

## **MPTM 650 – Final Project**

### **Big Data Analytics Proposal**

#### **Goal**

You will develop a Proposal for a Big Data Analytics implementation project in your organization or one approved by your instructor. It will be written for delivery to organizational leadership and will incorporate elements developed during the course.

#### **Overview**

The purpose of the Proposal is to put forward, explain and justify a Big Data Analytics implementation project. As you will see below, you will select an organization that could make use of big data analytics – either one with which you are familiar or another that you select, as long as it is not included in the course materials and has been approved by your instructor. Keep in mind that the implementation must address the use of "big data" as defined in the course, and not simply be the implementation of a business intelligence capability.

A complete and formal request for project approval would contain much more information and detail than we have time to compile during this course. The major requirements would be determined, some preliminary investigations into potential solutions would be conducted, and the schedule and cost would provide more specific information. The proposal you will develop could be considered a "preliminary" request to pursue a project to develop a complete and formal business case and request for approval of the organization to implement a big data analytics program.

Your proposal will include such things as the benefits and risks, the types of technologies and tools that will be needed, and managerial considerations. The sections of this proposal will be developed progressively over the duration of the course, culminating in an oral, professional Proposal Presentation with an accompanying PowerPoint presentation deck and a detailed, written Proposal, which will address all of the following:

- Executive Summary
- Introduction
- Justification
- Benefits
- Data sources
- Technologies and Tools
- Graphic
- Technology Selection
- Cost Assessment
- Timeline/Implementation Roadmap
- Managerial Considerations:
  - Data Governance

- Organizational Impacts
- Ethical and Legal issues
- Summary and Recommendation

The steps below describe how you will develop your big data analytics proposal over the course of the next several weeks. It is strongly suggested that you create an outline of the Project and insert draft sections as they are developed throughout the class. Some sections will be developed as assignments, others as discussion postings. Any feedback received from the instructor should be included. Feedback from classmates may or may not enhance your final paper, but should be considered. You may also incorporate ideas and approaches used by classmates in their discussion postings, but do not copy their work. Part of the purpose here is to learn from each other and develop well thought-out proposals.

The sections will not be developed in the sequence they are listed for the Final Project, but will follow the outline of the course material. Your Final Project submission at the end of class should flow smoothly from start to finish and include all sections listed above.

Discussions and Assignments that contribute to the Final Project are summarized here to show how they fit into your Final Project. Be sure to follow the specific instructions for discussions and assignments that are provided in the course weekly content areas.

## **STEP 1**

**Due Week 2**

### **Develop and Post Your Case Proposal**

Using a discussion posting, you will identify the organization you have selected for your Final Project. (1) The organization can be one where you currently work or previously worked, or you may select another organization that would benefit from a big data analytics capability. If your organization currently uses big data analytics, and you want to use that for your project, briefly explain how it is currently being used and what enhancements or expansion you would propose and why. (2) Briefly justify the reason for your selection on the basis of how a big data analytics implementation would benefit multiple units within the organization.

Keep in mind that the implementation must address the use of "big data" as defined in the course, and not simply be the implementation of a business intelligence capability.

Your instructor will provide feedback on your Case Proposal and whether it has been approved. Feedback from classmates should be considered and incorporated as appropriate as you develop your Final Project.

## **STEP 2**

**Due Week 2**

### **Assignment – Data Visualization Exercise (10% of final grade)**

In Week 2, you will submit your Data Visualization Exercise Assignment. Although the graphic and assignment are not directly included in the proposal, you should incorporate feedback received, as applicable, in your Final Project.

**STEP 3****Due Week 3****Develop and Post Your Data Sources**

Using a discussion posting, you will identify potential sources of data for your Big Data Analytics implementation. In this discussion post, identify what sources of structured data you are considering, the type of data they contain and their structure.

Incorporate feedback from your instructor as you develop the Data Sources section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 4****Due Week 4****Develop and Post Your Social Media Data Sources**

Using a discussion posting, you will describe what business problems can be solved with data from social media sources.

Incorporate feedback from your instructor as you develop the Data Sources section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 5****Due Week 4****Develop and Post Your Timeline/Implementation Roadmap**

Using a discussion posting, you will create a timeline/implementation roadmap, in Gantt chart form, for implementation of your proposed big data analytics project. You will include at least 10 steps or milestones that reflect the key project phases from concept through implementation. Some of the milestones should demonstrate that this is a big data implementation, and not just any IT implementation; i.e., include steps that are specific to a big data analytics implementation.

Incorporate feedback from your instructor as you develop the Timeline/Implementation Roadmap section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 6****Due Week 5****Develop and Post Your Data Governance Structure**

Using a discussion posting, you will describe the data governance structure needed for a successful implementation of your proposed big data analytics implementation. Consider the implications of using big data (rather than simply data from organizational systems) and what that means in terms of data governance.

Incorporate feedback from your instructor as you develop the Data Governance portion of the Managerial Considerations section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 7****Due Week 6****Develop and Post Your Business Value of Big Data Discussion**

Using a discussion posting, you will explain how a big data analytics capability would support the organizational strategy and identify 3 organizational units that would gain benefit from the project and the types of benefits they should expect.

