

Task 4 MMT2 “Shore & More Bicycles”

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## Task 4 MMT2 “Shore & More Bicycles”

### Introduction

Analysis of the company “Shore & More Bicycles” will focus on key aspects of the IT infrastructure that must be in place to support the growth strategy of the company. A gap analysis was done to compare current IT infrastructure and future IT infrastructure needs. In section C the proposal for project upgrade reorganization for the IT infrastructure involved explicit details. In section D reports for management involved a three-year plan, IT infrastructure Human Resource upgrades in IT infrastructure, how the upgrades in IT infrastructure support globalization, and final discussion on emerging technologies the “Shore & More Bicycle” could use to promote new products and services.

A. **Identify 8–10 key aspects** of the IT infrastructure that must be in place to support the growth strategy of the company.

B. **Perform a gap analysis** of the company’s current IT infrastructure and future IT infrastructure needs for the aspects identified in part A.

### Gap Analysis

Aspect - A	Current State	Future State	Gap - B
Payroll	-Meets current company size needs. -Will not be adequate for any future company growth.	-Allows for employee self-report & manager approval of hours worked & vacation time.	-Communication needed with Sara Beresi, CIO regarding future needs for future company growth in payroll integration. -Company strategic goal to Increase the number of staff (as the numbers of bicycles, accessories, and apparel ordered are increased), but maintain or increase worker productivity

			<p>levels to remain competitive.</p> <p>-To meet strategic goal, need to meet the following objectives:</p> <p>Establish job descriptions to target job searches for the specific skills needed to best advance the productivity of the company. Establish at least five educational internships to gather new information from students, evaluate the ability and knowledge of the students &amp; examine their fit with the company. To meet strategic goals:</p> <p>Determine the most innovative educational programs and advertise in those programs for educational interns.</p> <p>- Develop job descriptions to meet strategic goals.</p> <p>-Initiative to Teaching interns and primary school children about the brand.</p> <p>-Need an audit to investigate what type of integration is needed for computer network integration.</p>
3D Engineering Design & Testing	<p>-Cannot share the functioning of the program with other sites; limited to view only via a screen share.</p> <p>-Need to be able to use at multiple sites for collaboration &amp; approvals.</p>	<p>-Allows for single user to design new styles.</p> <p>-Can view designs in 3D.</p> <p>-Can make 3D model on prototype printer.</p> <p>-Can evaluate the limitations of the design on the computer.</p>	<p>-Communication needed with Vincenzo DiLucca, Senior Product Manager for Bicycles regarding the inability to share 3D designs.</p> <p>-To meet strategic goals: Determine which international</p>

			<p>racing events are best to exhibit the bicycles, accessories, and apparel.</p> <ul style="list-style-type: none"> <li>-Communication to management for implementation of computer website networking system with software applications for firewall, encryption, &amp; user access ID security for collaboration amongst multiple company sites with employees.</li> <li>-Need for 3D design software integration with other computers with virtual infrastructure.</li> </ul>
Email	<ul style="list-style-type: none"> <li>-System needs updating to manage increased number of emails &amp; increased amount of filtering for spam.</li> <li>-Storage capacity for messages on the server to avoid missed messages due to filled space.</li> </ul>	<ul style="list-style-type: none"> <li>-Adequate for up to 100 users.</li> <li>-Space &amp; speed are limited by amount of filtering for more than 100 users with average use.</li> </ul>	<ul style="list-style-type: none"> <li>-Communication needed with Kai Garczynski, Call Center Specialist regarding support in email issues.</li> <li>-Need for expansion of email services.</li> <li>- Need for an email server that is centralized to the enterprise system.</li> </ul>
Performance Management	<ul style="list-style-type: none"> <li>-Need a performance management system that can record employees &amp; dealership performance, training, &amp; other categories as needed.</li> </ul>	<ul style="list-style-type: none"> <li>-Human resource records information on a server with access only available at the U.S. headqtrs. Site.</li> <li>-Storage is in company made database that is adequate for the company size.</li> <li>-Dealership training &amp; evaluations are recorded in a</li> </ul>	<ul style="list-style-type: none"> <li>-Communication needed with Larita Soka, Dealership Training Coordinator, because Larita is working with Human Resource director to develop a performance management system for dealership employees.</li> <li>-To meet strategic goals: Develop a</li> </ul>

