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IVEY

BANKRUPTCY

This case was revised by Elizabeth M. A. Grasby originally written by Professor Michael R. Pearce solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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Katie Graf had just been assigned the new job of production manager – games and toys for the Exemplar Manufacturing Company. For the past seven years, Katie had worked as a supervisor in another division of Exemplar. Exemplar had several well-established product lines and was beginning to diversify into new areas. Katie's superior, the general production manager, asked her to work with the new products manager on the latest product, code-named *Bankruptcy*. *Bankruptcy* was a new adult game that the marketing department seemed to think would be an immense success, competing with board games such as *Trivial Pursuit* and *Pictionary*.

An Exemplar staff member, John Duncan, informed Katie that the basic tasks to be performed were assembling components purchased from other manufacturers. In repeated attempts, John was able to assemble completed versions of *Bankruptcy* in fifteen minutes. He also found that if three workers performed only two assembly operations each (e.g., Person 1 performed A and B, Person 2 performed C and D, and Person 3 performed E and F), instead of all six, each operation could be completed in half the time, as shown in Exhibit 1. Thus, while one person working alone could produce 41 games a day, a team of three people working together could produce 246 games of *Bankruptcy* per day. The assembly operations could be performed in any order. The time required and material costs of the various components for each operation were given to Katie (see Exhibit 1).

All materials could usually be obtained within one week of being ordered. On occasion, materials could take up to two weeks to be delivered. The vice-president of finance had recently sent a memo to managers asking that all inventories be kept to a minimum since costs for the company had risen substantially. The vice-president asked to be informed of all investment needs exceeding $40,000.

A good supply of semi-skilled personnel was available in the community. The starting rate at Exemplar was $10.25 per hour[1] (employee benefits were not provided); normal hours were 7:30 a.m. to 4 p.m., with 30 minutes for lunch. Thus, each worker was paid $82 per day. Considering that there were, on average, 20 working days in a month, this worked out to $1,640 per employee per month. Katie was told that she could hire as many workers as she thought she needed and pay them on whatever basis she wished, so long as she did not exceed the plant average of $15 per hour regular time for semi-skilled labour. Overtime, if used, was calculated at time and a half.

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[1] *The current minimum wage in Ontario (effective March 31, 2010).*

Katie was allotted a plant space of 20 metres by 5 metres and told she could arrange her operations as she saw fit. The department would be charged $60/m^2 per year for the entire space allotted. Additional space required beyond the 100 square metres was also available, but would be charged to her operation at $90 per square metre per year. The raw materials inventory (at $23 per unit) and finished goods inventory (valued at material cost plus labour cost) required roughly the same amount of cubic space. As the boxes were fairly bulky, she could store the equivalent of 60 units of *Bankruptcy* on each square meter of floor space, assuming she piled them as high as possible. John Duncan told Katie he figured they would need 50 square metres for assembly operations, including tables, work stations, lockers, etc. Other fixed manufacturing overhead costs associated with *Bankruptcy* were estimated to be $7,500 per month.

The new products manager told Katie that the marketing department forecast a demand of 4,800 units per month for at least the first year. This could vary from 4,000 units to 6,000 units in any given month. He also stressed that because *Bankruptcy* was basically an impulse purchase, stock-outs were considered very costly; he expected Katie to avoid such situations. The intended selling price was $28 per unit. Marketing fixed costs (mostly for packaging design, advertising and point-of-purchase displays) were estimated at $90,000.

Katie was also told that one of her suppliers, Hitchison Ltd., had sent in a quotation of $26.50 per completed unit to produce the year's requirements of *Bankruptcy* for Exemplar. Their quality was not considered as good as Exemplar's, but they were prepared to provide units on any schedule desired. Unfortunately, they added, the delivery time could vary from one to four weeks, depending on how busy they were.

Exhibit 1

Assembly Operation	Time Required: For One Person Working Alone	Time Required: For a Three-Person Team	Material Cost
A	1 minute	½ minute	$ 1.15
B	4 minutes	2 minutes	$ 2.85
C	2 minutes	1 minute	$ 0.60
D	2 minutes	1 minute	$ 1.15
E	3 minutes	1 ½ minutes	$ 5.75
F	3 minutes	1 ½ minutes	$ 11.50
	15 minutes	7 ½ minutes	$ 23.00