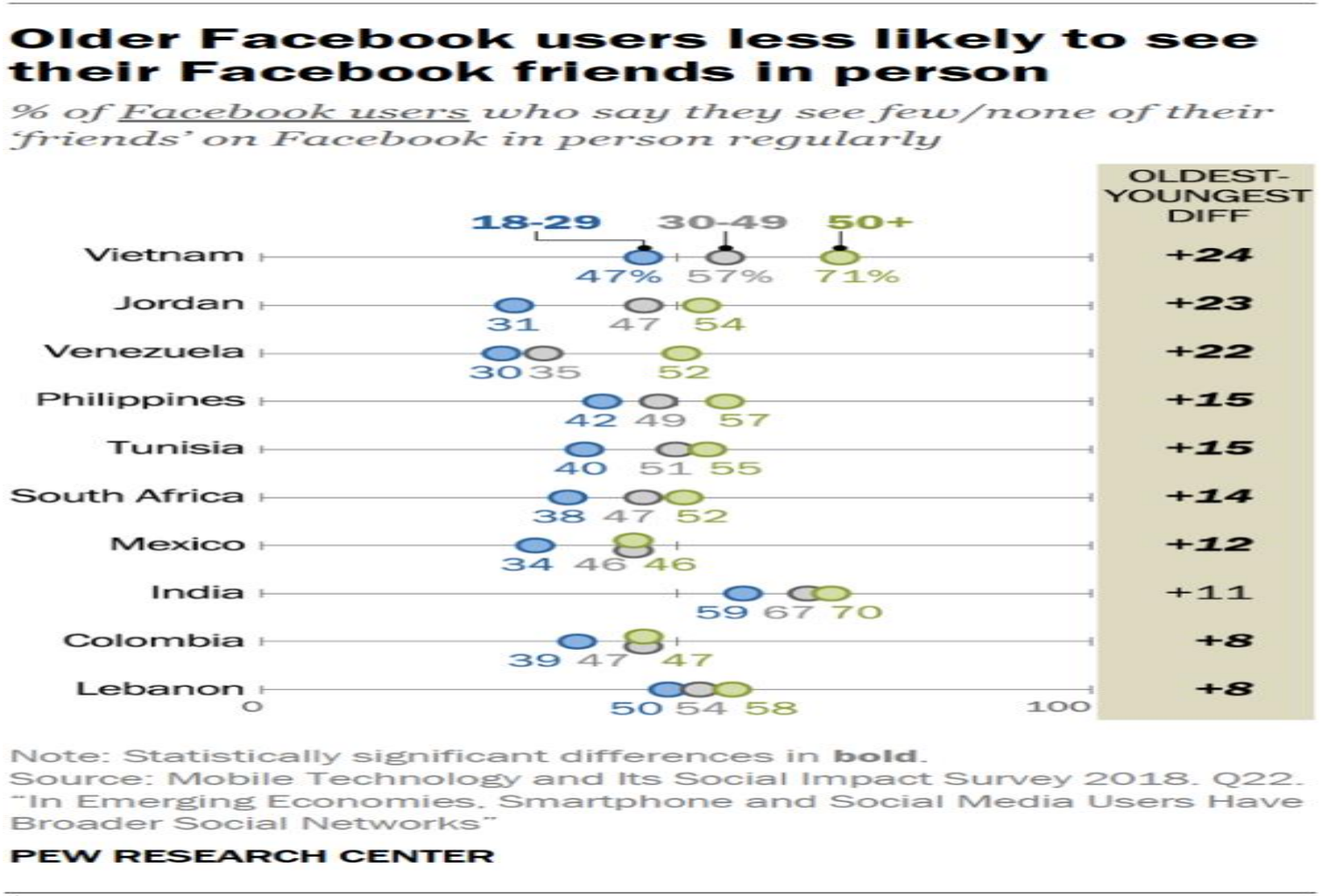
Social Media Effects

According to a 2019 survey by Pew Research Center, people's use of social media is correlated with having more friends and more diverse personal networks, especially within emerging economies.