		database on a standalone machine & not integrated.	performance management system to better analyze productivity and performance. -Initiative to Performance management participation with the goal to measure productivity for each employee. -For database security backup of database need to be stored at different location other than company with secure third party. Data for database need to be encrypted; computers processing such data need software applications for firewall, encryption, & data filtering.
Customer Orders	-Would like to have Internet ordering capacity with monitoring of order status. -Need to have a single system for customer orders to reduce possibility of order loss or duplication.	-Customer orders are made primarily through phone calls or at dealership sites. -Orders are sent via email with a monthly report that is reconciled to ensure all orders are in process.	-To meet strategic goals: Develop online ordering capacity for bicycles, accessories, and apparel. -Company plans to create online system to simulate the appearance of the bicycle to be ordered and any accessories or apparel. -Company plans to develop a system for a customer to follow the bicycle from order to delivery with images of the bicycle at completion stages & timeline for processing. -Then need to network integration

			of Sales/Service's laptop.
Internet Access	<ul style="list-style-type: none"> <li>-System is not robust &amp; connection is lost if one has technical difficulty with modem or router.</li> <li>-Possible noise in the system reduces speed &amp; connectivity.</li> <li>-Cannot support high bandwidth applications on the current level of subscription.</li> </ul>	<ul style="list-style-type: none"> <li>-Current access is through a local provider.</li> <li>-Ethernet is wire from the modem to a switch then to workstations or desktop PCs.</li> <li>-Wireless router is attached to modem for wireless access with password protection.</li> </ul>	<ul style="list-style-type: none"> <li>-To meet strategic goals: Develop online ordering capacity for bicycles, accessories, and apparel.</li> <li>-Communication to management for implementation of computer website networking system with software applications for firewall, encryption, &amp; user access ID security for collaboration amongst multiple company sites with employees.</li> <li>-Company plan to expand orders to internet orders with delivery at a licensed dealership for adjustments to the new owner.</li> <li>-Wireless connections must be with WPA3 for filtering data bandwidth not secure.</li> <li>-The need for universal internet provider for all systems globally.</li> </ul>
Financial Systems	<ul style="list-style-type: none"> <li>-Duplication of reports &amp; lack of integration for analysis is due to inaccessibility.</li> <li>-Backup is to an external hard drive at the site.</li> </ul>	<ul style="list-style-type: none"> <li>-All financial records are documented at headqtr sites on servers that are not accessible from other sites.</li> </ul>	<ul style="list-style-type: none"> <li>-Initiative to New techniques for analyzing data related to marketing campaigns to determine which are most effective at increasing brand recognition in the international and domestic markets.</li> <li>-Communication to management for implementation of</li> </ul>

			<p>computer website networking system with software applications for firewall, encryption, &amp; user access ID security for collaboration amongst multiple company sites with employees.</p> <p>-Need an audit to investigate what type of integration is needed for computer network integration.</p> <p>-The need for centralized server to storing data – have servers but not integrated.</p> <p>-The need for separate backup in different location third party secured.</p>
Employee Computers	<p>-Need to have a computer image for faster set up of computers.</p> <p>-Need remote access by administrator of computer for repairs.</p> <p>-Need security measures.</p>	<p>-Use the operating system that was on the computer when the computer was purchased.</p> <p>-All software is loaded one program at a time for each machine.</p> <p>-No encryption is used for data on the hard drives.</p> <p>-Tech support must physically have the machine for any repairs.</p>	<p>-Communication to management for implementation of computer website networking system with software applications for firewall, encryption, &amp; user access ID security for collaboration amongst multiple company sites with employees.</p> <p>-Need an audit to investigate what type of integration is needed for computer network integration.</p>
Call Center	<p>-Need to determine FAQs for electronic response to frequent questions.</p> <p>-Develop a system that is more efficient &amp; timelier to access</p>	<p>-Current center is limited to 50 seats.</p> <p>-Current waiting time may be as long as 20 minutes for a Customer Service</p>	<p>-Communication needed with Georgianna Cerasoli, Sales &amp; Service Manager (CSR) regarding current waiting time.</p>



