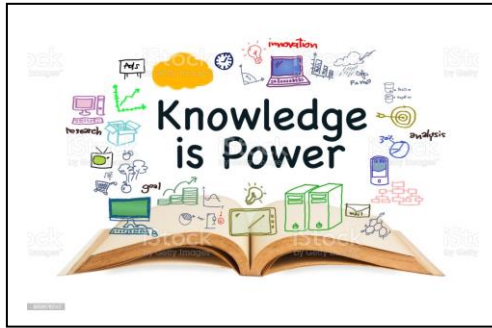


## Aim #25a: How does globalized information and technological changes affect the world?



### Mini Lecture

- Technological advances made the people of the world more interconnected. In some cases, these changes helped countries cooperate for their mutual benefit. International organizations, such as NATO and UN, enabled countries to work together to solve problems. However, **globalization** and massive population growth have led to environmental strain and numerous global tensions.
- Technology has been advancing more rapidly than ever. Ideas can cross the globe in an instant, and this ability has spurred innovation and improvement in transportation, communication, and medicine. Businesses can adapt to consumers' demands more quickly. Governments can respond to crises more effectively. Protesters can organize more powerfully. Technology enabled the world to be more interconnected.
- Closer connections among people meant stronger diplomatic ties among countries and greater trade. Increasing exports created new jobs and economic growth. Increasing imports provided consumers more choices of products and lower prices.
- However, globalization came with costs. For example, huge multinational corporations wielded tremendous power to influence economies and governments. Businesses that could not compete with the new technology & lower wages used in other countries lost out. Countries that had weak regulations to protect workers and the environment often prospered.
- Globalization also placed strains on the environment. Growing food & providing clean water became more difficult, particularly as the world population grew. Some people argued that new technologies could solve the food & water problems.
- The present era of globalized information sharing & commerce is a direct result of technological changes that affect how information is accessed, exchanged, & controlled. These changes had an impact on all aspects of life in the 20<sup>th</sup> & 21<sup>st</sup> centuries, including commerce, transportation, & medicine. Therefore, the power of knowledge & information is of extreme importance.
- As technology allows the world to be more interconnected, access to information becomes increasingly important. The ability to share information easily is vital in bringing far-flung parts of the world close to one another. Individuals & organizations need access to accurate & up-to-date information to make knowledgeable decisions of all kinds.
- An **information system** in an interconnected structure of hardware, software, & networking systems for collecting, processing, exchanging, & controlling data. Computer scientists created & regulated these networks so people could handle interoffice communications, accounting & human resource management. These networks also helped carry out order processing, customer service, & supplier communication, as well as marketing & advertising.
- Information systems have transformed the way people buy & sell goods and services. A business that exists solely on the internet & deals in electronic products is basically a giant information system that includes a group of people to help it run smoothly.
- Other organizations that exist online or include both an online and brick-and-mortar presence combine their information systems with varying amounts of physical locations & goods.
- Information systems also help individuals to perform a variety of activities such as consuming news, conducting research, keeping in touch with friends & family, paying bills, and shopping.
- Though not too information systems are precisely the same, each one uses these similar elements:
  - The **hardware**, physical parts (computer, tablet, keyboard)
  - The **software**, a list of instructions that tells the hardware what to do.
  - The **networking systems**, the parts of the information technology that enables computers to communicate with each other.
  - The **data**, the collection of facts that could be used or analyzed.
  - The **procedures**, the steps followed to arrive at a desired outcome
  - The people, such as software engineers, tech support personnel, & database administrators, are key elements to make information systems efficient.
- One type of information comes from scientific research. In medicine, research combined with aggressive public health efforts dramatically reduce the danger from many diseases. Polio is one of the best examples of the progress in this area following the development of vaccines in the 1950s which led to the eradication of polio.
- The gathering & sharing of data has always been important in helping public health agencies manage infectious diseases. The outbreak of the Zika virus in the Americas in 2015 provides a recent case study. Various agencies' (WHO, CDC) information systems collected, analyzed, & applied lessons from information that combated the Zika emergency outbreak.

### Review Questions:

1. Why is the power of knowledge/information so important today?
2. What are information systems and how have they aided the world?

**Enduring Issue:** Globalization; Interconnectedness; Technology

## Information System: The Zika Virus; A Case Study

**Directions:** Read the following excerpts and answer the questions that follow.

The gathering and sharing of data has always been important in helping public health agencies manage infectious diseases. The growth of sophisticated information systems beginning in the later 20<sup>th</sup> century gave public officials new tools for managing and treating such diseases. The outbreak of the Zika virus in the Americas in 2015 provides a recent case study.

### History of the Zika Virus

The Zika virus was first identified in 1947 in a monkey in the Zika forest in the African country of Uganda. In the following years, researches determined that the virus was carried by certain types of mosquitos. The first human case of zika fever appeared in Uganda in 1952. In humans, zika virus infection most often passed without symptoms. Those people who did exhibit symptoms had fever, rash, headache, and muscular and/or joint pain. These symptoms tended to last no more than seven days.

However, the disease could cause very severe problems, particularly in newborn children. One of these was microcephaly, an abnormal smallness of the head. Babies born with microcephaly also had smaller brains, which could lead to loss, and mild to sever learning disabilities.

Until 2007, only 14 known cases had been identified. In that year, the first widespread outbreak of the zika virus in humans occurred. It happened on the island of Yap located several hundred miles off the coast of southeast Asia. Almost three-quarters of the people on the island were infected with eh disease. More frequent outbreaks then occurred throughout the world.