Incorporate feedback from your instructor as you develop the Justification and Benefits sections of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 8****Due Week 6****Assignment – Technology Tools and Selection Paper (5% of final grade)**

In Week 6, you will submit your Technology Tools and Selection Assignment. It will include the types of technologies and tools that would be required, and the role each plays in the analytics ecosystem. It will also include technologies currently in place that will become a part of the overall solution (such as data warehouses, data marts, etc.) and emerging technologies that could be of benefit to the organization. Finally you will provide an explanation of the Technology Selection process and who would be involved.

Incorporate feedback from your instructor as you develop the Tools and Technologies and Technology Selection sections of your Final Project.

**STEP 9****Due Week 7****Develop and Post Your Managerial Considerations**

Using a discussion posting, you will describe (1) the organizational impacts of analytics applications, or (2) the major ethical and legal issues of analytics implementation.

You should review what you learned from your research and what classmates post as you develop your Final Project section on Managerial Considerations, where you will address both areas of considerations above. Incorporate feedback from your instructor as you develop the Managerial Considerations section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

**STEP 10****Due Week 7****Develop and Post Your Cost Model**

Using a discussion posting, you will explain how the cost of your proposed implementation will be determined, and provide an explanation of the cost assessment process, who would be involved, and what the major cost drivers are for a big data analytics implementation in the organization.

Incorporate feedback from your instructor as you develop the Cost Assessment section of your Final Project. Feedback from classmates should be considered and incorporated as appropriate.

## **STEP 11**

**Due Week 7**

### **Develop and Post Your Business Presentation Pitch (10% of final grade)**

The Business Presentation Pitch is an Executive-level presentation summarizing your Big Data Analytics Proposal. It is a separate assignment from the final written proposal, but is included here as a reminder that it is due in Week 7.

## **STEP 12**

**Due Week 8**

### **Submit your Big Data Analytics Proposal (25% of final grade)**

#### **Goal**

You will develop a Proposal for a Big Data Analytics implementation project in your organization or one approved by your instructor. It will be written for delivery to organizational leadership and will incorporate elements developed during the course.

#### **Purpose**

The purpose of the Proposal is to put forward, explain and justify a Big Data Analytics implementation project.

#### **Format**

Your paper should be 10-12 pages, double-spaced (not counting a cover sheet and references page) and should be in Word format (not PDF). You are to write this proposal for approval by the CEO as if you were the Chief Information Office/Senior IT Manager of the organization. This paper must be structured with the information listed below, much of which has been developed during the course.

Your proposal will address all of the following:

- **Executive Summary** (one page maximum). An executive summary is a short section that precedes the proposal or business case. It is presented on a separate page by itself. It is typically directed at senior-level managers who sometimes make decisions based on the reading of this summary alone. Therefore, the executive summary must be both concise and comprehensive. It should present in summary form all major sections of the report, such as: purpose, problem, methods of analyzing the problem - or the major sections included (benefits, risks, etc.), and recommendations. The executive summary must be designed so that it can be read independently of the main document, but it does not include details, diagrams or tables; uncommon terminology, symbols and acronyms should be avoided. If the executive summary is sufficiently persuasive, it can cause the entire proposal to be read or may result in a decision based on that information alone.

- **Introduction.** Create a brief Introduction that identifies the organization and its mission, size, and any other pertinent information that would lead to a need for a big data analytics capability. (Since the paper is for delivery to the CEO of the organization, the introduction should be written appropriately for that audience.) Incorporate feedback received on your Week 2 Case Proposal.
- **Justification.** Write a clear and succinct statement that justifies the implementation of a big data analytics capability for the selected organization, including an explanation of how your proposal supports the organizational mission and strategy. Incorporate feedback received on your Week 6 Discussion Posting on the Business Value of Big Data.
- **Benefits.** Develop and provide the detail to express the benefits of such a capability for the organization. Include benefits for a variety of the organizational units and stakeholders (Human Resources, Marketing, Operations, Research and Development, Sales, Manufacturing, Finance, etc.). Incorporate feedback received on your Week 6 Discussion Posting on the Business Value of Big Data.
- **Data sources.** Identify the types of data sources that would provide data to the analytics implementation. Include both structured and unstructured data, data sources within the organization and from social media. Incorporate feedback received on your Week 3 Discussion Posting on Data Sources and your Week 4 Discussion Posting on Using Social Media.
- **Technologies and Tools.** Describe the types of technologies and tools that would be required, and the role each plays in the analytics ecosystem. This should include technologies currently in place that will become a part of the overall solution (such as data warehouses, data marts, etc.). It should also include emerging technologies that could be of benefit to the organization. Incorporate feedback received on your Week 6 Technology Selection assignment.
- **Graphic.** Incorporate at least one graphic to demonstrate the business value of visualization tools. (This does not have to be an original graphic, just an illustration of what is possible, with a short explanation of why such a representation would be valuable to the organization.) Incorporate feedback on your Week 2 Visualization Assignment.
- **Technology Selection.** Provide an explanation of the Technology Selection process and who would be involved. Incorporate feedback received on your Week 6 Technology Tools and Selection assignment.
- **Cost Assessment.** Provide an explanation how the cost of your proposed implementation will be determined, including an explanation of the Cost Assessment process, who would be involved and what the major cost drivers are. Incorporate feedback received on your Week 7 Cost Model discussion posting.

