

IT 515: Final Project Guidelines and Rubric

Overview

The final project for this course is the creation of an **Information Technology Solutions Plan**. Industry leaders and innovators implement new technologies and driving innovations at their companies for a variety of purposes. The ability to seek out and critique new technologies based on the adoption and innovation life cycles and then make recommendations for selection, adoption, and implementation is a skill set IT professionals need to possess. You will need to apply this understanding to business cases that reflect the need for innovative technology solutions in today's workplace in order to transform the thinking of an organization when change is required or to develop ideas that enable new business strategies. The final assessment for this course requires that you **research and critique three innovative technologies** that could potentially address the needs of **a given company and scenario**. Once you have chosen the technology you feel addresses the needs of the organization, describe the ideal timing for adopting the innovative technology. Then create a proposal presentation for the integration that includes the impact the integration will have on the organization.

The project is divided into **two milestones**, which will be submitted at various points throughout the course to scaffold learning and ensure quality final submissions. These milestones will be submitted in **Modules Three and Six**. **The final project is due in Module Nine**.

In this assignment you will demonstrate your mastery of the following course outcomes:

- Critique technical innovations for their potential to meet business needs in professional organizations
- Propose plans for the integration of innovative technology solutions that meet organizational and stakeholder needs
- Recommend strategies for adopting innovative technologies based on the phases of the technology adoption life cycle
- Recommend solutions for ensuring ethical and legal compliance and maintain security of innovative technology implementation and use

Prompt

Your Information Technology Solutions Plan should address the following prompt: Given the business case scenario below, you will design an Information Technology Solutions Plan that will address the deficiency in the organization. You will research and critique three innovative technologies that could potentially address the company need, and then select the one you deem to be the best fit for the given scenario.

Background: In the event of devastating natural and man-made disaster events, the loss of critical communication infrastructure is one of the primary barriers to providing quick response to aid the victims of these events. Events such as Hurricane Katrina on the Gulf Coast of the US in 2005, the 9.3 magnitude earthquake and its resultant tsunami in the Indian Ocean in 2004, and the 7.0 magnitude earthquake in Haiti in 2010 that may have killed up to 85,000 people and displaced ten times that figure completely eliminated all means of communication such as telephone land lines and cellular telephone networks. The damage was so severe, even emergency contingency communications were wiped out. This massive devastation to local and regional communications infrastructure in turn hindered relief as efforts to provide and disseminate relief efforts and

supplies, triage victims, and provide other relief efforts such as telemedicine to diagnose and treat victims remotely. Even smaller and more localized events, such as the May 2013 tornado swarm in Oklahoma, can leave the regional communications infrastructure unusable for a time.

United Mobile Response Systems (UMRS) provides integrated solutions for crisis and disaster response organizations worldwide. This small, innovative company is based in the high tech hub of Reston, VA, with its primary mission to support the crisis response community by injecting cutting edge technology solutions to enable its customers to decrease response time and increase overall effectiveness of crisis response operations for these customers. UMRS has a robust Business Development and Marketing (BDM) Team, which is largely made of former crisis response professionals with experience in the Federal Emergency Management Agency (FEMA), Humanitarian and Disaster Relief (HADR) efforts with the US military and the United States Coast Guard (USCG), and local emergency management. This team has been surveying and interviewing government disaster response personnel as well as analyzing and responding to recent Requests for Information and Market Surveys that have been released by various US and international organizations, including FEMA and the international relief organization UNICEF. Their analysis has concluded that a viable and profitable market exists to develop a mobile communications solution that can address the major requirements for re-establishing a viable communications capability in regions where the infrastructure no longer (or possibly never did) exists and have been working with Engineering and Integration (EI) Team to develop what could be UMRS' signature offering.

The primary requirements for this product are:

- Mobility - must have a Mobile Command Center housed in a ruggedized vehicle with at least a 14 inch clearance and 300 mile range before refueling and capability of onboard power generation to support the communications solution - once in place, the MCC would serve at the base and central location for relief efforts and would in most cases be co-located with central relief coordination efforts - to extend range from the MCC, other communications devices would be deployed that complement the MCC
- Data - must be capable of at least transmitting voice with a preference for also transmitting data, as it is important to be able to send and receive sensitive health data to and from the MCC
- Range - must be able to extend the communications range beyond the mobile command center within a 10 mile radius with an option and preference for being able to provide communications external to the MCC if they exist at that range (connect to other MCCs)

UMRS Engineers have already identified a viable solution for providing the vehicle for the MCC that meets requirements. They have agreed to purchase modified versions of the rugged military HUMVEE from AM General, based in South Bend, IN, as the platform for the MCC. This version cuts cost by removing the requirements for protective armor, thus reducing weight and extending the maximum range. In addition, the vehicle has onboard power generation capability of 2400W max, more than enough to run a small server farm or other electronic devices if needed. This vehicle can carry a payload of 3500 pounds and has 250 cubic feet of open area in the rear.

