# *Assignment 4 – Information Systems; Ethics & Privacy*

Date assigned: Wednesday, March 16, 2016

Date assignment due: **Friday, April 1, 2016**

**Learning Objectives**

Upon successful completion of this assignment, the student will be able to:

* Categorize information systems
* Apply the Porter’s Five Forces Model
* Identify a value chain
* Analyze a case study from an ethical perspective
* Analyze a case study from a privacy perspective
* Identify job classifications in the Federal Government
* Identify the main IT trends in Canada

To do:

**Part A – Information Systems: Concepts and Management**

**Create a document called YourUserId\_E01\_A04\_InformationSystems.docx, and save it in the Assignment folder in the 420-E01 folder in your H drive.**

1. The Gatineau Hospital is a modern facility that prides itself on having accurate patient information and well-integrated accounting systems. The hospital is always looking for new ways to use computer systems so that its medical staff can spend more time with patients. The hospital has an up-to-date hardware and software infrastructure using wire-based systems. For each of the following information system types, provide

* a definition of the term
* an example system
* an explanation of how the example system could be used by the Gatineau Hospital.

1. TPS (Transaction Processing System)

-supports the monitoring, collection, storage, and processing of data from the organization’s basic business transactions.

-Store checkout point-of-sale terminal

-Keep track of what kinds of supplies the hospital has in stock.

1. OAS ( Office Automation System)

-typically support the clerical staff, lower and middle managers, and knowledge workers. These people use OASs to development documents, schedule resources, and communicate.

-Microsoft Office

-Document patient information

1. ERP (Enterprise Resource Planning System)

-are designed to correct a lack of communication among the functional area’s.

-Oracle, SAP

-have a database of files containing patient information

1. E-Commerce System

-another type of inter-organizational information system.

-Enable organizations to conduct transactions, called business-to-business (B2B) electronic commerce, and customers to conduct transactions with businesses, called business-to-consumer (B2C) electronic commerce.

1. DSS (Decision Support System)

-provides access to data and analysis tools. Used to support and enhance decision making.

-Help doctors make better choices on the best thing they can do for patients.

1. SCM (Supply Chain Management System)

-manages flows of products, services, and information among organizations.

-Makes sure anyone who needs to know about a patient’s status has access to the information. If someone has digestive issues and are in the hospital for a while and are getting served food there, an SCM can help the people who cook know what an appropriate diet for that patient should be.

1. Characterize each of the following systems as one (or more) of the IT support systems and explain why: TPS, OAS, ERP, E-Commerce, ~~DSS~~, SCM, ~~Expert System~~
2. A student registration system in a college

-Enterprise resource planning system

Registering students requires adding them into a database, something that ERP does

1. A system that advises physicians about which antibiotic to use for a particular infection

-Decision support system

Because the system is in place to help physicians make the right choice for their patients.

-Expert system

Because the system tried to apply knowledge that the physician has to help facilitate the doctor in making a choice.

1. A system that provides a human resources manager with reports regarding employee

compensation by years of service

-Business intelligence system

Helps managers avoid doing a bunch of work digging for employee information to adjust their compensation and does it for them.

1. A robotic system that paints cars in a factory.

-Supply chain management system

Manages where each car is in the assembly line so that everything gets done very systematically and makes sure everything gets done efficiently.

1. Read the following case study, and answer the questions listed below:

Wireless operators, credit card companies, and retailers are working on a technology that allows customers to purchase items by using their mobile devices. For example, a customer could purchase a can of pop by waving or tapping his or her mobile device on the dispensing machine and have the charge for the pop show up on the customer’s cellphone or credit card bill. Working versions are currently in use in Asia and the U.S.

The ability to charge items by using a cellphone has significant business potential because credit cards are not nearly as popular in other countries as they are in Canada and the U.S. In Japan and China, for example, people are much more likely to have a cellphone than a credit card. Japanese consumers use credit cards for only 5.6 percent of their personal spending, compared with 33 percent of North American consumer spending.

The payoff for credit card companies and cellphone operators from this technology could be enormous. By associating a credit card or bank account with a cellphone, banks and credit card companies hope to persuade consumers to buy products, such as pop, with their cellphones instead of pocket change. Of course, the companies will reap transaction fees for each transaction. Cellphone providers see the technology as a way to increase traffic on their networks as well as to position cellphones as an even more useful and, thus, essential device for consumers. Retailers envision easier transactions also leading to more sales.

Mastercard Worldwide is currently using this technology in its PayPass option, and in the U.S. the Bank of America and Citibank have teamed up with Mastercard to place PayPass chips on mobile devices programmed with the user’s credit card information. Consumers can simply tap their cellphone on a special device. At the time this technology was being pioneered, Betsy Foran-Owens, then vice-president for Product Services at Mastercard International, commented that with this technology, “You don’t even have to get off your phone to pay. You can just tap this thing down at the register.” She also noted, “If you’re not going to carry cash around, what are you going to carry? Your mobile phone.”