	the CSR necessary to answer questions or take order.	Representative (CSR) to get to a customer.	-Communication needed with Nenita Pummilla, Warranty Claims & Service Manager, for support on customer inquiries on warranty claims & improving service plans for customers. -Need for emerging technology of computer voicemail system called WebEx by Cisco. -need for expansion of call center services including faster system access by integrated computer system.

### **-C. Proposal for project to upgrade & reorganize IT infrastructure.**

According to the reading “Who wins in a digital world? Strategies to make your organization fit for the future” (MIT, 2019 chp. 3) the acronym MOST must be communicated to managers and staff for this project proposal. **MOST** can be defined as the following: **M** for mission of Information Technology to provide each employee with the needed technological skills, software, and equipment to be productive, **O** for the objectives of establishing an international and domestic marketing campaign to raise brand awareness, establish job search for specific skills with internships training, and developing safety programs. **S** for strategic plan that will change current technology for more integrated system to achieve business strategy goals by addressing updates by layers of the OSI (Open Systems Interconnection is a framework that describes the functions of a networking system) such the business layer, application & services layer, data layer, and technology layer which all layers develop secure systems and processes. **T**

for tactics necessary for support business operations to improve efficiency, cost effectiveness, service quality, and enhance business development. Proposals for project upgrade will cover four elements for discussions: 1) currently available hardware, 2) currently available software, 3) company need for system support, and (4) emerging technology for later implementation into the proposed system. The four elements for discussion involve the GAP analysis which identified key aspects of the IT infrastructure that must in place to support the growth strategy of the company. In order to do the GAP analysis, I had to use the “Business Analysis Process Model” from the book “Business Analysis” (Yeates,D, 2014, chp, 4) the model took into consideration investigation of current situation, considering perspectives, analyzing the needs – GAP, evaluate options, and defining the requirements. In discussion for element (1) currently available hardware it can be noted in the Technology layer in which the current technology is individualized and lacks integration with company-wide systems. It is necessary to have time-saving techniques for computer set up, network systems, and planning for the IT infrastructure are necessary for company growth. The system need improvement in sharing of computer files and programs which is limited to viewing and not to collaboration. The Gap analysis for hardware indicated for a need of laptop integration to properly address Sales/Service products and need for all computers to be integrated into an enterprise system for networking purposes. (For more details for element (1) see **Gap – B** analysis). In discussion for element (2) currently available software it can be noted in the Applications and Services layer company growth in personnel will render the payroll system unable to function. The IT infrastructure applications requirements are asset management system, a performance management system, a document management system, a web content management tool, a company portal and intranet, a disaster recovery plan, a system for supply chain management and logistics, and a data security system

with secure identity management. Thus, goal for Applications and Services layer is to implement the software and systems that increase the productivity of the employees to increase the competitiveness of the company. The Gap analysis for software indicated software for expansion of email services and needed integration of software for 3D design software with other computers with virtual infrastructure. (For more details for element (2) see **Gap – B** analysis). In the discussion for element (3) company need for system support changes in the IT infrastructure; in support by the business systems layer in which data security and disaster management are high priorities in support system to have secure systems and processes that share data with the financial and innovation teams for analysis, planning, budgeting, and product development; the applications and services layer for support is to implement the software and systems that increase the productivity of the employees in order to increase the competitiveness of the company, (Yeates, D, 2014, chp11) Software support can be attained through documentation creation and storage with secure storage and access with documentation linkage with version numbering.; the data layer shared for support for data to have a secure central location for data storage that is accessed through secure channels for analysis and reporting; and the technology layer support to have universal systems to improve networking, centralized data & application sharing, and increased security of information in all tools in this discussion are expected to result in tactical initiatives to support business operations. And lastly, discussion for element (4) emerging technology for later implementation into the proposed system in that growth of technology is dependent upon the adoption of the technology. Therefore, improved skills related to technology will improve adoption rates and have the potential to improve productivity. Also, further training and performance management are necessary to achieve the return on investment expected through developing the business systems, applications, and services, integrating, and securing