King's Own Institute

Social Media Effects



King's Own Institute

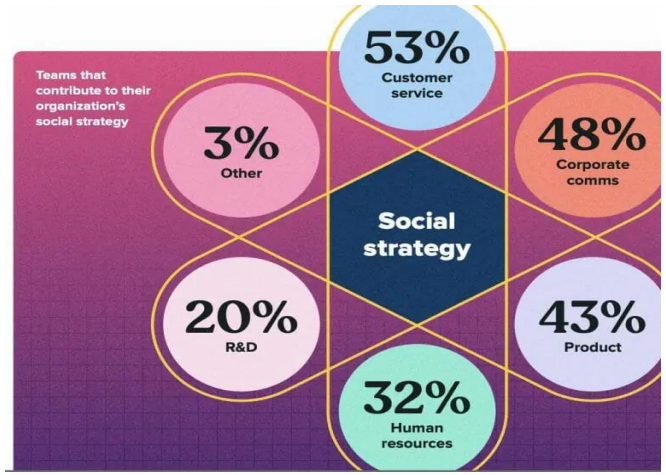
Businesses Use Social Media For Marketing

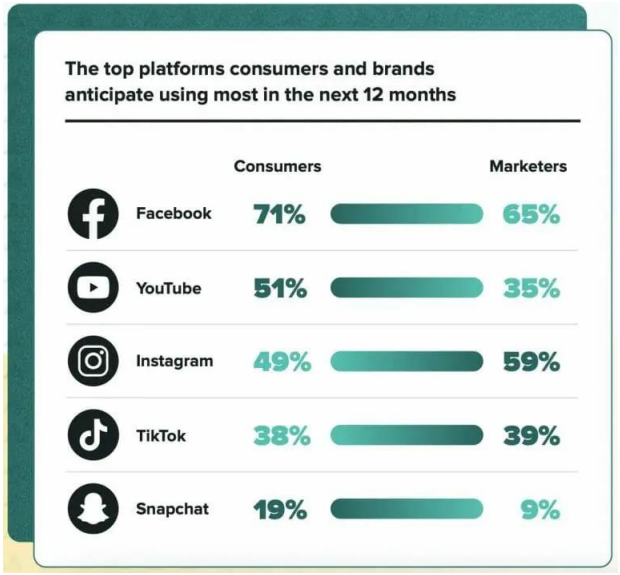
1. To target their consumers.
2. To build a loyal fan base.
3. To create a culture behind their brands.

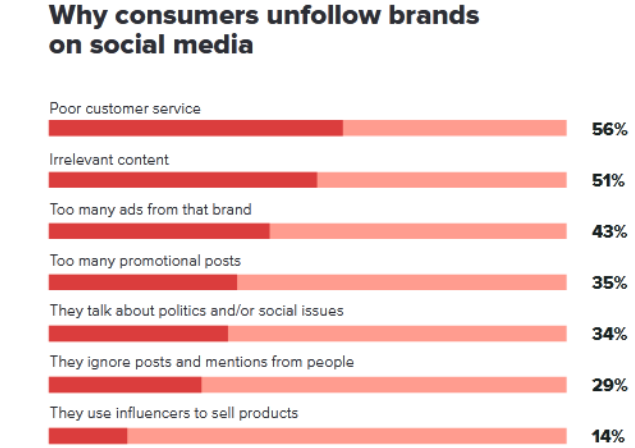
KOI
King's Own Institute

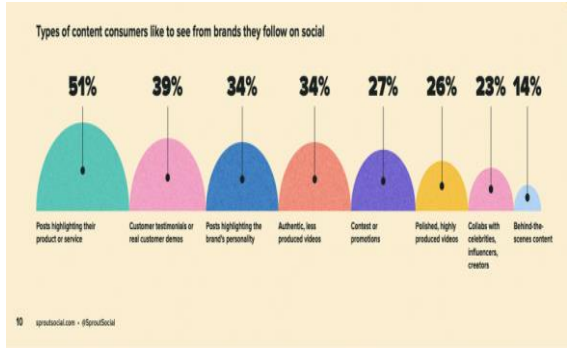
Social Media Challenges

Challenge #1: Lack of Connection Across Departments
Challenge #2: Identifying the Right Platform
Challenge #3: Understanding the Target Audience
Challenge #4: Declining Organic Engagement
Challenge #5: Meeting Consumer Expectations





