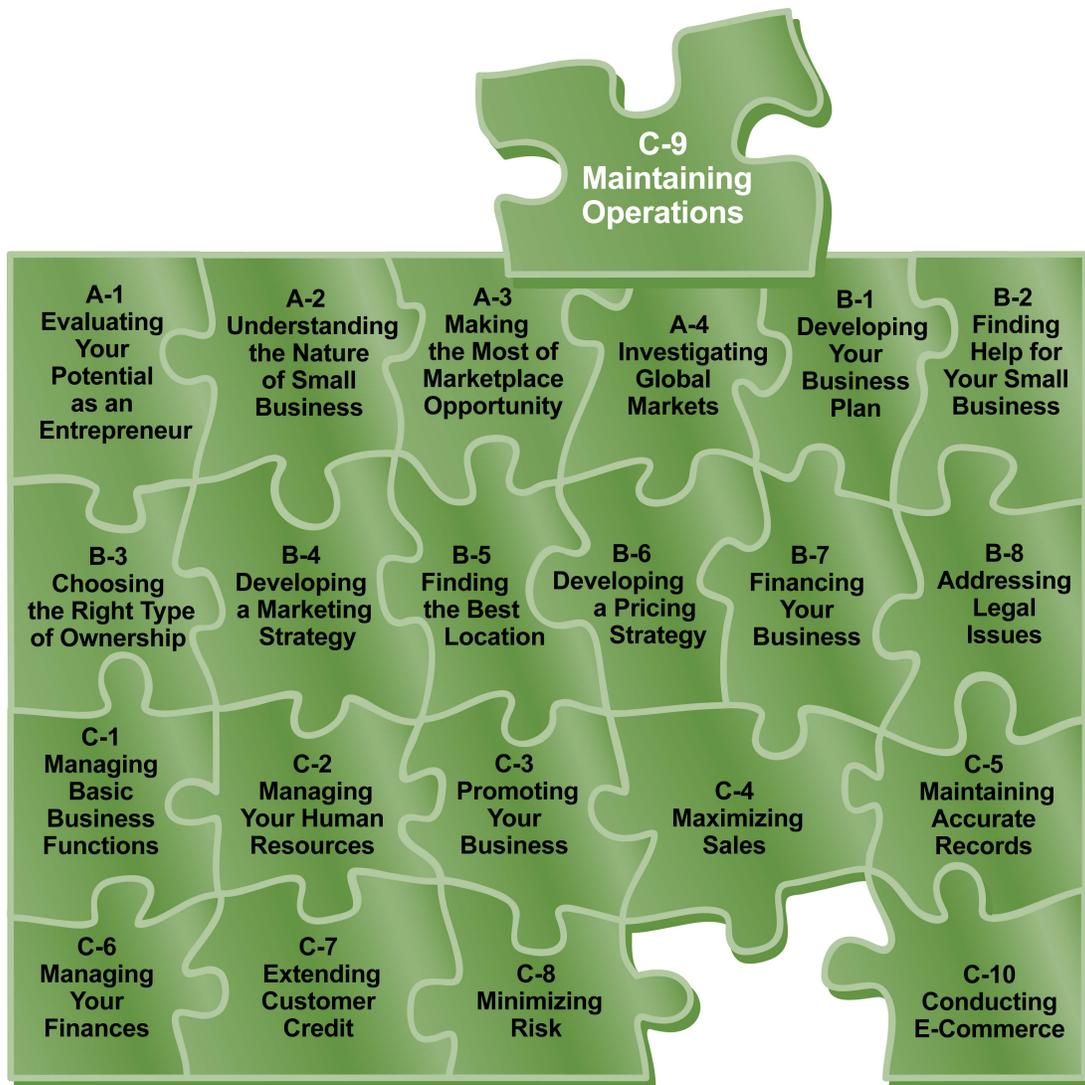


PACE

Fourth Edition

Program for Acquiring Competence in Entrepreneurship



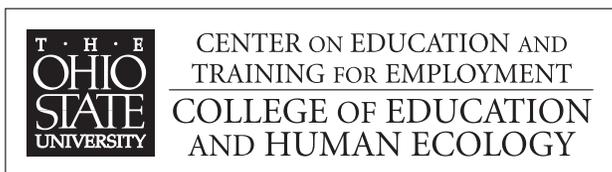
PACE

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This version of PACE was supported in part by a grant from OSU Extension.

Foreword

I am pleased to introduce you to the Fourth Edition of the Program for Acquiring Competence in Entrepreneurship (PACE). PACE represents our continuing effort to respond to the needs of the education and business communities. At no other time in history has understanding entrepreneurship been as important. For one thing, promoting entrepreneurship carries the societal imperative as small businesses as a whole contribute much to the growth and renewal of regional and national economies.