Problem: Instead of developing the communications solution in-house, the Engineers and BDM team have decided to acquire and integrate a communications solution in conjunction with the MCC vehicle. In addition to the data and range requirements above, reliability is an important factor in disaster relief; however, reliability may be balanced by other factors such as extending range or other capabilities. Cost is an important factor as potential customers will be evaluating this solution against other candidates; that said, anticipated competitions for these vehicles are believed to judge candidates by Best Value, so cost that adds significant value in improving disaster relief communications efforts would be acceptable and would be considered. The solution may be a single product or an effort that integrates multiple products with minimal additional effort required for integration to minimize unit costs. UMRS hopes to bring this complete product to market within five years.

Specifically the following critical elements must be addressed:

- I. **Background:** What is the need or challenge of the organization? What are potential ways to address that need or challenge? How can it be improved?
- II. **Research and Critique**
 - a) What are three **innovative technologies** that can be used to address the needs of the organization? How do the technologies address the need?
 - b) **Assessment:** What is the cost? What does implementation involve? Who/what will benefit? Which stakeholders will be affected by a new technology adoption? What supports for implementing new technology will be necessary for stakeholders? Is this a cost-effective solution? Be sure to comprehensively address each component of the assessment for each of the three innovative technologies.
 - c) Determine which technology, from the three you have researched, best meets the organization's needs and defend your **selection**.
- III. **Adoption and Strategies Proposal**
 - a) What phase in the technology life cycle is the technology chosen in? What would be the **ideal timing** for adopting this particular technology?
 - b) Based on the technology adoption models, determine the possible **timelines** of adoption that could be implemented. Which adoption timeline will best fit the needs of the organization? Be sure to provide details to support your choices.
 - c) What **variables** affect the timing and implementation of new technologies? What processes can be put in place to ensure smooth adoption?
- IV. **Implementation Process**
 - a) Create an implementation **plan** for integrating the technology chosen to address the organization's needs. What are the goals that the plan supports? What steps will be taken? How will this affect other processes currently in place? How will information about the changes get communicated?
 - b) Which **stakeholders** will need to be included in these processes to ensure the integration is thorough? What are some potential stakeholder needs? How will you ensure that potential needs can be met going forward?
 - c) Make recommendations for ensuring **ethical** compliance during implementation and use of the new technology. What guidelines or codes of ethics are relevant to the new technologies?
 - d) Make recommendations for ensuring **legal** compliance for the implementation and use of the new technology. Based on information assurance models, what steps would be taken to ensure a smooth and compliant transition?

- e) Make recommendations for ensuring the **security** of new technology implementation and use. How will you protect personal and business data in the transition?

Milestones

Milestone One: Background and Research and Critique

In **Module Three**, you will submit the background for the problem and your research and critique of three innovative technologies that have the potential to address the specific business scenario identified for the final project. You will identify the technologies that you considered, document the advantages and disadvantages of each technology relative to the business scenario, identify which technology you have selected for the scenario, and provide justification for your selection. Your submission should include the critical elements from sections I and II above. **This milestone will be graded using the Milestone One Rubric.**

Milestone Two: Adoption and Strategies Proposal

In **Module Six**, you will submit your Adoption and Strategies Proposal for the innovative technology that you selected and documented in Milestone One. You will identify different adoption timelines and strategies that can be applied within the business scenario and justify the adoption timeline and strategy that your analysis indicates is the best option for the business scenario. Your submission should include the critical elements from section III above. **This milestone will be graded using the Milestone Two Rubric.**

Final Submission: Information Technology Solutions Plan

In **Module Nine**, you will submit your **Information Technology Solutions Plan**. It should be a complete, polished artifact containing **all** of the critical elements of the final product. In an effort to augment your final submission, it should reflect the incorporation of feedback gained throughout the course, specifically the feedback received on Milestones One and Two. Your submission should include the critical elements from section IV above. **This milestone will be graded using the Final Product Rubric.**

Final Product Rubric

Guidelines for Submission: The Information Technology Solutions Plan must follow these formatting guidelines when applicable: double spacing, 12-point Times New Roman font, one-inch margins, and discipline-appropriate citations. Length: At least 16–19 pages, not including cover page and resources.