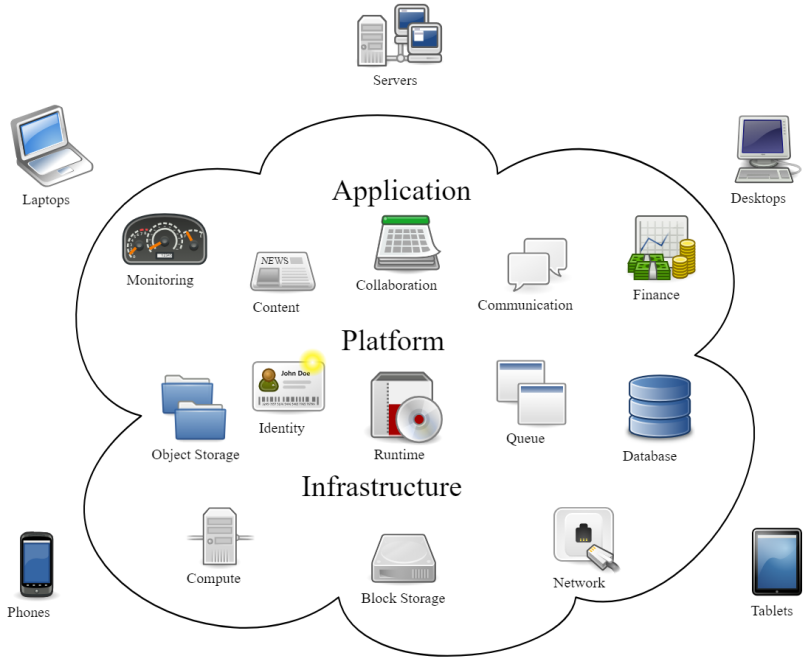




Source : https://influencermarketinghub.com/social-media-marketing-challenges/

KOI
King's Own Institute

Cloud Computing



1. Cloud computing refers to a computing environment in which software and storage are provided as an Internet service and accessed by users with their Web browser.

2. Many organizations are turning to cloud computing as an approach to outsource some or all their IT operations.

Source https://en.wikipedia.org/wiki/Cloud_computing

King's Own Institute

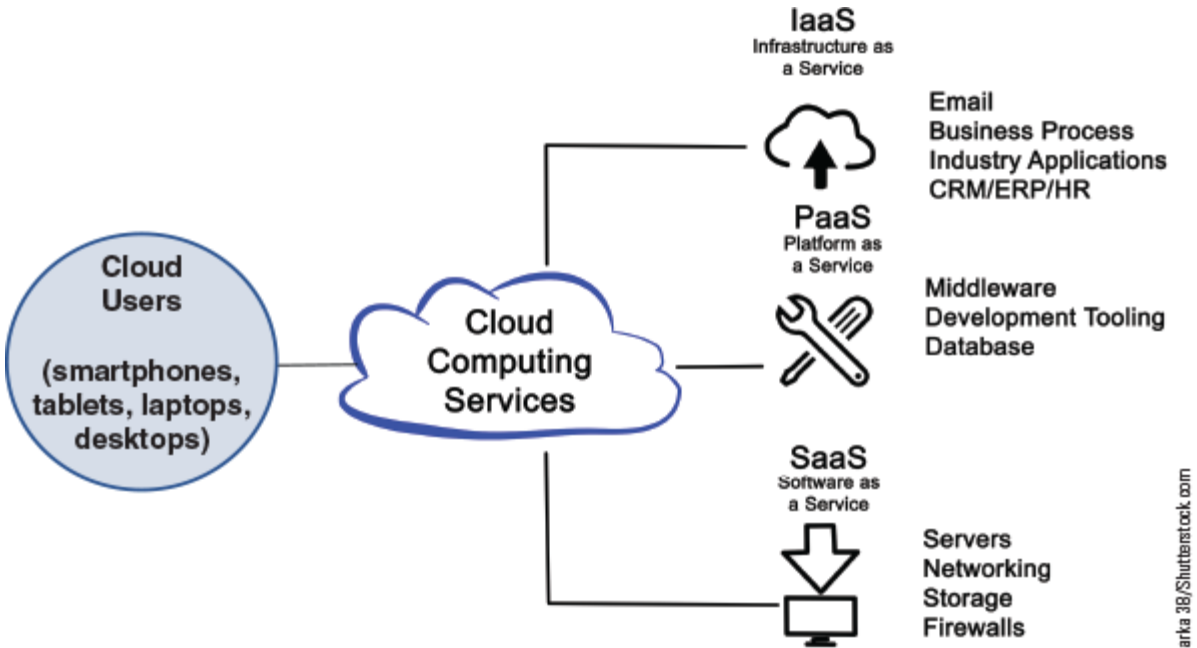
Cloud Computing Objective

1. To provide services like storage, servers, database, networking, etc. over the internet without the user managing it directly.

