LIVING IN I.T. ERA

MODULE 5: IT Culture and the Society

The Impact of IT on the Society

Internet of Things (IoT)

Internet of Things (IoT) is a set-up of devices and objects which are connected together in a given network. Their connection, often wirelessly, is possible using both hardware and software.

Capabilities of IoT

1. Integration across technology and business

   Sensors can be used to help improve business processes, such as machines used for manufacturing and production, security systems, and even simple ones like automatically turning on and off a light switch.
2. Data analysis and synchronization

   IoT should be capable of providing analytics to help organizations in their decision-making.
3. Security and service

   IoT devices are usually divided into networks and each network has a different network access, some more restricted than others, without compromising connection and system integration.

Applications of IoT

Topping the list are as follows:

1. Smart cities

   Smart cities have adopted IoT in traffic management, waste disposal, and even community monitoring for the security of the city's residents.
2. Connected industries

   The oil and gas industry is identified as one of the front-runners for IoT connectivity which includes remote access to heavy equipment and machinery, from manufacturing to production.
3. Connected buildings

   Connected building projects automation to reduce energy costs.
4. Connected cars

   With smart cities adopting IoT for their traffic management, it is no longer surprising for the latest car models to be equipped with sensors and network connectivity. Majority of projects relating to smart vehicles revolve around vehicle diagnostics and monitoring.
5. Smart energy

   Majority of smart energy projects focus on developing smart grids for renewable energy and infrastructure.

Challenges of IoT

1. System requirements

   Industries normally identify different requirements, especially depending on the type of industry they belong to. Those in the food industry may require monitoring of perishable goods, from production and packaging to shipping. An automobile manufacturer may have the same process, but since products are different, requirements may also change. Food will require data regarding temperature levels, whereas cars will require mechanical precision.
2. Connectivity

   With the varying connections wired and wireless, as well as the different protocols governing each connection, it will be a challenge to come up with an IoT project concerning such protocols.
3. Power requirements

   IoT devices need to run on batteries as majority of these devices are mobile. The challenge, therefore, is how to extend the battery life on such devices, especially those used in critical procedures, such as health, disaster management, and safety.
4. Security

   One of the most highlighted issues in the application of IoT is data security. Confidential information such as patients' records or employees' profiles are considered at risk. Security also includes system integrity, with malicious acts such as hacking and viruses proliferating online.
5. Development

   The task of creating IoT projects may seem daunting, so one of the challenges identified is how to expand the capabilities of developers, and not just experts, in order to create more "smart things."
6. Services

   With data collected from IoT, it is important as well to determine where all this will go and to identify the platform in which these IoT applications will be placed. Nowadays, cloud services offer end-to-end solutions to a number of IoT projects.

Automation

With the available technology and standards for computer system interconnection, the demand for system automation Is on the rise. Colloquially called "computerization," having an automated system means automated business processes, operations, service provider, monitoring, and even tools.

- Robotic Process Automation (RPA)

  The Institute for Robotic Process Automation and Artificial Intelligence (IRPAAI) defined robotic process automation (RPA) as "the application of technology that allows employees in a company to configure computer software or a "robot" to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems" (Institute for Robotic Process Automation & Artificial Intelligence, 2018, para. 3).

  - Process Automation

    Process automation may include finance systems such as payroll, customer management systems such as online system registration, and academic institutions offering online enrollment systems, among others.
  - IT Support Management

    If part of the system fails, an automated system can immediately send notifications to the IT manager and technical support staff, informing them of the problem.
  - Automated Assistants

    Apple's Siri is an example of a voice recognition software used in RPAs. Instead of machine language (binary), computers will be able to understand human language and interact with the same. An automated assistant will respond asking for details such as service choices, account numbers, etc.
- Sensors

  Sensors are hardware devices that have the capability to measure an event, object, or any physical quality that is happening. These sensors can be connected to a network, in various ways.

  Sensors can be classified as analog or digital, but below is a list of sensors used in automation:

  - Temperature sensor

    This sensor is capable of measuring temperature as well as detecting its rise or fall.
  - Infrared (IR) sensor

    This sensor often used for security purposes detects infrared light. It is commonly used along with an infrared light source.
  - Ultrasonic sensor

    An ultrasonic sensor detects sound waves, such as how radars and sonars pick up sounds.
  - Touch sensor

    Combining a touch sensor with biometrics, users can now access the content of their phones with just a single touch on the home button.