- **Timeline/Implementation Roadmap.** Using a Gantt chart format, create an implementation timeline/roadmap for the project that contains a minimum of 10 steps/milestones that reflect the key project phases from concept through implementation. Include a short description of the scope of work for each major phase of the project, and the organizational groups that would be major participants for each phase. Incorporate feedback received on your Week 4 discussion posting on Implementation Roadmap.
  
- **Managerial Considerations.** Identify the areas that should be considered and what steps the leadership team should take to ensure a successful implementation, including the three areas below:
  - **Data Governance.** Address data governance: What is the data governance structure at the organization? How should it change to effectively manage a big data analytics implementation? If one does not exist, what data governance structure would you propose and why? Who/what parts of the organization should participate and in what roles? Incorporate feedback received on your Week 5 discussion posting on Data Governance Structure.
  - **Organizational Impacts.** Address the organizational Impacts of implementing analytics applications and capabilities, incorporating information included in and feedback on the Week 7 Discussion on Managerial Considerations regarding organizational impacts.  
And,
  - **Ethical and Legal issues.** Describe the major relevant ethical and legal issues of analytics implementation, incorporating information included in and feedback on the Week 7 Discussion on Managerial Considerations regarding legal and ethical issues.
  
- **Summary and Recommendation.** Provide a Summary and "call to action." This section should summarize your proposal and encourage the decision-maker to take action on your recommendation.

## Project Plan

**NOTE:** This plan addresses ONLY the Final Project and its components; other class assignments and discussions are not included and are to be completed according to the schedule.

Week 1	Download and carefully read the instructions for the Final Project, create an outline, and plan your work.
Week 2	<b>Develop and Post your Case Proposal</b> for approval by your instructor.  <b>Submit Assignment – Data Visualization Exercise</b>
Week 3	<b>Develop and Post Your Data Sources</b> for your Big Data Analytics implementation.
Week 4	<b>Develop and Post Your Using Social Media Data Sources</b> describing what business problems can be solved with data from social media sources.  <b>Develop and Post Your Implementation Roadmap</b> , including at least 10 steps or milestones.
Week 5	<b>Develop and Post Your Data Governance Structure</b> describing the data governance structure needed for a successful implementation of your proposed big data analytics implementation.
Week 6	<b>Develop and Post Your Business Value of Big Data</b> discussion explaining how a big data analytics capability would support the organizational strategy and identifying benefits.  <b>Submit Assignment – Technology Tools and Selection Paper</b> , describing the types of technologies and tools that would be required, and the role each plays in the analytics ecosystem, as well as how they would be selected and who would be involved.
Week 7	<b>Develop and Post Your Managerial Considerations</b> , describing (1) the organizational impacts of analytics applications, or (2) the major ethical and legal issues of analytics implementation.  <b>Develop and Post Your Cost Model</b> , explaining how the cost of your proposed implementation will be determined, and provide an explanation of the cost assessment process, who would be involved, and what the major cost drivers are.  <b>Develop and Post Your Business Presentation Pitch</b> , summarizing your Proposal.
Week 8	<b>Submit your Final Big Data Analytics Proposal</b> for grading by the instructor.

## Grading Rubric for the Big Data Analytics Proposal Assignment

Note: Grading Rubrics for other assignments are posted with the assignments.

Week 8 Final Project Grading Rubric					
Criterion	Excellent	Good	Fair	Needs improvement	Weight
	(90–100%)	(80–89%)	(70–79%)	(below 70%)	
<b>Understanding</b>	Demonstrates a sophisticated understanding of the topics and issues	Demonstrates an accomplished understanding of the topics and issues	Demonstrates an acceptable understanding of the topics and issues	Demonstrates an inadequate understanding of the topics and issues	<b>X 0.25</b>
<b>Analysis</b>	Presents an insightful and thorough analysis of all issues identified	Presents a thorough analysis of most issues identified	Presents a superficial analysis of some of the issues identified	Presents an incomplete analysis of the issues identified	<b>X 0.25</b>
<b>Recommendations</b>	Presents detailed, realistic, and appropriate recommendations strongly supported by the information presented and course concepts	Presents specific, realistic, and appropriate recommendations supported by the information presented and course concepts	Presents recommendations supported with limited reasons or evidence or support from the information presented and course concepts	Presents recommendations with little, if any, support from the information presented and course concepts	<b>X 0.25</b>
<b>Presentation</b>	Proposal is very well organized, uses a sophisticated level of writing, is complete, and is professionally presented for delivery to the CEO	Proposal is well organized, clearly expressed, complete, and professionally presented for delivery to the CEO	Proposal is organized, somewhat clearly expressed, somewhat complete, and adequately presented for delivery to the CEO	Proposal is less than appropriate for delivery to the CEO	<b>X 0.25</b>
<b>Total</b>					<b>100</b>