When first published in the late 1980s, PACE properly emphasized that entrepreneurship was based as much on sound planning as having products and services that were responsive to the marketplace. Through its various revisions, PACE continued to focus on the general importance of planning and managing the startup of a small business.

The current PACE edition represents a necessary break from past versions in both its format and some content. For one thing, the text format has been substantially changed from paragraphs to a series of related sections with subheadings. This change allows readers to have greater accessibility to the information, whether it is delivered via a printed booklet or a technology-based approach. And the format allows the instructor/facilitator to have greater flexibility in selecting content to accommodate the needs of various audiences and settings.

In terms of the content, PACE continues to emphasize the importance of planning and managing of a small business. But it now includes a renewed emphasis on meeting customer expectations. Any business cannot exist without a comprehensive understanding of who receives its products or services. In this sense, PACE introduces the topic of conducting e-commerce. Until recently, the entrepreneurial horizon may have been limited to serving local customers only. The advent of the Internet offers the promise of serving many more customers, but not without the accompanying challenges.

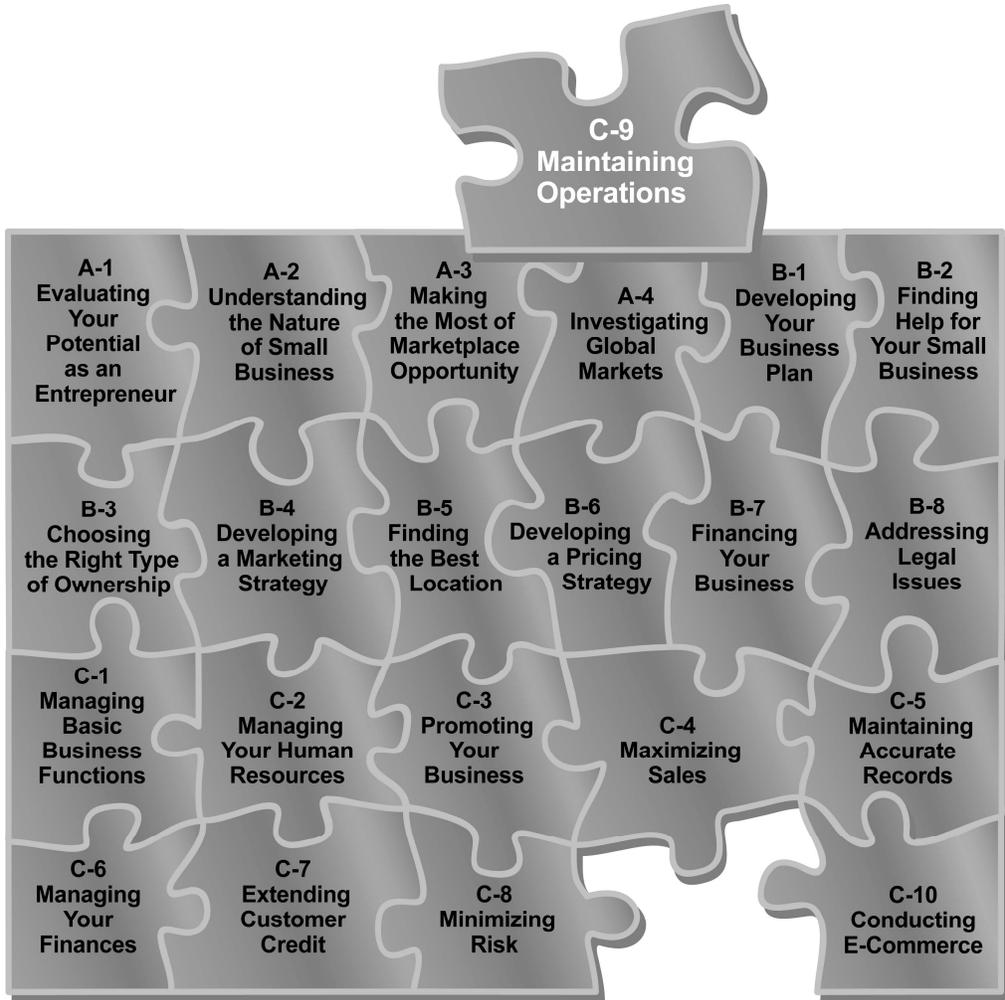
This edition was supported in part by a grant from OSU Extension and in partnership with OSU South Centers – Piketon. We hope that PACE will provide you with the understandings necessary to help you to achieve your entrepreneurship goals.

Ronald L. Jacobs
Director
Center on Education and Training for Employment

Overview

Introduction

Small business operations include equipment and layout, production planning, purchasing, inventory control, shipping and receiving, financing, and record keeping. This module covers these topics with the exception of financing and record keeping, which are separate modules.



