

Liz Ortega builds custom cabinets. The process usually begins with a preliminary visit to a potential customer location to take measurements and prepare a bid. Measurements and bidding are done by a salesperson. Many times, this preliminary visit does not result in an order. Once an order is received, there are a number of order-specific "shop setup" processes (calibrating saws, lathes, sanders, etc.). The "shop setup" process is the same no matter how many individual cabinets are produced for each order (i.e., some orders are for just a few cabinets, and some orders are for hundreds of identical units). Setup is followed by production and the amount of time and labor is heavily correlated to the number of units produced in the order. The final step is delivery to the job site, and the cost for this activity is mostly a function of distance from shop to job site.

Liz has been applying factory overhead based on direct labor hours, and realizes that this costing model is sometimes ineffective in producing competitive and/or profitable bids. She has read about "activity-based costing" and is interested in perfecting her bidding process based upon ABC methodology.

Ortega's total cost for a recent period are as follows:

Direct material	\$ 300,000
Direct labor	200,000
Indirect material	40,000
Indirect labor	60,000
Shop depreciation	150,000
Shop maintenance	25,000
Other shop costs	35,000
Administrative salaries	90,000
Sales salaries	55,000
Transportation	20,000

Liz has examined her business and concluded that she has four basic activities: bidding, machine set up, production, and delivery. During the period for which the above costs were incurred, 75 jobs were bid, resulting in 25 orders. The ratio of bids to orders was about normal. Each order required a separate shop setup. 2,000 cabinets were produced. Delivery distance for the orders totaled 4,000 miles. Ortega conducted a study to determine the portion of each cost category that is attributable to the four activities. The results of this study are summarized in the following table.

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	<u>Bidding</u>	<u>Set Up</u>	<u>Production</u>	<u>Delivery</u>	<u>Unallocated</u>
Indirect material	5%	15%	75%	5%	0%
Indirect labor	10%	20%	50%	20%	0%
Shop depreciation	0%	15%	80%	5%	0%
Shop maintenance	0%	40%	55%	5%	0%
Other shop costs	0%	60%	40%	0%	0%
Administrative salaries	20%	0%	25%	10%	45%
Sales salaries	95%	5%	0%	0%	0%
Transportation	30%	0%	0%	60%	10%

- (a) Determine the total cost of each activity, and calculate a cost per unit of measure.
- (b) Ortega's salesperson has been asked to bid on an order involving 50 cabinet units. Delivery requires 60 miles of driving. If the goal is to price orders at 200% of the activity-based cost (including direct material and direct labor, but excluding unallocated costs), what price should be quoted?