- Proximity sensor
  This sensor is able to detect objects within a certain range, even if the object is not physically touching the sensor yet.
- Pressure sensor
  A pressure sensor helps determine the weight or impact of a certain object.
- Level sensor
  This sensor can detect the level of liquids, fluids grainy or granular materials, such as powders, etc.
- Smoke/Gas sensor
  This sensor is used to detect the presence of dangerous fumes such as carbon monoxide caused by fire.

The Influence of IT on Culture and Social Behavior

Influence on Culture

Online Reviews

With the proliferation of online information it is easy to find details on a certain movie or a book. However, with different websites, one can actually make a decision on what movie to watch simply by reading the "reviews" of other people. If the review is "good," then the person might watch the movie. But if the review is "bad," then he or she might consider other movies, This trend of having other people do the task first for others watching the full movie and informing people online if the film is worth watching or not is an example of how technology affects the basic human behavior of decision-making.

Weblogging/Social Media

Nowadays, food bloggers post pictures of their meals in restaurants along with a food review. This trend created a culture of people dining with friends or family without actually interacting with them. People would first take pictures of their meal and post it online. Others, during the course of the meal, would even use their phones to update their online status instead of talking to the other people in their group. This is one typical example of technology, in the form of weblogging and social media, affecting social interaction.

YouTube Learners

YouTube is one of the most popular social media sites. People can watch videos, comment on them, and upload the own videos, among others. Thus, YouTube serves as a source of videos with people searching for almost about anything online from trivial topics to more serious subject matter. This to influences the acquisition of knowledge and learning of certain skill sets. Instead of reading books or listening to their teacher class lecture, students would rather watch YouTube to learn, to lesson. Again, this is another situation in which technology after the culture, this time, of learning.

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Influence on Social Behavior

Cyberbullying

Cyberbullying is an unwanted, hostile behavior done by individuals to other people in the hope of gaining control over them.

An internet profile, also called an **internet identity**, **online identity**, or **internet persona**, is a profile created by internet users to establish their social identity in online communities, social media sites, and other websites.

The good news is that the society, communities and the government are devising ways to stop bullying – be it digital or otherwise. The Philippines has identified several laws, including the Cyber Crime Prevention Act, also known as R.A. 10175, to help catch cyberbullies.

But, ultimately, in order to prevent cyberbullying from happening, individuals especially the youth are encouraged to talk to their families and friends in case they experiencing such a situation online. Involving parents and teachers in Young individuals' social media activities such as adding them to Facebook may help, if not, stop cyberbullying as they can also see any untoward incidents happening to these youngsters' online.

Netiquette

Netiquette is a combination of the words internet and etiquette. it describes how one should act online. Netiquette brings in policies for all the features and qualities of the internet, including the use of the World Wide Web (WWW), email services, File Transfer Protocol (FTP), chat rooms, and instant messaging.

- **Netiquette for Social Media**
  Some of the rules of netiquette for social media are as follows:
  a. **The Personalize IT Rule**. Make sure to put restrictions in accepting friends or followers on your social media (e.g., Facebook, Twitter, Instagram, LinkedIn).
  b. **The Off-limits Rule**. Know your limitations when voicing out your opinions on different subjects or topics concerning your school, religion, personal information, workplace, and even some controversial subjects such as politics.
  c. **The Tag, You're It Rule**. Be careful in tagging someone either in your status post or photos. You may also restrict someone from tagging you in their posts and photos.
- **Netiquette for Email Services, Chat Rooms, and Instant Messaging**
  Email services such as sending and receiving an email from someone (professional to personal) anywhere are used in numerous contexts.

- Netiquette for Chat Rooms and Instant Messaging
    a. Think long and hard before accepting a private conversation, especially with someone not on your friends list. Not everyone online may be as they seem to be.
    b. In a group chat, include only those that are in your friends list.
    c. If possible, do not give your personal information while chatting, including your photos or "selfies."
    d. When in doubt, save a copy or make a back-up of your conversation (chat).
    e. You must log out from your account at all times, especially if you are in a public place, such as a computer shop.
    f. You may opt to customize your account settings from public to private account.