Information Technology Environments

Module 2

Module Agenda

- Introduction to an "IT environment"
- Exploration of how and why the purpose of I.T. affects the environment's design
- Comparison of common IT environments

START

INTRODUCTION OF AN "IT ENVIRONMENT"

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IT Environment

- An IT environment is an integrated collection of technology components that serves the needs of its users and the owner of the resulting system.
  - System − a set of things that work together as part of a greater mechanism
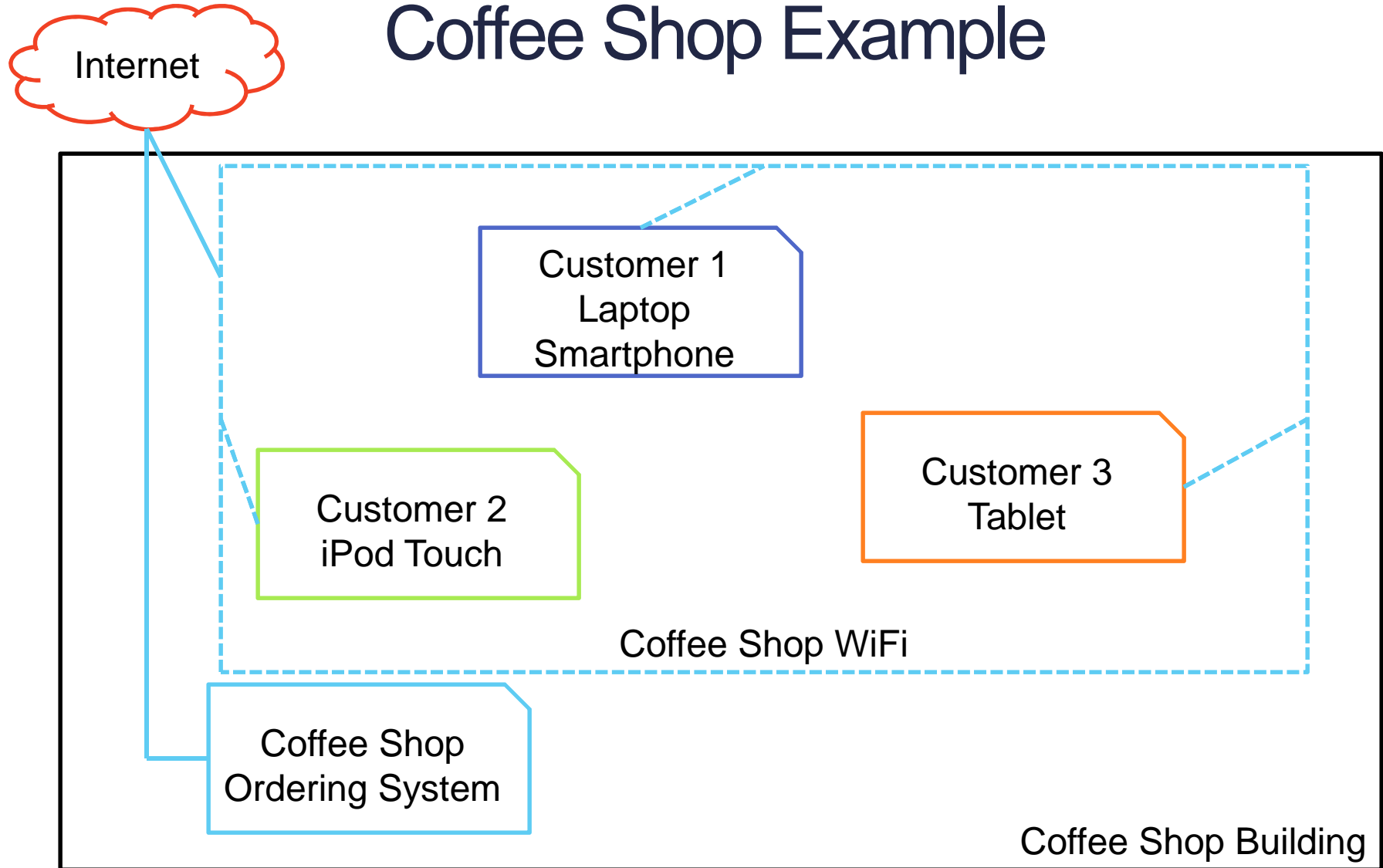
Ownership and Operation

- Owner and Operator need not be the same

- Ownership tends to mean:
  - The one who pays the bills
  - The one responsible legally
  - The one with final authority
  - The one who ultimately should achieve some benefit
    - Examples: Productivity, convenience, customer satisfaction

IT Environments are Interconnected

- An IT environment has a virtual border similar in idea to property lines in real estate
  - Example: School grounds, home and yard, walls of your apartment
- Often common ownership across a set of components is an important quality that distinguishes one IT environment from another

Coffee Shop Example

Internet

Customer 1
Laptop
Smartphone

Customer 2
iPod Touch

Customer 3
Tablet

Coffee Shop WiFi

Coffee Shop
Ordering System

Coffee Shop Building

IT Environment Components

- Computing platforms
- Applications/Apps
- Connectivity (networking)
    - Wireless (WiFi, 3G/4G data services, Bluetooth)
    - Wired (twisted copper pairs, fiber optic)
    - Personal (ex. Bluetooth)
    - Local (ex. Ethernet)
    - Distant (Wide-area – ex. DSL)

IT Environment Dimensions

- Some ways to measure size:
  - Geography
  - Number of computing platforms
  - Variety of technology
  - Footprint
  - Heat produced and power consumed
  - ~~Rules that influence use and operations~~

Start activity 1

INTRODUCTION OF AN "IT ENVIRONMENT"

EXPLORATION OF HOW AND WHY THE PURPOSE OF I.T. AFFECTS THE ENVIRONMENT'S DESIGN

Purpose

- An owner of an IT environment has a reason for investing in IT.

