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| ASSIGNMENTS    Acme Mexico City  and  Application of World-Class Operations Management Techniques  and  Production Planning for Toyota North America   For convenience, here we repeat the business background from the W3TA.  Keep reading - the Week 5 IA basic directions are below!  Background Information for Acme Mexico City  Acme Home Improvements, Inc. was founded in 1982 in Raleigh, North Carolina, USA. By the end of 2012 the company had 125 stores along the US East Coast from Florida to Maine. Its annual sales are currently ~$5,400,000,000 with $280,000,000 net income. The average store is about 100,000 square feet with an additional 10,000 square feet of outside garden center. The stores typically carry 40,000 different products from 5,000 vendors worldwide.  Major US competitors include Ace, Home Depot, Lowe's and TruValue.  In the interests of seeking greater profits and buffering against downturns in the US market, Acme has determined to follow Home Depot, Ace, and other competitors to Canada and Mexico.  In the latter, it has established, in accordance with Mexican law, a joint venture with local interests, known as Acme Home Improvements de México, SA de CV ("Acme de México" or "Acme Mexico City").  (SA de CV = Sociedad Anónima de Capital Variable, a Mexican corporate form.)  There are five major product groups within each Acme store: plumbing and electrical supplies, building materials, hardware and tools, seasonal and garden/yard items, and paint, flooring and wall coverings.  Each store has a store manager, assistant store manager, bookkeeper, an information systems manager and an assistant, a manager for each of the five major product groups, customer service employees on the store floor to assist customers with their purchases, cashiers, receiving/stocking employees, and maintenance/janitorial employees.    Employing Important Techniques Used in Operations Management  This assignment has two parts.  Part 1 involves a five page memo, and Part 2 involves linear programming.  If you like, you may partner with one classmate for this entire assignment, and submit one version with both names on it.  How will you be graded?  See the Week 5 Sample Gradesheet.  **Part 1**:  Your boss, Roberta Wang, has asked you to investigate and report upon two techniques used in Operations Management.  Write her a memo as your answer, and include a succinct (three-sentence) Executive Summary.  Only the first three sentences of your ES will be read.  Ensure you demonstrate mastery of this week’s analytics reading material.  Your memo should be less than five pages of written material (so if you have a title page, and a references page, you will turn in seven pages total) and please ensure you submit it in .pdf format and check it with Turnitin.  Your report will cover two techniques:   1. Data-driven decision-making (aka data analytics) 2. One of the following three options:  Decision support systems, outsourcing to include offshoring, and/or sustainable supply chain management     For each technique, Ms. Wang wants to know:   1. Describe the purpose of each technique chosen 2. How does or should this help operations? 3. What are the limitations of the technique? 4. What are the costs involved?  What training is needed to use the technique? What else is needed? 5. In your own organization, what is the problem, opportunity, or challenge to be addressed? 6. How will each technique help your own organization's operations?  Why? 7. What would be the areas which present challenges in the approach (e.g., cost, training, culture, technology, management commitment, etc.)   If you are not currently working in an organization, you may use any organization of your choice, to include former jobs and/or ACME Mexico City.  Ensure you write a fully fluent memo.  In particular, do not simply list answers to the checklist questions.    **Part 2** – You have quit working for your old boss and have taken a new job (at a significant pay increase, due to your increased knowledge of operations management) with ACME Mexico City.  You now report directly to the CEO, Mr. Terrell Jackson.  His planners have come up with a scheduling proposal (“[CEO Terrell Jackson Proposed Schedule.xlsx](https://learn.umuc.edu/content/enforced/10848-000295-04-2141-MBA-9045/Carrie%20Beam's%20Folders/Week%205%20Linear%20Programming/CEO%20Terrell%20Jackson%20Proposed%20Schedule.xlsx?_&d2lSessionVal=xPl8LhHvoG1fYafYO4xXFI4x3)”) but Mr. Jackson does not understand it and furthermore, he is unhappy because he thinks it is probably too expensive.  Your assignment is to write a report to your boss, CEO Jackson, with answers to the following questions.  Include a succinct Executive Summary.  First, for Mr. Jackson’s proposed schedule, he wants to know in plain English:   1. How many employees are full time?  Part time? 2. Are there any time slots in which we are understaffed?  If so, which time slots and by how many? 3. Are there any time slots in which we are overstaffed?  If so, which and by how many? 4. What is our total full time salary? 5. What is the total part time salary? 6. How many hours are worked total? 7. How many hours are worked by part time employees? 8. Does this meet the 50% criteria for Mexican Law? 9. How do you evaluate this proposed schedule?   He next asks you to use Solver and optimize the schedule.  For your proposed schedule, please answer the same nine questions.  You may find a table is a helpful comparison aid.  Within your report, make sure you include a discussion of your underlying assumptions and of the qualitative factors that you believe are involved.  (Hint:  underlying assumptions should be those underlying linear programming, and they are covered in the Jacobs and Chase reading, near the bottom of the second page of our reserved reading, in a paragraph which starts, “There are five essential conditions in a problem situation for linear programming to pertain…”)  Also please include a discussion of how non-typical days might affect the schedule.  You may use as many (or as few) pages as you find necessary to complete the assignment.    Here is the problem statement:  To the extent permitted by local law, each Acme Home Improvements store, including Acme Mexico City, is open from 7 am - 11 pm every day.  Acme Mexico City advance planners in North Carolina have provided the following table, which identifies the minimum number of customer service employees estimated to be needed on the floor of the store each hour of a typical work day:     |  |  | | --- | --- | | Customer Service Employees | | | Time Period | Minimum number needed on the floor | | 7 am - 8 am | 10 | | 8 am - 9 am | 12 | | 9 am - 10 am | 18 | | 10 am - 11 am | 22 | | 11 am - 12 pm | 22 | | 12 pm - 1 pm | 26 | | 1 pm - 2 pm | 26 | | 2 pm - 3 pm | 26 | | 3 pm - 4 pm | 26 | | 4 pm - 5 pm | 26 | | 5 pm - 6 pm | 28 | | 6 pm - 7 pm | 28 | | 7 pm - 8 pm | 24 | | 8 pm - 9 pm | 22 | | 9 pm - 10 pm | 14 | | 10 pm - 11 pm | 12 |   In the interest of cost control, the planners have also imposed a not-to-exceed maximum of 30 customer service employees on the floor at any time.  Full-time customer service employees at AMC work a 9 hour shift (8 hours of work plus a 1 hour meal break) either from 7 am to 4 pm or from 2 pm to 11 pm. Workers on the 7-4 shift are assigned an hour-long lunch break at either 11 am or 12 noon.  Workers on the 2-11 shift are assigned an hour-long dinner break at either 5 pm or 6 pm.  Part-time customer service employees work four consecutive hours per day and their shifts can start any hour between 7 am and 7 pm. They receive no meal breaks.  By corporate policy, which is consistent with Mexican labor law, the company limits the hours worked by part-time customer service employees to 50% of the day's total scheduled hours.  Part-time customer service employees earn $500 per day, and full-time customer service employees earn $1100 per day in salary and benefits (here, $ = Moneda Nacional, ie, the Mexican peso).  Acme operations analysts working in North Carolina, working with the AMC advance planners, have used linear programming to propose in accordance with the foregoing factors, an employee assignment schedule for a typical day. We repeat their proposed schedule here: CEO Terrell Jackson proposed schedule.xlsx. |