1. Using Porter’s Five Forces describe the barriers to entry and switching costs for this new technology.

One barrier to entry will have to be an agreement between credit card companies and cellphone companies, so not all companies will have access to these necessarily.

1. Which of Porter’s strategies is this new technology following?

This is a disruptive technology, so it’s exercising the threat of substitute products or services. By combining the two products, they try and force people into buying by making it more of a necessity to have instead of some people only having one or the other.

1. Describe the value chain of using cellphones as a payment method.

Having both a cell phone and a credit card are very useful when you’re an adult, but a lot of people don’t like carrying around their cell phone and their wallet and anything else they use on a regular basis, so being able to carry around only their phone makes this very appealing to buyers. It makes things far more convenient for them, while in turn the companies are making both a cellphone and a credit card far more valuable. It tries to make consumers feel even more need for their product, which turns in more profit for the company.

1. What types of regulatory issues might occur due to this type of technology?

Regulating how people can stop others from using their phone/credit card if it happens to get stolen. Someone can walk right into a store and buy as much as they want without needing to know passwords or anything. There would have to be a cap on how much money you can spend in one purchase to try and diminish how much can be stolen. There’s a lot of things that would have to be regulated.

1. Apply Porter’s value chain to Costco ([www.costco.com](http://www.costco.com)).
2. What is Costco’s competitive strategy?

-To sell as many different things as possible, but not be the best in any one area to attract as wide a variety of customers as possible.

1. Who are Costco’s major competitors in Canada?

-Costco’s biggest competitor in Canada is Wal-Mart

1. Describe Costco’s business model.

Costco makes people pay for a membership, so they can afford to buy more stuff in bulk. Because they can afford bulk, they can lower prices significantly from other stores. So people that buy from Costco might be paying a little bit for a membership every year, but in exchange they get really good prices on everything.

1. Describe the tasks that Costco must accomplish for each primary value chain activity.

They have systems in place like Walmart that keep track of all stock in the stores automatically so that they don’t need to notify suppliers when their stock has run out.

When you buy an item it immediately registers as the store having one less in stock. Suppliers can see at any given point in time how much of their stock is remaining in stores so that when it’s getting low they can have another shipment ready immediately to replace the old stock.

1. How would Costco’s information systems contribute to Costco’s competitive strategy, given the nature of its business?

Because it has so many different products to deal with and because each location is so massive, they have to have dozens of systems set up to constantly track where things are and what is in stock, what needs replenishing, everything is managed through systems. Without having its information systems, Costco wouldn’t be able to manage as many

different products as it has or manage stores nearly as large as the ones that they do.

**Part B – Ethics, Privacy and Information Security**

1. An information security manager routinely monitored the web surfing among her company’s employees. She discovered that many employees were visiting the “sinful six” websites. (These contain material related to pornography, gambling, hate, illegal activities, tastlessness and violence.) She then prepared a list of the employees and their surfing histories and gave the list to management. Some managers punished their employees. Some employees, in turn, objected to the monitoring, claiming that they should have a right to privacy.
   1. Is monitoring of web surfing by managers ethical? Support your answer.

Monitoring of an employee’s browsing history should only be done if the employees are not performing in a way that they should or there’s reason to believe that the employees are using the networks to look at such things. What the company should be doing is just putting up firewalls to stop employees from doing anything they don’t want them to be doing on the internet.

* 1. Is employee web surfing on the “sinful six” ethical? Support your answer.

No, they shouldn’t be accessing those kinds of sites at work, they’d be putting the network at risk if they’re accessing places that are trying to put viruses into the computer or into the network.

* 1. Is the security manager’s submission of the list of abusers to management ethical? Why or why not?

No, it isn’t ethical. They shouldn’t have been spying on the employees browsing history in the first place unless they had good reason to believe that for certain employees it was necessary.

* 1. Is punishing the abusers ethical? Why or why not? If yes, what types of punishment are acceptable?

Should people who are found to be using those kinds of sites at work be punished? Probably. In a situation where someone is spying on the network and recording every person’s browsing history and happens to find something that employees shouldn’t be doing, the employees should receive warnings, but shouldn’t be punished.

* 1. What should the company do in order to rectify the situation?

They should apologize to the employees, stop monitoring the network and instead put up firewalls. Then if they have reason to believe employees are doing things they shouldn’t be doing at work, then they question the employee and give them a warning that they might be subject to monitoring.

1. Read the case study handout titled “WestJet Accepts Blame for Spying on Air Canada” handed out in class, and answer the following questions:
   1. Was WestJet’s access to Air Canada’s Web site information ethical? Was it legal? Explain your answer.