data, and updating technology. The Gap analysis for emerging technologies indication for phone services that can be used on the computer such as WebEx Cisco which can be used universally globally in an integrated enterprise system. It is noted in IT expansion plans for emerging technologies that plan are being considered for the integration of uninterruptible power supplies (UPS) and generators; along with plans to integrate renewable energy systems into the electrical system. (For more details for element (4) see **Gap – B** analysis). Later implementation means building in some room for growth with the recommended hardware, software, and support. All systems would need IT monitoring and management capabilities. How will the technology recommendations be able to continue to support the company as they achieve their growth goals? In the reading “The technology fallacy how people are the real key to digital transformation” (Gerald Kane, 2019, chp. 15) states that there are 3 steps for process for increasing digital maturity of access – understanding where your company need to go, enable – determining how digitally mature your company needs to become today, and mature – you need to determine the improvements are on target to move toward digital maturity. Are there additional features or capacity that can be enabled as needed so that you do not need to come back in a year and replace everything we just implemented? (Gerald Kane, 2019, chp. 15) There are several aspects in accessing the features or capacity enabled: in the initial stages explore your digital efforts, in the developing stage do digital initiatives, maturing stage you are becoming digitally mature, and lastly the company is meeting the goals of being digitally mature. Specific, real-world technologies should be recommended, not just broad categories of technology. Today, I would recommend this company entertaining the idea of sustainable technology for sustainable clothing and for parts and products. For example, the skiing industry as a sport associates their brand to

sustainable technology for clothing, ski products, and other products that can be sustainable to the environment.

#### **D. Reports for Management**

##### **D1. Three-year plan for CTO in ordered sequence.**

1. Employee Computers – **Timeline** to start immediately process should take one to two months and continuously for improvements to the system updates. **Gap analysis** revealed the need for integration into enterprise system to be globally connected with other systems internationally. **Business justification** for need to be integrated with country-wide systems which is necessary for time saving techniques for computer set-up, network system for company growth.
2. Payroll – **Timeline** to start immediately process should take one to two months and continuously for improvements to the system updates. **Gap analysis** revealed the need for computer network integration. **Business justification** with company growth in personnel there is need to be able to function system not currently working.
3. Performance Management – **Timeline** to start immediately process should take one to six months. **Gap analysis** revealed the need to analyze productivity and performance with data encrypted indicated the need for software applications for firewall, encryption, and data filtering. **Business justification** is that infrastructure applications requirements for implemented increase productivity of employees to increase competition.
4. Financial systems – **Timeline** to start immediately process should take one to twelve months and continuously for system updates. **Gap analysis** revealed the need for centralized server for storing data along with the need for separate backup in different location third party secured. **Business justification** for data security high priority for

secure system and processes that share data with financial and innovation with

Performance Management for analysis, planning and budgeting.

5. Internet Access – **Timeline** to start immediately from first month to twenty-four months and continuously for system updates. **Gap analysis** revealed the need to develop online ordering capacity with expansion of orders with delivery status to customer or dealerships. **Business justification** for universal internet provider for all global system with integration with enterprise system current system with local provider for each site.
6. Customer Orders – **Timeline** to start immediately to four months. **Gap analysis** revealed the need to develop online ordering capacity and customer follow-up with the need for network integration of Sales and Service. **Business justification** customer orders are revenue for company. Customer orders should also work in lines with the call center with Customer Service Representative.
7. Call Center – **Timeline** in conjunction with Customer Orders to start immediately to four months. **Gap analysis** revealed the need for expansion of call center service including faster system access by integrated computer system; the current system is lagging in capacity. **Business justification** same as Customer Order which are revenue for company. Call center should collaborate with customer orders for orders, deliveries, and service.
8. 3D Engineering Design and Testing – **Timeline** start immediately to thirty-six months. **Gap analysis** revealed the need for 3D design software integration with other computer with virtual infrastructure. **Business justification** for product design and testing of product before putting such product into the international market. Product is bread and butter for financial revenue.