- Reasons are many
  - Home: Be able to manage family finances, do school work, work from home, stream TV shows, purchasing etc.
  - School: Be able to manage curriculum, support student development, access teaching content, enable modern skills development

Different Purpose Different Needs

- Functionality of environment must address the purpose
  - Otherwise its "broken" or wasted money

- Cost of environment must be affordable
  - Otherwise the owner will have to reprioritize other expenses, redesign IT, stop using IT or scale back

- Reliability of environment must be reasonable
  - Otherwise the owner will spend more money on additional technology or find non-technology solutions to satisfy purpose

Different Purpose Different Rules

- Laws and regulations influence how an owner operates their IT environment.
  - Protect employees
  - Protect the environment
  - Protect customers
  - Protect investors
  - Protect public safety
- Owners or their representatives may impose their own rules to ensure purpose is achieved.

Different Purpose Different Choices

- Choices among IT environment options reflect:

  - Owner's needs,

  - Rules that must be met.

- Available affordable technology limits choices

Multiple Solutions Same Purpose

- Each IT environment is a reflection of past technology options and decisions.

- New technology provides new opportunities to meet the same purpose

- Different people will solve the same challenge differently

- Competing technology vendors offer variety in components, each with pros and cons.

- Approaches to designing, implementing and managing I.T. change

Snowflakes

- Expect each IT environment to be different in some way, because of:
  - Owner's history
  - Technology history
  - Different purposes
  - Different needs
  - Different rules
  - Different designers

END

EXPLORATION OF HOW AND WHY THE PURPOSE OF I.T. AFFECTS THE ENVIRONMENT'S DESIGN

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START

COMPARISON OF IT ENVIRONMENTS

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Activity 2 Review

- Question 1:
  - Home and School have users less than 18 years old.
  - Home and School are used for student education

- Question 2:
  - Home:
    - Used primarily for personal uses
    - Work related activities may be for multiple employers possibly using employers' equipment

Activity 2 Review

- – School:
  - Used primarily to serve the mission of the school
  - Personal use by employees may be permitted, but is typically limited to promote productivity and reduce costs resulting from non-essential activities.

- Question 3:
  - – Home: Functionality is nice to have, but if something cannot be afforded then it is given up or postponed or simplified.
    - Unaffordable essential functionality is sought out in other environments (examples: school, library, work, Internet applications)

Activity 2 Review

– School: Functionality needs are prioritized

- Essential functionality is acquired
  - Electronic administration records and transfer to district offices.

- Lesser priority functionality may be purchased if budgets permit
  - eBooks vs textbooks
  - white boards vs smart boards

Activity 2 Review

- ## Question 4
  - Similar:
    - Electricity
    - Skilled personnel
    - Purchasing and maintaining computing technology, software and content
    - Connectivity
  - Different:
    - Amount of money spent by school is higher
    - Quantity and complexity are greater in school

Activity 2 Review

- ## Question 4a:

  - Cannot be answered in general.

    - Affordability is a desired quality
    - Without affordability other bills may not get paid or that some other need is not being met

- ## Question 5:

  - Similar: Everyone using these environments is subject to the same criminal laws.

  - Different: Rules at home may not be written. School rules are written and reviewed by lawyers. Parents and regulations demand schools protect children from risk. Schools write rules to ensure their records are accurate.

Business Environment

- Business size and objectives(s) are major influences on purpose of IT
  - examples: retail, manufacturing, mining

- Our discussion: The business is small with 10 – 20 employees. The business provides a service or manufactures things.
  - Name: AdventuresCo

Operational Business Objectives

- Accounting of revenues and expenses
- Purchasing needed supplies
- Selling services and/or things to customers
- Delivering on their commitments to their customers
- Attracting new customers
- Responding to customer inquiries and problems
- Complying with applicable laws and regulations

Business Needs

- Functionality
  - Marketing
  - Payment management (cash, credit cards, invoices)
    - Inbound (ex. Customers) & Outbound (ex. Vendors, Employees, Banks)
  - Time & Attendance tracking for employees
  - Tax & License management
  - Order management

Business Costs & Reliability

- Technology costs
  - Electricity
  - Personnel
  - Computing, software, content
  - Connectivity

- Possible solutions
  - Internal vs. Outsource
    - website & email services
  - Simple vs. sophisticated
    - Spreadsheet vs. accounting package
  - Manual vs. technology
    - People making calls vs. robo-calling

Business Rules

- Taxes & Licenses
- Federal, state and local laws
- Contracts with vendors and lenders
- Internal policy

END

COMPARISON OF IT ENVIRONMENTS

End of Module 2

- Review
  - We learned about:
    - What IT environments are.
    - How and why IT environments are different.
    - The importance of considering that I.T. is meant to serve a purpose.
    - How purpose influences the rules that apply to I.T.