It was neither ethical nor legal. They we’re stealing information from Air Canada and using it to push them out of the market. The employee that had access to the database should have never has access to that account after leaving Air Canada and should never had attempted to access it under conflict of interest from their past employer.

* 1. To what extent do you think unauthorized access to private competitor information is commonplace in organizations?

I think it happens more frequently than most companies would like to admit.

* 1. Does Air Canada have any responsibility in WestJet’s ability to access Air Canada’s private information? Explain.

Yes and no. They should have updated their accounts when the employee left so that they didn’t have access to the database, but that employee should have never taken advantage of the fact that someone in Air Canada didn’t remove them.

* 1. What people measures could Air Canada implement to prevent future unauthorized access to private information?

They could make sure the people who are in charge of database updating are doing their job properly, cause there’s no way that guy should have still had access to the database.

* 1. What technology measures could Air Canada implement to prevent future unauthorized access to private information?

If someone is no longer listed in their payroll, remove their access from the database automatically unless/until they get added back to the payroll.

**Part C – Job Classifications in the Federal Government**

Navigate to the following web page in the Human Resources & Skills Development Canada (HRDC) department of the Federal Government: <http://www30.hrsdc.gc.ca/NOC/English/NOC/2006/Welcome.aspx>

1. What does NOC stand for?

National occupational classification.

1. Select the Occupational Structure link. Under which **3 digit** classification are most of the IT related jobs found (identify both the number and the name of the classification)?

217 Computer and information Systems Professionals

213 Civil, Mechanical, Electrical and Chemical Engineers

1. chnical Occupations in Computer and Information Systems

224 Technical Occupations in Electronics and Electrical Engineering

1. List all the IT related jobs in that classification.

* 2171 Information Systems Analysts and Consultants
* 2172 Database Analysts and Data Administrators
* 2173 Software Engineers and Designers
* 2174 Computer Programmers and Interactive Media Developers
* 2175 Web Designers and Developers
* 2132 Civil Engineers
* 2132 Electrical and Electronics Engineers
* 2231 Civil Engineering Technologist and Technicians
* 2232 Mechanical Engineering technologists and technicians
* 2233 industrial engineering and manufacturing technologists and technicians
* 2234 Construction Estimators
* 2241 Electrical and Electronics Engineering Technologist and Technicians
* 2242 Electronic Service technicians (household and business equipment)

1. Select the Matrix link. What is the skill level required for the classification which contains most of the IT related jobs and what type of education is required for the skill level?

-Most of the IT related jobs are of skill level b and require College diploma.

Navigate to the following web page in the Treasury Board department of the Federal Government: <http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/coll_agre/rates-taux-eng.asp>

1. What is the starting annual salary for a CS1 position, which is where a graduate from the Computer Science program at Heritage would likely start?

The annual starting salary for a CS1 position is around $61500$

1. What is the top annual salary for a CS1 position?

The top annual salary for a CS1 position is $69000

**Part D – IT Job Prospects**

Refer to the following report from the Information and Communications Technology Council, which describes the skills needed and shortages projected in the Canadian technology sector from 2011 - 2016, to answer these questions:

<http://www.ictc-ctic.ca/wp-content/uploads/2012/06/ICTC_Outlook2011_EN_11-11.pdf>

1. What does this report identify as the three technology trends for user industries over the 2011 – 2016 timeframe?

* Cloud computing
* Service oriented architecture
* Outsourcing

1. What are the three most rapidly growing ICT occupations in the 2011-2016 timeframe, according to the report?

* Computer Programmers and Interactive Media Developers
* Computer Network technicians
* User Support Technicians.

1. Which complementary skill (this means non-technical skill) does the report identify as the most difficult skill to find in prospective employees?

* Ability to work as part of a team
* Verbal communication skills

1. What three occupations does this report project that there will there be a significant labor shortage of in Quebec during the 2011 – 2016 period?

* Computer Network technicians
* Some types of Computer Programmers
* User Support Technicians.

1. What four occupations does this report project that there will there be a significant labor shortage of in Ontario during the 2011 – 2016 period?

* Computer and Information Systems Managers
* Information Systems Analysts and Consultants
* Electrical and Electronics Engineering Technologists and Technicians
* Broadcast Technicians.

**Marking Scheme**

|  |  |
| --- | --- |
|  | Marks |
| Part A Question 1 | 18 |
| Part A Question 2 | 4 |
| Part A Question 3 – Credit Card | 20 |
| Part A Question 4 – Costco | 18 |
| Part B Question 1 – Employee Monitoring | 20 |
| Part B Question 2 - WestJet | 20 |
| Part C – Job Classification | 8 |
| Part D – IT Prospects | 14 |
| Organization | 3 |
| Total | **125** |

**To submit**

The following file should be uploaded to Moodle:

* YourUserName\_E01\_A04\_InformationSystems