

Worksheet for Mechanical Engineering students, 3rd year (mfg

You are employed to an operational manager of a certain local organization for achieving the objectives and mission of that industry. The operational strategy of the organization is to be cost effective and satisfy their customer by its quality products. Describe your function and job separately in that industry

Assume yourself in the position of operation manager of a small company. The CEO leader/officer wants your views on the company further success. The current production is adequate, but the new focus will provide much greater productivity and effectiveness of the organization. For this reason the decision of you with CEO and other middle manager is required and mandatory. Write the key factors that must be taken into account in making the decision be considered.

1 Suppose that a company produced 300 standard bookcases last week using eight workers and it produced 240 standard bookcases this week using six workers. In which period was productivity higher? Explain.

2 The manager of a crew that installs carpeting has tracked the crew's output over the past several weeks, obtaining these figures:

Week	Crew Size	Yards Installed
1	4	960
2	3	702
3	4	968
4	2	500
5	3	696
6	2	500

Compute the labor productivity for each of the weeks. On the basis of your calculations, what can you conclude about crew size and productivity?

3 Compute the multifactor productivity measure for each of the weeks shown. What do the productivity figures suggest? Assume 40-hour weeks and an hourly wage of \$12. Overhead is 1.5 times weekly labor cost. Material cost is \$6 per pound. Standard price is \$140 per unit.

Week	Output (units)	Workers	Material (lbs)
1	300	6	45
2	338	7	46
3	322	7	46
4	354	8	48

Assignment and Worksheet

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A company that makes shopping carts for supermarkets and other stores recently purchased some new equipment that reduces the labor content of the jobs needed to produce the shopping carts. Prior to buying the new equipment, the company used five workers, who produced an average of 80 carts per hour. Labor cost was \$10 per hour and machine cost was \$40 per hour. With the new equipment, it was possible to transfer one of the workers to another department, and equipment cost increased by \$10 per hour while output increased by four carts per hour.

- Compute labor productivity under each system. Use carts per worker per hour as the measure of labor productivity.
- Compute the multifactor productivity under each system. Use carts per dollar cost (labor plus equipment) as the measure.
- Comment on the changes in productivity according to the two measures, and on which one you believe is the more pertinent for this situation.

5. Nail producing Company is analyzing its operation in an effort to improve performance. The following data have been collected: It takes an average of 4 hours to process and close a nail, with value-added time estimated at 30 minutes per carton; each title officer is on payroll for 8 hours per day, though working 6 hours per day on average, accounting for lunches and breaks. Industry standard for labor utilization is 80 percent; The Company closes on 8 cartons per day, with an industry standard of 10 cartons per day for a comparable facility.

Determine

- Process velocity,
- Labor utilization, and
- Efficiency for the company.
- Can you draw any conclusions?

6. Kombolcha Steel production industry (KOSPI) is considered whether to produce a new corrugated iron for the local customers. The industry has considered the processing needs for the new product as well as the market potential. The owner has also estimated that the variable cost for each product manufactured and sold is 100 ETB and the fixed cost per year is 200,000 ETB.

- If KOSPI offers the corrugated iron at a selling price of 200 ETB per unit, how many corrugated irons must they sell to break even?
- If KOSPI sells 4000 pairs at the 200 price, what will be the contribution to profit?
- Draw the diagram using revenue, unit produced, cost and profit.

NB: this will be submitted as Assignment until 23/07/2012.

It will submit individually

