Integrated Distributors Incorporated

Scenario

Integrated Distributors Incorporated (IDI), a publically traded company, has its home office located in Billings, Montana. IDI has more than 3,000 employees in the following locations:

- Billings, Montana, 600 employees
- Sao Paulo, Brazil, 580 employees
- Warsaw, Poland, 975 employees
- Sydney, Australia, 340 employees
- Tanzania, Africa, 675 employees
- Japan, China, and Hong Kong, 700 employees

IDI has accounts with major market retailers, federal governments, and large state governments. IDI operates a fleet of trucks in each country and has network interface agreements with subcontractors for freight forwarding, storage, and delivery.

IDI is responsible for the movement of goods, from multiple manufacturers and distributors to its clients, in a timely and efficient manner using cost-effective methods. Alternatively, IDI may transfer this responsibility to one of its joint ventures (JVs) or strategic alliances (SAs), if it is more cost-effective and the income differential is within acceptable limits.

IDI is also under pressure for several of its competitors in the logistics industry. The competitive market is driving IDI to improve its routes, delivery methods, fleet vehicles, and other facets of its business to increase profits (a strategic goal) and to reduce costs. The company realizes that the information technology infrastructure has been neglected for some time and that many operating locations are running on outdated hardware and software. On several occasions last year, IDI suffered no less than four network compromises through one of its JV Internet sites that led to the disclosure of sensitive and strategic information on contracts and mergers.

The chief information officer (CIO) made a strategic presentation to the board of directors and executive management to first assess the aging infrastructure and then, develop a multi-year phased approach to have all sites (except for JV and SA) on the same hardware and software platforms. Now that the funding has been approved for the infrastructure assessment, the CIO has asked you to update your passport, and buy some new luggage.

Information about the assessment provided to you indicates that the current state core infrastructure (switches, routers, firewalls, servers, and so on) must be capable of withstanding 10-15% growth every year for the next seven years with a three-to-four-year phased technology refresh cycle.

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There is a hodgepodge of servers, switches, routers, and internal hardware firewalls. Your review also disclosed that much (almost all) of the infrastructure is woefully out-of-date in terms of patches and upgrades. This operational neglect has unduly increased the risk to the network, in terms of confidentiality, integrity, and availability. Since this will be a multi-year technology upgrade project, something must be done to reduce IDI's exposure to vulnerabilities to increase the overall security profile and reduce the risk profile.

Your inventory and review of the data center indicated the following requirements:

- 14 Hewlett-Packard (HP) UNIX servers
- Four with operating system 8.5 (one of them is used for application development)
- Four with operating system 9.X
- Six with some version of 11.X (one is used for test and production migration staging)
- 75 Microsoft Windows 2003 servers (equally split between production, test, and development)
- Five application servers
- Five Exchange e-mail servers
- Core applications include the following:
- Microsoft Exchange e-mail
- Oracle financials for accounting and financial systems
- Logisuite 4.2.2 installed approximately 10 years ago, has not been upgraded, however over 350 modifications have been made to the core engine and the support license agreement has expired. Renewing this product will be extremely expensive, and the progressive upgrading to the current version is cost- and time-prohibitive.
- RouteSim, a destination delivery program, is used to simulate routes, costs, and profits. However, it is not integrated into Logisuite or Oracle financials to take advantage of the databases for real-time currency valuation and profit or loss projections.
- IDI has not standardized on the office automation hardware and software. If a manager likes HP, he buys HP whereas another manager may acquire Toshiba. Of the 600 workstations at headquarters, 200 are HP, 150 are Toshiba, 175 are IBM, 50 are Dell, and the rest are Apple PowerBook, although no graphics or computer-aided design (CAD) software is available to maximize the PowerBook.
- Office software ranges from several word processing packages of various vintages, such as Lotus SmartSuite, early versions of Microsoft Office 5, WordPerfect 7.0, and PC-Write. None of the packages is capable of integration with the other, and transferring files often cause corruption when opened in a package other than the original creation.

