
Assignment Requirements (Average of up to 25 points for both A1A and A1B):

- **Due in Parts as follows:**
 - **Project Charter/Scope Document – A1A:** February 18, 2018 by 11:59pm
 - **WBS – A1B:** February 25, 2018 by 11:59pm
- **Submission:** Via Individual Assignment Drop Box provided in Blackboard
- **Format:** Electronic PDF-type Print-image File formatted in standard US letter size pages by Adobe Acrobat or Compatible Software.
- **File Names:** Begin the name of each file submitted with **IST645S18A1[X]** followed by your last name and first initial, where [X] would be replaced by the assignment part as listed above (A,B). For example, if your name were John Smith, your Charter/Scope document file name might be: **IST645S18A1ASmithJ.PDF** and the WBS file name would be **IST645S18A1BSmithJ.PDF**
- **Application:** Either the Class Case Problem below, or your own approved project.
- **Tools:**
 - 1) Standard Word-processing software for the Project Charter/Scope Document (A1A), , but these must be saved in PDF format through Adobe Acrobat or compatible print-image creation software for all parts to be submitted on Blackboard
 - 2) Microsoft Project 2013 or 2016 for the WBS (A1B) only.

Note: I know that you may not be familiar with the technical solutions described in the case, but this project assignment focuses on the planning and management of projects, which you are learning in class, and the case provides the necessary detail for the required deliverables. You may feel free to look up information about the technical terms and proposed solutions to help you understand, and if you need further help, please make an appointment to see me.

- **Produce two (2) Assignment Deliverables (underlined) specified as follows:**

(1) Project Charter/Scope document, containing:

- **Title Page (with your name)**
- Project identification: name/number
- Summary of Project Background and Overview Description
- Project Business Case (expected results and value or impact for the organization)
- List of all Product and Process Deliverables to be produced during the project
- Known Project Time and Cost Constraints (don't make these up – only what is known now)
- What is out of scope? What else is assumed? Are there other organizations involved?
- Project Team member names, project roles, project organizational reporting structure chart
- List of high-level phases/milestones and general project sequence
- Project management and Integration plan – project forms to be used, meetings to be held, change control procedures that will be used
- Initial List of Project Management Risks and responses planned so far to either reduce or avoid each
- Named Signature Lines/dates for Sponsor, PM and Key Stakeholders with decision-making authority only – (not the whole project team!)

YOU MAY INCLUDE SOME TEXT FROM THE ASSIGNMENT CASE PROBLEM IN CERTAIN CATEGORIES OF YOUR CHARTER/SCOPE DOCUMENT AS APPROPRIATE.

(2) Preliminary Work Breakdown Structure using Microsoft MS-Project software that illustrates the possible structure of the project work from general concepts to detailed work packages that you would recommend at this stage as a project manager. This is an early stage of the project, so you are not expected to know all details of all steps to be performed. Demonstrate all of the features you have learned in class that make a WBS correct. Additional details about this case will come later in your final assignment.

- There will be a Lab session to help you get started for this portion of the project assignment.
- **THE REQUIRED FILE NAME OF THE SUBMITTED ASSIGNMENT** as described on page 1 must appear as the top summary task (PROJECT LEVEL) OF YOUR WBS. If you name your project WBS file with the

proper name following the instructions for formatting as stated in the assignment submission instructions on page 1, and then if you check ON the “Project Summary Task” this file name will appear as the top line of the WBS automatically when you save the file. You will lose points if this top summary line does not show your individual file name.