Critical Elements	Exemplary (100%)	Proficient (90%)	Needs Improvement (70%)	Not Evident (0%)	Value
Background	Meets “Proficient” criteria and uses industry-specific language to establish expertise	Explains the need or challenge of the organization and describes potential ways to address the need or challenge in the organization	Explains the need or challenge of the organization but does not describe potential ways to address the need or challenge in the organization	Does not explain need or challenge of the organization	5
Research and Critique: Innovative Technologies	Meets “Proficient” criteria and credible research from the field was used to inform decision making	Suggests at least three innovative technologies, based on research, that address the need of the organization and describes relative information for implementation and cost	Does not suggest at least three innovative technologies relevant to organizational needs or lacks description of relative information for implementation and cost	Does not suggest innovative technologies	9
Research and Critique: Assessment	Meets “Proficient” criteria and credible research from the field was used to determine supports needed	Indicates stakeholders that will be affected by a new technology adoption and provides research related to the kind of supports needed for stakeholders when implementing a new technology	Indicates stakeholders that will be affected by a new technology adoption but does not provide research related to the kind of supports needed for stakeholders	Does not indicate stakeholders that will be affected	9
Research and Critique: Selection	Meets “Proficient” criteria and explains why the chosen technology is superior to alternative options	Determines which technology best meets the organization’s needs and defends the selection	Determines which technology best meets the organization’s needs, but does not defend selection, or defense is not based on appropriate research	Does not determine which technology best meets the organization’s needs	9
Adoption and Strategies Proposal: Ideal Timing	Meets “Proficient” criteria and uses industry-specific models or language to establish expertise	Describes the phase of the technology life cycle with respect to where the technology is situated and whether timing is optimal	Describes the phase of the technology life cycle but does not address where the technology is situated or whether timing is optimal	Does not describe the phase of technology life cycle	9

Adoption and Strategies Proposal: Timelines	Meets “Proficient” criteria and cites industry-specific models that inform decision making	Evaluates possible timelines for adoption based on the technology adoption models and describes the timeline that meets company needs, providing evidence to support claims	Evaluates possible timelines for adoption and describes the timeline that meets company needs, but does not provide evidence to support claims or is inaccurate	Does not evaluate possible timelines for adoption and does not describe the timeline that meets company needs	9
Adoption and Strategies Proposal: Variables	Meets “Proficient” criteria and uses industry-specific language as appropriate to establish expertise	Explains variables that affect the timing and implementation of new technologies and processes that need to be put in place to ensure smooth adoption	Proposes strategies for the ideal adoption timeline for the technology, but lacks specific variables that affect the timing and implementation of new technologies and processes that need to be put in place to ensure smooth adoption, or information is inaccurate	Does not propose strategies for ideal adoption life cycle and does not describe variables that affect the timing and implementation of new technologies and processes	9
Implementation Process: Plan	Meets “Proficient” criteria and includes graphics or visual aids to clarify components of the plan	Creates a comprehensive implementation plan for the technology chosen to address the organization’s need	Creates an implementation plan to address the organization’s need but does not address all components or lacks clarity	Does not create an implementation plan for the technology chosen	8
Implementation Process: Stakeholders	Meets “Proficient” criteria and ideas in the explanation are innovative and realistic	Describes stakeholders that will need to be included in these processes to ensure the integration is thorough and needs can be met going forward	Describes the stakeholders, but does not address how needs will be met going forward or information provided is not accurate	Does not describe stakeholders	8
Implementation Process: Ethical	Meets “Proficient” criteria and bases explanation on industry established best practices for ethical compliance	Makes recommendations for ensuring ethical compliance during implementation and use of the new technology based on compliance standards	Makes recommendations for ethical compliance but does not base claims in compliance standards or recommendations lack detail or clarity	Does not make recommendations for ethical compliance	7
Implementation Process: Legal	Meets “Proficient” criteria and refers to specific laws and regulations that apply to the process	Makes recommendations for ensuring legal compliance in implementing and using the new technology, including steps necessary to ensure a smooth and compliant transition	Makes recommendations for ensuring legal compliance but does not include steps that need to be taken to ensure a smooth and compliant transition or the recommendations lack clarity or detail	Does not make recommendations for ensuring legal compliance	7

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Implementation Process: Security	Meets "Proficient" criteria and cites specific policies and models that apply to the process	Makes recommendations for ensuring the security of new technology implementation and use related to protecting personal and business data in the transition	Makes recommendations for ensuring the security of new technology implementation but does not address protecting personal and business data during the transition or recommendations provided are not appropriate	Does not make recommendations for ensuring the security of information	7
Articulation of Response	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy-to-read format	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	4
Earned Total					100%