2. To store data and allow authorized users anywhere anytime can access.

Types of Cloud Computing

- Private Cloud.
- Public Cloud.
- Infrastructure as a service (IAAS).
- Platform as a service (PAAS)
- Software as a service (SAAS)
- Hybrid Cloud Computing



Activity

Click on Google and find :

- one application that used Infrastructure as a service (IAAS).
- one application that used Platform as a service (PAAS)
- one application that used Software as a service (SAAS)

KOI
King's Own Institute

Case Study: Cloud Computing Services Models IaaS, PaaS and SaaS Explained

Case Study
Pfizer Private Cloud Computing

Pfizer, a global leader in the pharmaceutical industry, wanted to address the way it handled computing needs at peak times.

The company found a solution in Amazon's VPC (Virtual Private Cloud), which was set up to enhance Pfizer's high-performance computing systems and improve performance during peak demand.

The Amazon VPC offered Pfizer additional levels of security and an ability to integrate with the company's existing technology infrastructure.

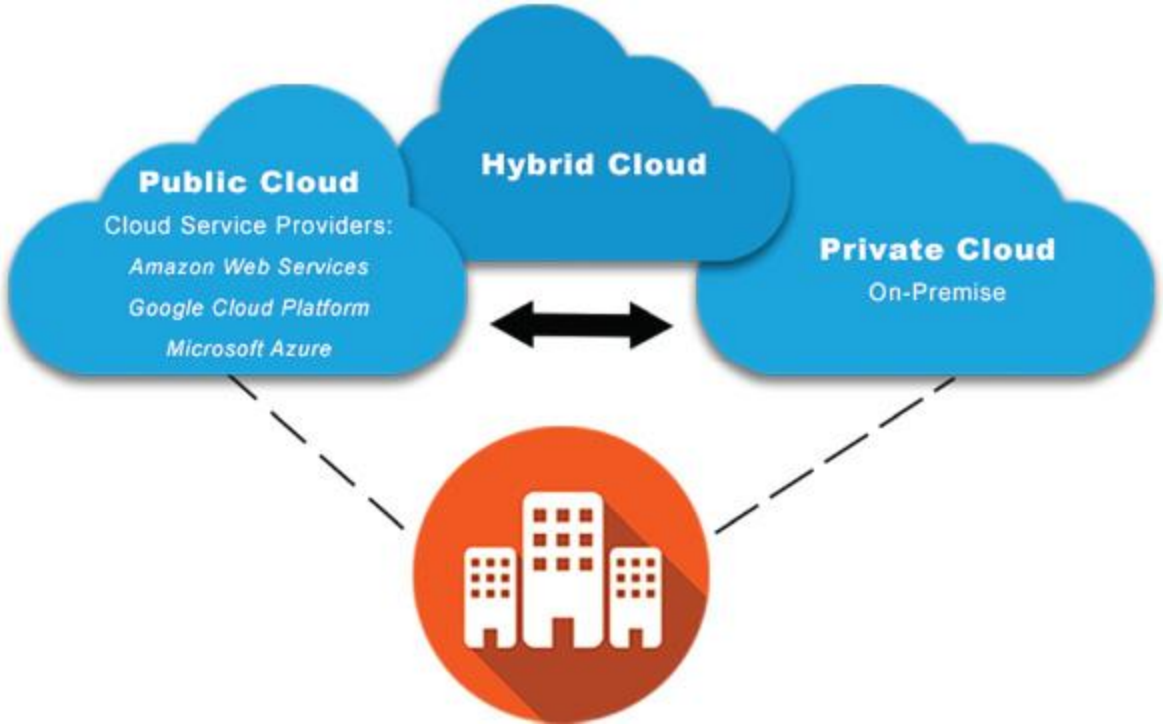
Pfizer now uses the VPC to provide a secure environment in which to carry out complex research calculations.

The VPC's job scheduler function manages workload, and adds additional instances as needed to address demand.

As a result, Pfizer avoided the need for some additional hardware and software investments, which freed up more money for investing in the company's research and development activities.