Continued on next page

Overview, Continued

Rationale How well you plan, organize, and control operations determines whether you will achieve your productivity and quality goals.

Objectives By the conclusion of this module, you will be able to:

- Describe the basics of operations including:
 - examples of operational components for various environments
 - management's role in operations.
- Explain how to coordinate the following functions into business operations:
 - purchasing (factors to consider, procedure, purchase orders)
 - shipping and receiving (methods, carrier selection, packaging)
 - inventory control (types of inventory, strategies, methods)
 - equipment and layout (physical arrangement, layout type, performance criteria).
- Describe a production plan including:
 - its purpose
 - generating the plan
 - types of production plans
 - implementing the plan.

Relevant NCSEE standards This module aligns with the following National Content Standards for Entrepreneurship Education (NCSEE):

- M.01 Plan business layout.
- M.02 Determine equipment needs.
- M.04 Establish operating procedures.
- M.10 Select business location.
- M.15 Establish company buying/purchasing policies.
- M.18 Negotiate contracts with vendors.
- M.22 Maintain inventory of products/supplies.
- M.23 Organize shipping/receiving.

More information on the NCSEE is available at http://www.entre-ed.org/Standards_Toolkit/.

Continued on next page

Overview, Continued

Topics

The topics in this module are:

Topic	See Page
Operations Basics	4
Equipment and Layout	6
Production Plans	12
Purchasing	15
Inventory Control	19
Shipping and Receiving	23

Exhibits

There are no exhibits in this module.

Before you begin

After reviewing the above objectives for this module, determine whether you can already meet those objectives and consult your instructor if you can.

Operations Basics

Introduction

Operations is managing the activities involved in turning your inputs into outputs. Inputs are the combination of materials and labor needed to provide a finished product or service. The outputs can be finished goods in a manufacturing environment or the delivery of a service in the service environment.

Examples

The table below presents an example of the operations involved in three areas – manufacturing, retail, and services.

Organization	Input	Output
Automobile manufacturer	Steel frame Mechanical parts Electrical units Tires Upholstery Window glass Employees Electricity	Cars
Jewelry store	Rings, necklaces, and other jewelry Retail space Sales staff Jeweler Customers	Merchandise for sale to customers and other firms
School system	Students Teachers Classrooms Text books Library Supplies	Graduates

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Operations Basics, Continued

Operations management

The management role in operations is both a function and set of decisions.

As a function – The operations function is one of many performed by the entrepreneur. It is related to several other functions of the business, like marketing and accounting. Operations are different in each organization. The operations of a manufacturing company and a restaurant are very different. Yet each operations function changes the inputs into a final product and/or service.

As a set of decisions – Operations management involves many decisions with powerful consequences. Although the specifics of each business vary, the decision-making process involves the following basic steps:

Step	Action
1	Define the problem.
2	Gather the information needed to develop potential solutions.
3	Analyze the alternatives for resolving the issue.
4	Implement the chosen alternative.
5	Evaluate and make adjustments to the plan as necessary.

Equipment and Layout

Introduction

Every business requires equipment of some sort to operate. The organization and layout of your equipment can dramatically impact efficiency, quality, and safety.

Design or layout plan

A design or layout plan involves decisions about the physical arrangement of activity centers where workers use equipment. The purpose of a design or layout plan is to facilitate workers and equipment to operate at peak efficiency.

Definition: An activity center is any collection of tasks and equipment – a person or group of people, a machine, a work station, an entire department, a timecard rack, a cafeteria or storage room, etc.

Layout

To determine the best physical layout, ask these questions:

Which activity centers should the layout include?

- Centers should reflect the process design and maximize productivity.

Example: A central storage area for tools is most efficient for certain processes, but keeping tools at individual work stations makes more sense for others.

- Centers should reflect the business size and strategy.

Example: It may be easier to have the factory in one location and the headquarters in another; or it may be easier to have both in the same location.

How much space and capacity does each activity center need?

- Inadequate space can reduce productivity, deprive employees of privacy, and create health and safety hazards. However, excessive space is wasteful, can reduce productivity, and can isolate employees unnecessarily.
-

Continued on next page

Equipment and Layout, Continued

Layout (continued)

To determine the best physical layout, ask these questions:

How should each activity center's space be configured?

- The amount of space, its shape, and the elements in a work center are all interrelated. Also, provide a pleasant atmosphere.

Example: Placement of a desk and chair relative to other furniture is determined by the size and shape of the office, as well as the activities performed in it.

Where should each center be located?

- Location, whether in the middle of the facility or in back, significantly affects productivity. Plan each area for the most positive impact. It is often helpful to determine your customer needs and behaviors and design the centers accordingly.
-

Layout types

The choice of layout type depends largely on your organizational planning strategy. The four basic types are:

- process
- product
- hybrid
- fixed-position.