- Include tasks in your WBS to develop a Communication Plan, Risk Management Plan, and a Schedule Management Plan. **Do not include tasks to develop any other plans for procurement, cost, staffing, quality management, etc., in this WBS as these are not appropriate for this case problem.**
- **Limit the number of tasks in this preliminary WBS to no more than 90.** Make each task count: Each task should be able to clearly convey what it is doing without a long task name
- **Add an effort time estimate** for each work package in a new “WORK” column in MS Project. I will not look for specific numbers, but I want to see how you allocate time as you plan various tasks to ensure that these estimates are realistic – not too small or too large.
- Add predecessors to the work package level tasks in your WBS as we discussed in class
- **Show 4 task detail levels in the planning area of your WBS to show in a detailed way how you intend to manage this project** (this would mean you would show the Major Tasks and then 3 additional sub-task levels in this part of your project).
- **Include appropriate Project Management tasks, like team meetings, planning, training and testing tasks in all appropriate areas of the WBS for the assigned case study.**
 - Regular Meetings with the team, stakeholders, and cross-impacted areas of the organization.
 - Approval points as needed through the project sequence.
 - Points at which you will refine cost and staff assignments (you do not need to calculate costs or assign staff at this point in the project)
 - Points at which you will produce the needed project documentation deliverables.
 - Quality management approaches, including testing and provisions for re-work.
 - User training and other preparations for system implementation.
 - Final reports and other closing processes for the project.
- Enter the WBS into Microsoft Project – the scheduled IST645 Lab Sessions will help you get started.
- Make sure that the following columns are visible on your screen before saving:
 - Line number (automatic)
 - Task Information (automatic)
 - Task Mode (automatic)
 - Task Name (WBS description for each task level and work package)
 - Work (added column for your effort time estimates on work packages only – summary tasks will calculate sub-totals for all lower level tasks automatically)
 - Duration (automatically calculated, but for this assignment the calculations will not be accurate because we are not allocating resources)
 - Start (Automatic – However, dates in this column will not calculate correctly for this assignment and therefore should be ignored)
 - Finish (Automatic – However, dates in this column will not calculate correctly for this assignment and therefore should be ignored)
 - Predecessors (You will enter these as per instructions in class and lab)
 - Note: you do not need to show the column for resource names or the timeline portion of the view in this assignment because we are not using this information for assignment 1)
- **Save the WBS directly from the software** into a PDF format document according to the directions given in lab/class. (Screen shots of the WBS are not acceptable.) Make sure that all of the above listed columns are visible in the final copy of your WBS that you turn in.

GENERAL GUIDELINES FOR ASSIGNMENT 1:

1. You can do research on your own to see about how such systems described in the case actually operate or how such projects might be carried out. This will help you to understand the nature of the project, and the various segments of the planning that you'll need to do. However, do not insert people, companies or resources into the case that are not already there. It is not necessary to actually design any technical solution – your time is to be focused on planning the project. Later installments of this assignment will give you more detailed estimates and planning information. Use this first description to set up the initial project plan generally, knowing that you will fill in more details at a later point when you know more about this particular case.
2. **Your document and your WBS must reflect your own work, and must be matched to the people, organizations, content and scale of the assigned project case only!** Templates found online are not appropriate for this assignment – they contain different sections, steps and tasks, and they are so general that they will not represent the project case in this class. You will lose points on your assignment if I think that your Charter/Scope document or your WBS are too general and do not focus on the specific nature of the problem, organizations, deliverables or people mentioned in this case problem.
3. **Do not submit information in your assignment given to you by students who took the course previously.** I will recognize these, and **this is a violation of academic integrity!**
4. **Produce proper documentation on your own that you would actually submit on the job.** Your assignment will be graded as a professional work assignment, so be sure you think through what would be needed as though you were producing this for your boss!
5. **Note: DO NOT ASSIGN RESOURCES TO TASKS IN THE WBS OR ESTABLISH COST ESTIMATES IN THE WBS FOR THIS PRELIMINARY ASSIGNMENT.** You do not have the necessary detail to produce a budget or to assign resources to specific tasks at this time and you will lose points if you do. You should develop your own effort time estimates for your WBS tasks in the WORK column as we discuss in class and the lab. Duration, Start and Finish columns will not show accurate time or dates in this assignment, so I will not be grading these. Later in the semester, Assignment 2 will provide more information on the project so that you can develop a complete project schedule and budget at that time.
6. **Don't get distracted with a technical solution** – think instead about what you, as a Project Manager, and your team should do, even if you don't know how the technology components or project steps will all be at this point. If you aren't familiar with the technology concepts, technical terms or approaches, please ask for help. ***There is no single, correct "answer" to this assignment. Rather than make you guess a predetermined solution, I want you to think out the problem on your own and develop documentation that you consider best. I will evaluate what you have included, how you have structured the documentation, the way you have expressed expectations, constraints, deliverables or other concerns, and the approach you have suggested for organizing and executing the work.***



CASE PROBLEM: Integration of Factory Analytics at Nolte Manufacturing

Information below on the companies was obtained and adapted from their respective websites; links listed in the profiles:

Nolte Precise Manufacturing. <http://www.nolteprecise.com/> located in Cincinnati, Ohio, provides custom precision machined and assembled components to original equipment manufacturers and offers a total supply chain solution, using CNC lathe, CNC mill, CNC Swiss, automatic screw machine, and assembly processes. Nolte evaluates the entire manufacturing process, finding and recommending efficiencies that result in a reduction in total cost of ownership for clients, including process and engineering reviews, inventory management, and assembly. It is Nolte's mission to become their client's ideal supplier through superior service and value that lowers the client's total cost of ownership. Nolte has been providing contract manufacturing services for nearly 100 years. While it remains true to its founder Lou Nolte's value system, the business continues to evolve, adapt, and innovate to remain an industry leader.