9. Email – **Timeline** start immediately to thirty-six months. **Gap analysis** revealed the need for expansion of services increasing storage capacity with improving space and speed. There is also a need for an email server that is centralized to the enterprise system. **Business justification** for emails is communication links to customers, dealership, and all employees in the enterprise system.

## **D2. IT infrastructure Human Resource upgrades.**

- **Computer Technicians**

Position requirement for two years combined experience and knowledge in software applications in Networking and Server Administration. Position to be posted immediately after IT proposal is approved. New employees need to be certified in Networking and Server Administration. Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Payroll Analysis Clerk**

Position requirements for three years combined experience and knowledge in software applications in payroll in the prescribed system with IT system software. Position to be posted immediately after IT proposal is approved. The amount of training by orientation to expose new employee to computer system requirement. Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Payroll Manager**

Position requirement for four years combined experience and knowledge in payroll administration and knowledgeable about company's current software applications. Position to be posted immediately for there is immediate need for this position. Training

in Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Performance Management Analyst**

Position requirement for 2 years combined experience and knowledge in Data analysis in performance management and data asset management for productivity and performance analysis with experience in IT software systems software. Position to be posted immediately position needed. Training for Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Financial Analyst**

Position requirement for 2 years combined experience and knowledge in financial data analysis with experience with IT system applications. Position to be posted immediately. Training in Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Business Analyst**

Position requirement 3 years combined experience and knowledge in Internet access, customer service, sales online, and call center services. Position to be posted immediately. Training in Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Email Administrator**

Position requirement 3 years combined experience and knowledge in email server administration. Position to be posted immediately. Training in Human resource orientation training in Code of Ethics and Company policies and procedures.

- **Five Educational Internships**



Position requirement for new interns to be currently in college program of study in Computer Science or Application Development with overall GPA of at least 2.5. New intern to be evaluated on the ability and knowledge to examine their fit with company. Position to be posted after one year of project proposal implementation. Internship duration will be one year. Training in Human resource orientation training in Code of Ethics and Company policies and procedures.

**D3. How recommended Human Resource upgrades in IT infrastructure support globalization?**

Each of the recommended Human Resource upgrades in the IT infrastructure were selected to support globalization to compete globally in the international market. It was pertinent to compete in international and domestic markets. The integrated new network system proposal provided for international suppliers and designs for access to international markets with the competitive price structure. The project upgrades of human resource to promote business growth strategy for international competitiveness to improve opportunities for company international branding. The objective of the human resource upgrade support globalization to raise brand awareness which includes a 10% increase in exhibiting of international raising events along with 15% increase in apparel sales, and 30% increase in bicycle sales. New human resource upgrade to IT infrastructure provides for new techniques for analyzing data related to marketing campaigns to determine which are most effect in increasing brand recognition in global market.

**D4. Emerging Technology**

According to article “An overview of the latest ride changing road bike technology.” <https://fitwerx.com/an-overview-of-the-latest-ride-changing-bike-technology/> in which the article states there are two specific emerging technological innovations for additional bike

product parts which would increase efficiency and effectiveness for the bike rider. These two innovations would enable the company to produce a new product or service to the customers. The first innovation would be new emerging technology of gearing options which provide easier to climb gears integrated into the bicycle in making road bikes much easier for the bike rider to ride climbs with distance and spinning a high cadence much more attainable for many riders who are willing to pay the premium for such a feature. The second innovation be the emerging technology of new electronic shifting integrated into the bicycle to maintain a more consistent cadence and energy expenditure. Also, electronic shifting makes it easier for rider wrists and arms for the long throw is required of the mechanical shift lever is consumed by using the electronic push button. Electron shifting makes it easier for the rider who is willing to pay the price premium.

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