

## **MISC 372 Network Design Project**

### **TransWorld Software Limited, Inc.**

TransWorld Software Limited, Inc., an international trading software development company, has been enjoying double digits sales growth for the last 2 years and has just been purchased by a large company. However, the company will keep its name and continue to develop and market its International Trading Software Systems. Due to the rapid growth, the company has outgrown its current office and there are no spaces available in the building to accommodate the ever expanding of the company personnel. Mr. Higgins, President and CEO, has leased a new office in downtown Spokane and the company will be relocated in three months. Figure 1 shows the temporary layout of the new office.

TransWorld does not have a computer and network support specialist. Computer support is an informal part of duties of software engineers in R&D. Software engineers do computer supports and maintain a peer-to-peer network as part of their duties. With the growing personnel and computing needs, Mr. Morris, Vice President and Head of R&D, has recently hired you as a staff for computer support for the company. Upon knowing your exposure to the data communication and networking in the College, Mr. Morris is giving you a special assignment to design a network for the new office to address the network needs of the Company.

#### **Corporate Organization:**

John Higgins	–	President, CEO and Head of Sales and Marketing
Tim Morris	--	Vice President, Head of Research, Development, and Production
Jane Smith	--	Vice President, Accounting & Administration

#### **Requirements:**

- A cost effective modern network with room to grow. The company will add 10 to 12 people to the existing 16 staff in the next two years. The new office has sufficient office space for this expansion.
- Tim wants to have increased security on the network. He thinks the company should have at least 2 servers: one server for R&D department and the other one for general business and network management. The company need a server managed network to better secure and manage shared resources.
- Jane would like the company to start emphasis on e-support and e-commerce. Currently, the company has a minimal presence on the Internet – a very simple website with company's products and email contact information. The website is hosted on the ISP's web

server. Jane is considering moving the web operations in house and will need a web server, an ftp server, and even an email server on the company's network. TransworldSoft.com is the registered domain name for the company. Jane also wants to equip sale people with notebook computers with wireless networking. The sales reps should be able to stay connected with company's network for software updates, product information, and other latest changes while they are on the road.

- John indicates that the company will add at least three high speed network laser printers: one color and the other two black and white. He wants all employees have access to these printers. John is also concerned with security of the network, there are too many security incidents happened to other companies.
- The company is setting up branch office in Hong Kong, Brazil, and Australia. Each branch office will have a small staff of R& D in charge of localization of the software and a small staff of Sales in charge of market development. The management want your recommendation on using networking technology such as VPN and video conferencing to integrate the R& D and Sales staff in different countries and maintain close contact with sales staff.

### **Deliverables:**

Your task is to a preliminary design of a network that meet TransWorld's stated requirements. You will be submitting

1. A proposed detailed network diagram to the management for discussion.
2. A summary of your proposed network design. The summary should explain the following issues to the management:
  - What are you proposing (explanation of the proposed network)?
  - How does your proposed design meet the business requirements?
  - Which way should the company go? In-house hosting of Internet servers vs. outsourcing these services to ISP.

**\*\*\* Make any reasonable business assumptions to complete the diagram. \*\*\***

**New Office Layout: 150 feet X 150 feet**