### Zika in the Americas

In spring 2015, Brazilian health authorities confirmed the presence of the virus in the country. They soon saw an increase in the number of infants born with microcephaly. In November 2015, Brazil declared a national public health emergency.

Outbreaks of zika were reported to the World Health Organization (WHO) which collected data and disseminated it to public health official throughout the world. In February 2016, the WHO declared the threat of microcephaly and other neurological disorders resulting from zika virus infection to be a worldwide public health emergency. Ahead of the 2016 Olympic Summer Games held in Brazil, the WHO indicated that the virus was present in 60 countries around the world, including 39 in the Americas.

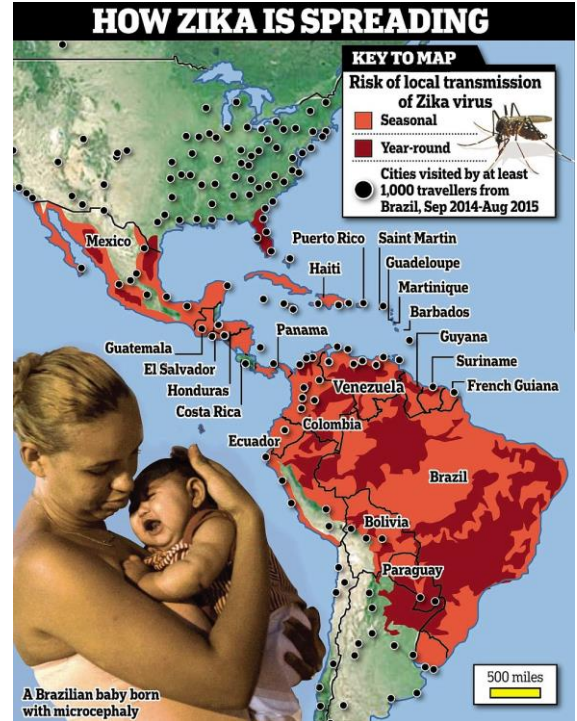
### Information Supported Diagnosis and Treatment

The WHO's information systems provides data to public health agencies around the world, including the Centers for Disease Control and Prevention (CDC) in the U.S. Together, the WHO, the CDC, and other agencies provided information to fight zika. For example, the public health network funded research on new diagnostic tests and possible vaccines. Through websites they shared information:

- They educated individuals on how to prevent transmission of the virus by providing tips on how to avoid mosquito bites.
- They advised women who were pregnant or who were planning to become pregnant to avoid traveling to areas where the virus was prevalent.
- They compiled databases of pregnancies and births among women who had been exposed to the virus or tested positive for it so that they could be tracked and early intervention could be provided for babies with problems.

In November 2016, the WHO declared an end to the public health emergency related to zika. However, the organization also said that it would support countries and organizations in managing the threat from zika on a long-term basis as they would other infectious diseases. Systems run by public health agencies that collected, analyzed, and applied lessons from information would continue to be an important part of this ongoing strategy.

1. How did the Zika virus impact Brazil and its people?
2. How did information systems help in the fight against the Zika outbreak?



## What is globalization? What can a t-shirt reveal about it?

**Directions:** Identify where the clothing you are wearing right now was made in the space below.



1. What materials were used to make your shirt?
2. Where was your shirt made?
3. What materials were used to make your shoes?
4. Where were your shoes made?
5. How do you think what you are wearing became clothing and came to be owned by you?

**Directions:** Read the text below, then watch the [Explainity video “Globalization Easily Explained”](#) and answer the questions that follow.

**Globalization** is the process by which the world is becoming increasingly **interconnected** as a result of **increased trade** and **cultural exchange**. Throughout most of human history, we have become more interconnected through trade and cultural diffusion, but since the mid-1900s the pace of globalization has increased rapidly.

1. What is globalization?
2. According to the video, what technological innovations have made globalization possible?
3. Based on the scenario given in the video, why was the company from country B able to sell their televisions at a cheaper price than companies from country A?
4. Based on the video, identify one positive effect and one negative effect of globalization and explain why each is positive or negative.

**Directions:** Watch [the series of videos from National Public Radio’s Planet Money T-Shirt Project](#) and answer the questions that follow.

In 2013, reporters for the National Public Radio show Planet Money decided to create t-shirts to sell to their listeners so they could follow and report on how the shirt was created from the seed of the cotton to the delivery of the shirt to their office in New York City. They recorded the process and interviewed the people who contributed to creating the t-shirts.

**Globalization** made the creation of the Planet Money t-shirt in these videos a **world-wide process**.

### Part 1: Cotton

1. Where was the cotton for the t-shirt grown?
2. Identify three examples of technology that you see in the process of growing and harvesting cotton.
3. How do you think the technology you identified affects the process of growing and the cost of cotton and the cotton industry?

### Part 2: Machines

4. Identify three tasks that the machines featured in this video complete.
5. What effect do you think these machines have on the process of creating fabric? How might this process have been different before these machines were invented?
6. How is the process in this video similar and different to changes in manufacturing that took place during the Industrial Revolution?

### Part 3: People

7. In which two countries were the t-shirts made? Why do you think the t-shirts were made in these two countries and not the United States?
8. How often does Jasmine work? How much money does she make?
9. Why did Jasmine start working in the garment industry?
10. For a woman like Jasmine, what are the benefits and costs to working in the garment industry in Bangladesh?
11. How is Doris’s life different from Jasmine’s?
12. What is the difference between the effects of the garment industry in Bangladesh and Columbia?

### Part 4: Boxes, Part 5: You

13. Why are containers important to the shipping industry? What effect do they have?

