Level-0 Diagram for Decobike Miami

1.0 Membership Verification

2.0 Credit Authorization & Rate Explanation

3.0 Rental Charge Calculation & Capture

4.0 Map & Inventory Creation

Credit Card Companies

Docking Stations

Credit Card Information

Rental Rate Schedule

Alert of Bike Return

Map of Docking Stations & Available Bikes

Membership Information

Membership Records & Rental Information

Locations of Stations

Bike Inventory at Stations

Membership Confirmation

Rental Schedule

Map of Stations

Locations of Stations

Mapping Service
Homework Part 2:
1. Identify the six hardware categories and place each product listed in the case in its appropriate category.

The six hardware categories are: central processing unit, primary storage, secondary storage, input devices, output devices, and communication devices.

A memory card is primary storage. A laptop is comprised of a CPU, primary storage, secondary storage, input and output devices, and communication devices. A smart phone consists of a CPU, primary storage, input and output devices, and communication devices. An MP3 player consists of a CPU, primary storage, and input and output devices – it may have communication devices if it can connect to the Internet. A memory stick is primary storage.

2. Describe the CPU and identify which products would use a CPU.

The CPU is hardware that interprets and executes software, and tells the other hardware what do to and how to coordinate activity. It's a silicon chip consisting of millions of transistors. It's comprised of the control unit and the arithmetic/logic unit. The control unit interprets software instructions and tells the other hardware devices what to do. The ALU performs arithmetic and logic operations; it responds to directions from the CPU. The laptop, smart phone, and MP3 player would have CPU.

3. Describe the relationship between memory sticks and laptops. How can a user employ one to help protect information loss from the other?

A memory stick is rewriteable ROM that is portable and can be used in any computer. A user can copy data from the laptop onto the memory stick so that in the case that the laptop crashes or is damaged, the memory stick’s contents can be downloaded to a new computer. The memory stick does not lose data when the laptop switches off power.

Homework Part 3

1. Review the five characteristics of infrastructure architecture and rank them in order of their potential impact on the Tribune Co.’s business.

Flexibility – the news media market is changing. The Tribune should be flexible to changing their main delivery system from print to the Internet, including the ability to provide video content and other web-based media. Flexibility of their infrastructure architecture is also important due to their plans to consolidate software across its newspapers.

Scalability – the Tribune is the seventh largest newspaper in the country, and should be seeking to gain greater market share. A move into more web-based delivery will necessitate hosting capacity for potentially millions of users.

Reliability – the importance of system reliability is evident in the significant loss of advertising revenue and failure to deliver the product to a portion of its customer base that the Tribune experienced due to a tiny error in the process of transferring to the new system.

Availability – customers and various employees across the organization need to be able to access the system virtually all of the time in order for customer satisfaction and smooth operations. The company’s move toward having call centers open beyond regular business hours shows they are aware of the critical importance of high availability.

Performance – customers and various employees across the organization will require sufficient performance capacity to meet their needs quickly and effectively. Otherwise, customers will take their business elsewhere, and work processes within the company will slow down, creating costs, respectively.
2. Define backups and recovery. What are the risks to the Tribune Co.’s business if it fails to implement an adequate back plan?

Backups are exact copies of a system’s information; recovery is the ability to get a system running again should it fail, with the information backup restored. The Tribune risks enormous loss without an adequate backup plan. They would lose editorial applications, applications for the physical production and printing of the newspaper, circulation records, classified-ad processes and billing once those applications have been consolidated into a single package – the paper would not be operable, and they would lose advertising revenue and customers.

3. Why is scalable and highly available enterprise architecture critical to current operations and future growth?

The form of organizational growth is difficult to predict – it could be in the form of more customers, more product lines, or expansion into new markets. The ability to build a system scalable to both expected and unexpected growth is important because a system that does not have the capacity to deal with increased demands suffers slowdowns and performance degradations, which increase costs to the business through loss of efficiency, revenue, and loss of its customer base. High availability is important because if customers find your services unavailable frequently, they will seek another service provider.

4. How could the Tribune Co. use a classified ad web service across its different businesses?

Currently each newspaper has its own application for classified ads, and the parent company has to support multiple billing packages and classified-ad programs. They plan to standardize classified ad processes and institute a single billing and ad package to be used by all units. A web service for classified ads would speed this process – the Tribune would not have to design and implement a new application, and individual units would simply standardize sufficiently to use the web service.

Homework Part 4

1. Write a brief pro/con assessment of public sector adoption of cloud computing services.

Pros: continuous, on demand availability – anywhere and anytime. From the public organization’s perspective, very scalable – so long as the service provider has the capability, the organization can increase capacity and bandwidth. Cloud computing is the focus of innovation now – in order to remain technologically relevant, the public sector must implement this technology. Can save costs by minimizing software installation, configuration, updating, and maintenance of infrastructure. Cloud computing can minimize the difficulties of platform differences for various users.

Cons: Costs of migration and deployment. Surrender of control to third-party service providers. Browser-based user interfaces are currently not as refined as operating systems’ user interfaces due to the fact that cloud computing is a new medium. There are issues of privacy, security, and confidentiality. Issues of who owns the data.

2. Provide a technical description of IUanyWare as an implementation of virtualization.

IUanyWare is a client virtualization service that allows eligible users to use a mobile app or web browser to access a variety of IU-licensed software without installation on the user’s mobile or computer. It works by installing software called a virtual machine on a high computational capacity computer on IU’s campus that creates the illusion that there are many computers – which users can access.

3. What circumstances would be required for machine intelligence to be employed as part of public administration? For example, an information system that issues administrative orders in the field of environmental law, or a system that is responsible for sanctions in relation to speeding or financial fraud.
Society would have to weigh the pros and cons of machine intelligence, and evaluate whether the role of public administrators can be well fulfilled by machine intelligence. Machine intelligence with sufficient capabilities could eliminate some of the criticisms frequently levied against bureaucracy and public administrations such as bounded rationality and limited attention problems, and the politicization of decision-making. However, there are major concerns about giving authority that affects people’s well being to machine intelligence that lacks compassion and human judgment processes. Machine intelligence that could simulate human empathy would make the way easier for society to accept the substitution into public administration.