Sight Machine. <https://sightmachine.com/company/> located in Ann Arbor, Michigan, is used to make better, faster decisions about their manufacturing operations. Sight Machine's analytics platform, purpose-built for discrete and process manufacturing, uses artificial intelligence, machine learning, and advanced analytics to help address critical challenges in quality and productivity throughout the enterprise. The platform is powered by the industry's only Plant Digital Twin, which enables real-time visibility and actionable insights for every machine, line, and plant throughout an enterprise. Founded in Michigan in 2011 and expanded to the Bay Area in 2012, Sight Machine fuses the spirit of Silicon Valley technology innovation with rock-solid Detroit manufacturing.

You are a project manager for Nolte Precise Manufacturing, reporting to the VP of Finance, Greg Harrison. Production Manager, Norma Wilson and the VP of Sales, Mat Jackson, were recently discussing the fact that with the big aerospace parts contract the company landed in 2017, it might be time to use that capital to invest in the future of manufacturing systems, looking forward to becoming an eventual "smart factory".

So, with the approval of President Doug Coster, as well as Greg Harrison, Norma and Mat met with you and Manufacturing Process Engineer, Ray Bellman to lay out the initial concept of a first-phase trial of some smart-factory technology. The leader in the field for your size company is Sight Machine, and they have a Manufacturing Analytics system that is based on big data analytics that would provide a great entry-point into this technology.

See Youtube video: <https://www.youtube.com/watch?v=x8hOqzBFkRk>
See Product Information: <https://sightmachine.com/product/ema/>

Ray suggested that the best place to start would be on the computer-based machining equipment, including the CNC Milling, Swiss Machining and CNC Lathe Turning equipment. These machines would be the best to convert to IoT technologies needed for the Sight Machine analytics software. There are 34 machines in this manufacturing line that will participate in this first roll-out.

In addition to the integration of Sight Machine technology into the factory, Greg Harrison also wants you to develop an extract from that system and link it to the existing JobBoss manufacturing control system to

develop financial analyses for him. Particularly, this would involve a custom-developed database that would allow for the following three special reports that would be unique to Nolte Manufacturing:

- Product Cost Analysis
- Employee Efficiency Analysis
- Profit Analysis by Product

Finally, you need to ensure that the shift supervisors and CNC machine operators are properly scheduled for Sight Machine training well in advance of the final implementation.

The contract with Sight Machine has already been developed and signed, so that is not a part of this project schedule. However, it is known that the additional data needed for this new analytics process is well beyond the existing capacity of the Nolte servers running JobBoss. So, Sight Machine will also be assisting you with Cloud-based storage of this data using services that they will provide.

So far, there is no specific time or cost constraint because the first required deliverable of your project is to come up with a project plan and estimate that can be approved, and a project overview presentation for the executive group and the Board of Directors. Greg believes that the company will have the money, but there may be some project adjustments once it is determined what the full cost might be. The project plan and budget have to be in to Greg by April 30th in order for the Board presentation and materials to be ready for the May 11th Meeting. If all goes well with this decision, the project will continue to completion, with the first implementation step starting on June 1, 2018 and beyond, following the approved project plan.

You will be working directly with the following Sight Machine technology staff:

- Chris Dobbrow, SVP, Sales
- Kurt DeMaagd, PhD, VP, Analytics
- Ryan Smith, PhD, VP, Engineering
- Curtis Kellman, Client Implementation Technology Analyst

Your Nolte Manufacturing project team right now consists of the following people:

- Mary Gibson, Manufacturing Systems Analyst
- Yi Wang, Programmer
- Lamont Wilson, Senior Programmer
- June Petersen, Database Administrator
- Krishnanand Naik, Reports Systems Programmer/Analyst
- Paul Johnson, Testing Specialist
- Christina Kutty, Senior Testing Specialist

Of course, in your plan you also need to include specific steps and processes for:

- Regular Meetings with the team, stakeholders, and cross-impacted areas of the company.
- Approval points as needed through the project sequence.
- Points at which you will refine cost and staff assignments (you do not need to calculate costs or assign staff at this point in the project)
- Points at which you will produce the various Project Plan documentation deliverables discussed in class.
- Quality management approaches, including testing and provisions for re-work.
- User training and other preparations for system implementation.
- Final reports and other closing processes for the project.

END OF CASE PROBLEM FOR ASSIGNMENT #1