MCS 2020 Key Terms

Chapter 1

Moore's law – the density of transistors on a computer chip doubles roughly every 20 months, price/performance ratio decreases

IS user responsibilities – protecting the security of the system and data, backing up data, helping recover the system, learning how to employ the system to accomplish your goals

ICT – Information and Communications Technology

Content extraction – target advertising

People – most important part of IS

IT vs. IS – methods, invention, standards and products vs. hardware, software, data, procedures, and people → information

MIS – development and use of IS that achieve business goals and objectives

Five components of IS – Hardware, software, data, procedures, people

Chapter 2

Unstructured decision making process – no agreed-on decision-making method

Strategic decision – broader-scoped organizational issues

Facilities – inventories, databases, factories, equipment

Decision making - Intelligence gathering, Alternatives formulation, Choice, Implementation, Review

Characteristics of good information – Accurate, Timely, Relevant, (to context and subject), Just barely sufficient, and worth its cost

Chapter 3

Activity – transforming resources and information of one type into resources and information of another type

Supporting activity (procurement, tech, HR, infrastructure) – support primary activities (e.g. shipping raw materials, product designing, manufacturing, shipping) in a value chain

Effectiveness vs. Efficiency – doing the right things, and doing things in the right way

Porter's five forces – bargaining power of customers, threat of substitutions, bargaining power of suppliers, threat of new entrants, and rivalry among existing firms

Competitive advantage – ideally sustainable

Backward vs. forward integration – manufacture raw materials (upstream in the value chain) vs. finishing product internally (downstream value chain)

Chapter 4

Horizontal-market applications – software that can be utilized across all industries and organizations. A one size fits all app.

Vertical-market application – serves the needs of a specific industry. For example, dental patient tracking software for dentists.

Clock speed – of a CPU, measured in hertz

Byte – 8 bits of memory

Data channel – moves instructions from main memory into the CPU

Thin client – a web application that can be run within common web browsers

Thick client (native application) – requires a particular OS to run

Memory swapping – memory reclamation method where unutilized data is swapped to the hard drive disk to make memory available for other tasks, OS uses this method so that users can run multiple applications and files simultaneously

Chapter 5

Content Management System (CSM) – tracks and organizes an organization's documents, webpages, graphics, etc. CSMs help with the workflow of changes when an employee wants to change something on a company website, for example.

Key – a column or group of columns that identifies a unique row in a table. Can also refer to a key encryption.

Row – a (singular) record in a relational database

Foreign keys – represent relationships across different tables (i.e. cross-referential)

Table – a group of similar *rows or records*

Metadata – describes the details of the data in question

Database Management System (DBMS) – a program to create, process, and administer a database. Popular DBMSes: DB2, IBM Access, SQL Server, Oracle, and MySQL (open-source, most popular)

SQL – *Structured* Query Language (international standard language)

Database application – enters and retrieves information from the DBMS, a specialized form depending on the department within an organization

Multiuser processing – when more than one user processes information in a DBMS

Lost-update problem – occurs when a DBMS undergoes multiuser processing, and so the data is changed from two users and results in an incorrect value

Personal DBMS – less than 100 users, e.g. Microsoft Access

Chapter 6

Network externality – the larger a network becomes, the more valuable it is

Cloud – elastic (resources, or space, can be increased or decreased dynamically) leasing of pooled (different organizations using the same hardware) resources over the Internet

SaaS – hardware infrastructure, software, OS leased out to a company

PaaS – hosted computers with a loaded OS, and possibly a DBMS

IaaS – cloud hosting, bare server computers

Content delivery network – an IS that delivers content from different geographical locations to users, optimizing for time

Network effects and lock-in – values received increase as the number of users increase

Chapter 7

Business functions – primary and support activities

Functional systems – facilitate business functions, each functional system is specialized to facilitate a specific business function (e.g. HR, Accounting, Operations, Sales)

Functional silos – functional systems that do not interact with each other, in other words, isolated → led to the development of cross-functional/departmental systems

Disjointed systems – functional systems that do not interact with each other, not efficient, higher costs

Enterprise Application Integration (EAI) – the functional systems deliver information to a respective interface, which then delivers it to a server. The functional systems still exist as silos, however.

Enterprise Resource Planning (ERP) – replaces functional systems and has a singular database that connects modules for each business function

Customer Relationship Management Systems (CRM) – support the business processes of attracting, selling, managing, delivering, and supporting customers

Customer Life Cycle – marketing, customer acquisition, relationship management, loss/churn

Supply Chain Management (SCM) – to handle the flow of goods from suppliers to customers

Disintermediation – elimination of one or more middle layers in a supply chain

Chapter 8

Dirty data – problematic data

Data granularity – coarse (too summarized), fine (too precise). It's better to have fine data than coarse data, though, because one can be converted to the other.

