

Lec 11: Green IT and Essential

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What is green IT?

Green IT (Green Information Technology) is the practice of creating and using environmentally sustainable computing resources.

Green IT aims to minimize the negative effects of IT operations on the environment by designing, manufacturing, operating, and disposing of servers, PCs, and other computer-related products in an environmentally friendly manner. The motives behind green IT practices include reducing the use of hazardous materials, maximizing energy efficiency during a product's lifetime, and promoting the biodegradability of unused and outdated products.

Benefits of green IT

Green IT offers the following social, environmental, and business benefits:

Reduced emissions: Decreasing carbon emissions helps improve the environment. To limit global warming, worldwide emissions must be reduced by 7.6% every year to 2030, according to the United Nations.

Less waste: Reusing and refurbishing IT equipment is a more environmentally friendly and potentially cheaper option for product acquisition. It is also part of the circular economy, which eliminates waste and improves supply chain resiliency. Circular economy models can also involve servitization, where companies sell products as a service and manage the maintenance and end-of-life processes for customers.

Extended maintenance periods: Reusable, green IT products allow for longer maintenance cycles and less frequent device replacement.

Cost savings: Using more energy-efficient technology to reduce energy consumption helps a business reduce its energy bill.

Raised awareness: By using green IT methods and reporting on their use, businesses set an example in their industries and foster collaboration with other companies on climate initiatives.

Improved corporate culture: Green IT demonstrates to employees that they work for an ethical company, which can improve employee morale and retention. Increasing sustainability using green technology also presents opportunities for more efficient working methods.

More sustainable product design: Having green IT goals encourages vendors to design environmentally friendly technologies and approaches.

Improved reputation: Green technology use creates a good public image, improving a company's brand perception.

Increased customer satisfaction and loyalty: Many customers want to do business with socially responsible companies that make sustainability a key part of their strategies.

Challenges of green IT

There are many potential barriers to implementing green IT successfully, including the following:

Cost: The initial cost of implementing new green technologies and programs can be expensive. Revamping old legacy IT systems can also be costly.

Cultural pushback: Implementing green IT can require new ways of working, which might meet internal resistance and create issues with customers and suppliers.

Prioritization: It can be difficult to decide where to start implementing green IT. At every level, IT uses energy, so it can be hard to pick which systems to address first.

Conflicting capabilities: In some cases, technology that appears to reduce emissions can also have a negative environmental impact. Virtualization and artificial intelligence (AI) are examples of technology that can both help and hurt sustainability goals. For instance, AI can provide detailed insight into energy use and other sustainability factors, but AI technology also consumes a lot of energy.

Emerging fields: Some areas of green tech are relatively new and have few best practices. The development of green software is one of these emerging fields.

Data center systems: Organizations commonly seek to use less energy and cut emissions in their data centers as part of green IT efforts.

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