KOI
King's Own Institute

Hybrid Cloud Computing



KOI
King's Own Institute

Cloud Computing Challenges

1. Data Security and Privacy
2. Cost Management
3. Multi-Cloud Environments
4. Performance Challenges
5. Interoperability and Flexibility
6. High Dependence on Network
7. Lack of Knowledge and Expertise

Cloud Computing Benefits

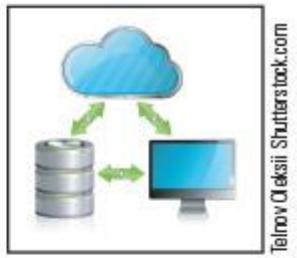
1. High availability, even in the event of a natural disaster.
2. Ease of backups.
3. Ease of scaling server size and disk space (rapid elasticity).
4. Choice of data allowances.
5. Pay only for what is used.
6. Remote technicians at the provider.

Internet Of Things (IOT)

The Internet of Things (IoT) is a network of physical objects or “things” embedded with sensors, processors, software, and network connectivity capability to enable them to exchange data with the manufacturer of the device, device operators, and other connected devices (see figure below).

1. Sensors gather data

2. Data passes over network



3. Data from across the IoT is gathered and stored-often in the cloud

4. Data is combined with other data from other systems

5. Data is analyzed to gain insights Into operation of devices on IoT

6. Alerts sent to people, Enterprise systems, or IoT Devices based on these insights

KOI
King's Own Institute

Examples of IOT

1. Home Automation.
2. Wearable Devices.
3. Smart Cities
4. Autonomous Vehicles

KOI
King's Own Institute

1G to 5G networks.

Generation	Year introduced	Capabilities	Speed
1G	1986	Analog voice calls on mobile phones	2.4 kb/sec
2G	1991	Digital voice, text messaging	64 kb/sec
3G	2001	Mobile data, Internet connectivity	2 mb/sec
4G / LTE	2011	Enhanced speeds	100
5G	2020	Fast data transfer, with minimal latency and ability to connect many IoT devices	1–10 Gbps

King's Own Institute

Types of IoT Applications

Type of IoT application	Degree of sensing	Degree of action
Connect and monitor	Individual devices each gather a small amount of data	Enables manual monitoring using simple threshold-based exception alerting
Control and react	Individual devices each gather a small amount of data	Automatic monitoring combined with remote control with trend analysis and reporting
Predict and adapt	External data is used to augment sensor data	Data used to perform predictive analysis and initiate preemptive action
Transform and explore	Sensor data combined with external data is used to provide new insights	New business models, products, and services are created

KOI
King's Own Institute

IOT Benefits

1. Reduce costs to achieve a competitive advantage
2. Deepen the organization’s understanding of consumer preferences and behaviors.
3. Improve customer service and experience

KOI
King's Own Institute

Case Study : Autonomous IoT Security in Minutes

King's Own Institute

Case Study Discussion

Traditionally, car insurance premiums are set based on the type of vehicle and the demographics of the driver. As a result, young drivers are charged much higher premiums.

Several auto insurance companies are now employing low-cost in-car sensors with the ability to provide real-time data and advancements in mathematical modeling techniques to improve their risk assessment models.

The sensors can record immense amounts of data related to the vehicle and driver. Insurers and underwriters can use this data to judge risk based on a much more individual basis than ever before.

Your insurance company has offered you the option of installing a small telematics device into your car's diagnostics port. This device records data such as the vehicle's speed, distance traveled, time of day, and the rate of acceleration and braking. By analyzing this data, the insurer can determine the driver's style and adjust the premium as necessary.

While no guarantee was made, your agent says that there is potential that your premium could be reduced.

Presentation

1. Which of the four types of IoT application does this device represent?
2. What security concerns might using this device raise?
3. What additional benefits might be gained from use of this device? If you had access to a telematics device, would you use it in your car in exchange for potentially smaller insurance premiums?
4. How does using this device impact your privacy?

Quiz

1. Three commonly used approaches to cloud computing are public cloud computing, private cloud computing, and _____
2. Common issues encountered when moving to public cloud computing include complex pricing arrangements, performance issues, inadequate data security, and _____
3. A private cloud computing environment can provide more data security than a public cloud computing environment. True or False?
4. Network connectivity is not required for objects with sensors to exchange data with other connected devices. True or False?
5. A faulty sensor or a bad network connection can result in _____

Any Questions?

KOI
King's Own Institute