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- Telecommunication has not been updated since the company moved into its current headquarters 15 years ago. This has left many of the new features for telecommunication lacking and not integrated with the customer service database to improve call management efficiency. The non-descript system was acquired for a service provider that is now out of business and limited spare parts are available.
- Even though polices exist that prohibit the introduction of personal devices, such as BlackBerry or Blueberry, iPods, and iPhones, many of the executives have had local administrators install the clients on their unsupported, non-standard personal laptop computers, and workstations that interface with the Internet. The devices have little, if any, protective measures to prevent exposure and loss of data or network compromise.
- The original wide area network (WAN) was designed by MCI in the early 2000s and has not been upgraded. Several data rate increases have occurred in the Asian offices, and Brazil has been distressed. During peak periods, usually between September and March, the capacity is insufficient for the organization. Many times, the Internet customers are lost due to dropped connections and abandoned shopping baskets, further reducing growth and revenue.
- Telecommunication works through a limited Mitel SX-2000 private automatic branch exchange (PABX) that only provides voice mail and call forwarding.

Sao Paulo, Brazil

While earning frequent flyer miles and increasing your personal growth, your arrival in the Sao Paulo office is followed by many pleasant surprises. You discover that the Brazil office is a model of standardization. The Brazil office has the following setup:

- 30 Microsoft Windows for file and print
- 4 Linux (UNIX) servers for major production applications
- 2 Linux (UNIX) servers with the Internet zone with Juniper high-speed switches and routers
- A storage area network based on EMC CLARiiON
- SAP R/3 (ECC6-Portal based apps)
- Financials
- Materials management
- IBM Lenovo T 600 standard portable computers
- Up-to-date information security policies, although in Spanish
- The telephone system provided by SP Telesis—one of the four competing providers in the metropolitan city
- The NEC NEAX 2400 series PABX used for internal and external communications

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No problems were noted here, but it was good to get out of the office and see the world. Although, two technicians are available for this network, vendors are unwilling to sign service agreements or commit to defined standards for service response. Both technicians are qualified with one being a Microsoft Certified Systems Engineer (MCSE) who has little experience in the WAN environment. The Sao Paulo office is connected to the corporate office through an on-demand virtual private network (VPN) connection with a common six-character password that is used by all office personnel and the shipping and receiving departments. While sitting in the cafeteria one afternoon, you hear one of the technicians discussing increasing the privileges of the shipping supervisor's account. The shipping supervisor claimed that he would be more efficient if he could see inbound receipts based on sales and had privileges equivalent to the general manager. No anti-virus or malware is installed, as hackers have never attacked the location.

Warsaw, Poland

Strategically staged to assist IDI for major growth in the Middle East and Asia, the office in Poland is the home portal for expansion and geographical client development.

Although this is the largest office, based on employees, this office has minimally sufficient computing power to stay afloat on day-to-day activities. The hardware and other networking essentials of this office are as follows:

- 86 Microsoft Windows servers for file, print, and basic network connectivity
- 6 Qantel UNIX servers for major production applications
- S&S, the primary freight forwarding application is about 10 years old and does not interface with the McCormack dodge accounting and finance system
- 6 Web servers (4 are primary and 2 fail during clustered load balancing)
- IBM Infinity hardened server serving as a proxy for the network
- Other infrastructure include 6 Cisco switches to break the department up in to transaction zones– Catalyst 49XX series
- Shipping and receiving
- Internet, with self-service pages for small to medium customers
- Intranet to keep staff trained on various aspects of changing custom laws and regulations
- Global Positioning System (GPS) performance monitoring to control the large fleet of trucks with location transmitters
- A separate access enclave is used for unmonitored access from strategic alliance and JV partners.
- A public wireless network is sponsored in the cafeteria running WPA (Wi-Fi Protected Access) with no password

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- Telecommunication is a Siemens Saturn series Private Branch Exchange (PBX) approximately 8 years old, and some of the features have become faulty. The desktop phones have not been replaced or upgraded during this time.

Mareck, the son-in-law of the shipping director, has the technical responsibility for network operations, information technology (IT) security, and end user computing. Mareck earned his bachelor's degree in horticulture and worked as a hothouse tender before marrying Loueasa, who is responsible for IDI's accounts receivable department. Although the accounts always balance, noticeable period end adjustments seem necessary since Mareck and Loueasa bought their new multi-story home.

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