Drill down – to further divide the data for increased detail

Data resource challenge – when OLTP reports acquire data, but they are not used to improve decision making

Reporting systems – integrate data from multiple sources, compile into a report, and send to users

Data mining systems – statistical analysis (regression, decision tree) to find patterns and relationships that cannot be found by simpler methods

Market-basket analysis – data mining technique that shows correlations between the types of items customers buy together

Knowledge management (KM) systems – retrieve and store organizational knowledge about practices, products, services, etc. within an organization

Expert systems – encapsulates knowledge from human experts into if/then rules

RFM – how recently (**R**), how frequently (**F**), and how much money (**M**) a customer spends per order = RFM ranking

Data mart – data collection that is created to address a certain need or function

Cluster analysis – analyzes groups of entities that have similar characteristics

Supervised data mining – data miners create a model prior to analysis (in unsupervised, they do not)

Neural networks – a supervised data mining technique that predicts values and classifications, like good or bad prospects

Chapter 9

Crowdsourcing – social media process that employs users to participate in product design or redesign, and customer support to others

Capital – resources that are invested with the expectation of future gain (ROI)

Freemium – basic service is offered for free while a premium is charged for advanced features

Conversion rate – frequency that someone who clicks on an ad actually makes a purchase

Merchant companies – own the title to the goods they sell, they buy goods and resell them

Clearinghouses – provide goods and services at a certain price, and arrange for delivery, but do not take the title (e.g. Amazon)

Electronic exchanges – match buyers and sellers, take a commission from sales (e.g. Priceline)

Disintermediation – removal of intermediaries between parties

Price elasticity – how much demand falls or rises when price changes

Chapter 10

Systems development life cycle (SDLC) – system definition, requirements analysis, component design, implementation, system maintenance

Systems analysis – first two steps of SDLC, creating and maintaining IS

Feasibility – cost, schedule, technical, and organizational

Beta testing – allowing future system users to try out the new system

Pilot installation – entire system is implemented in a limited portion of the business

Phased installation – the new system is installed in phases with each prior phase being tested before continuing

Parallel installation – the new system runs parallel with the old system

Plunge installation – old system is shut down and the new one is installed directly

Waterfall method – a series of steps where one step leads to the other with no returning (a common issue with the SDLC)

Chapter 11

Zachman framework – conceived by John Zachman at IBM in the 1980s, divides systems into two dimensions: six reasons for communication, and stakeholder groups

Alignment – continually ongoing and evolving process of fitting IT architecture to business objectives

Governance – using a committee to decide on expectations and performance, authorize the amount of resources required, and verify if expectations are met

Sarbanes-Oxley Act (SOX) – a law that dictates how publicly held companies compile and send reports

Bill 198 (Budget Measures Act) – law enforcing compliance with standards for collecting, reporting, and disclosing information

Chapter 12

PIPEDA (Personal Information Protection and Electronic Documents Act) – gives individuals the right to know why an organization collects, uses, or discloses their personal information

Security threats – human error, malicious human activity, and natural events/disasters

Pretexting – someone pretends to be someone else (usually a figure of authority) to deceive their target

Phishing – pretexting via email, acquire sensitive personal information by sending an illegitimate email

Spoofing – pretending to be someone else, usually in the context of IP spoofing, or email spoofing (i.e. phishing)

Sniffing – intercepting computer communications, acquire data by reading interactions between devices

Denial of service (DOS) – security problem where users can no longer access an IS, in other words, they become locked out

Technical safeguards – hardware and software protections, they include: ID and auth, encryption, firewalls, malware protection, and design for secure applications

Smart card – a plastic card with a microchip, users require a PIN, and sometimes a challenge-response (a form of authentication using various algorithms)

Spyware and adware – they are both similar in that they observe and record user information, however spyware is more sophisticated in what it tracks

Data safeguards – protect databases and other organizational data

Key escrow – a trusted party is given access to a key to encrypt data in the case that the original is lost

Human safeguards – steps taken to establish appropriate procedures for users to use, organizations must define positions, hire and screen, disseminate and enforce, terminate if required

Hardening – extraordinary measures to reduce a system's vulnerability to security threats

Hot-sites – remote processing centres that may be run by commercial disaster recovery services, like a backup generator

Cold sites – provide space and limited technology for companies to continue to operate in the case of a disaster

Warm sites – somewhere in between hot and cold sites