Process layout – The process layout is applicable when the same operation must intermittently produce many different products or serve many different customers. Demand levels are too low or unpredictable for the manager to set aside human and capital resources exclusively for a particular product line or type of customer. Process layout has the following characteristics:

- Resources are relatively general-purpose, flexible, and less capital-intensive.
 - This layout is more flexible because it's less vulnerable to changes in product mix or new marketing strategies.
-

Continued on next page

Equipment and Layout, Continued

Layout types (continued)

Process layout has the following characteristics:

- When your business produces low-volume, high-variety production, organize resources, employees, and equipment around the process by grouping stations or departments according to function.

Example: In a machine shop, place all drilling equipment in the same area. In a department store, display all budget apparel in the same location.

- Equipment utilization is high because you can pool the requirements for all products.
- Employee supervision can be more specialized, a positive factor when the job requires a great deal of technical knowledge.
- Disadvantages are slower processing rates, production is slower when switching from one product/service to another, and more space and capital are tied up in inventory.

Product layout – The product layout is best for repetitive or continuous production, when management dedicates resources to individual products or tasks. Product layout has the following characteristics:

- Work stations or departments are arranged in a line or linear path along the product's route rather than share them across many products.

Example: an automated car wash

- Output is balanced to move the product or customer along in a smooth, continuous flow.
- The product layout may be a straight line, or management may opt for a different shape such as O, S, U, or L. In any case, product layout is simpler than process layout since it follows the product's routing.
- Interacting components are placed close together since they have a link.

Continued on next page

Equipment and Layout, Continued

Layout types (continued)

Product layout has the following characteristics:

- The challenge with product layout is to group activities into work stations and achieve the desired output rate with the least resources. The composition and number of work stations are crucial decisions to be made early.
- If the product design changes, it will require possible reconfiguration of the product layout.

Hybrid layout – Hybrid layouts combine elements of both process and product layouts. It arranges some parts of the facility as a process layout and others as product layout. Hybrid layout has the following characteristics:

- The hybrid layout is effective when introducing manufacturing systems designed to achieve repeatability, even when product volumes are low, to justify dedicating a whole line to a single product.
- In such a case, this layout becomes a series of islands of automation, representing miniature product layouts as all resources needed to make the family of parts are brought together at one center. The rest of the facility represents a process layout.
- Hybrid layouts also occur in facilities with both fabrication and assembly operations. Fabrication operations, where components are made from raw materials, tend to have a focus on process. Assembly operations, on the other hand, tend to focus on product.

Example: A retail store is a hybrid layout. Similar merchandise is grouped together to help customers find the desired merchandise (process layout). The layout also leads customers along predetermined pathways, up and down aisles (product layout). The intent is to maximize exposure to the full selection of goods and increase sales.

Continued on next page

Equipment and Layout, Continued

Layout types (continued)

Fixed-position layout – In the fixed-position layout, the product is fixed in place and workers come to the product with their tools and equipment to work on it. Fixed-position layout has the following characteristics:

- This layout is effective when the product is massive or difficult to move.
- A fixed-position layout minimizes the number of times that the product has to be moved.
- Often the fixed-position layout is the only feasible solution.

Example: assembling ships and trains, building dams, repairing home furnaces

Performance criteria

Early in the planning process, determine which dimensions to emphasize in defining your layout (such as developing the layout to maximize sales vs. to minimize material handling costs). The three criteria for making this decision are described below.

Capital investment – Floor space, equipment needs, and inventory levels depend in part on whether you select a process or product layout. Make this decision based on the table below.

If...	Then...
volumes are low	choose a process focus for higher resource utilization to reduce equipment and space needs (with the possible disadvantage of added space and investment in inventory).
volumes are high	choose a process that focuses on flow and efficiency.

Continued on next page

Equipment and Layout, Continued

Performance criteria (continued)

Materials handling – Relative locations of centers should allow large flows to go short distances. Recognize the occurrence of frequent trips or interactions between work centers, and locate them close to one another. The table below describes the impact of this factor in various environments.

Environment	Impact
Manufacturing	This approach minimizes materials handling costs.
Warehouse	Stock-picking costs are reduced by storing items needed for the same orders next to each other.
Retail store	Convenience increases when items are grouped predictably to minimize search time.
Office	Communication and cooperation improve when people interacting often work near one another instead of relying on phone calls or e-mail.

Flexibility – A flexible layout can be easily adapted to significant changes:

- The change might be goods produced, space requirements, the customer mix, or organizational structure.
- A flexible layout minimizes the cost of changes. Flexibility is evidenced by modular furniture and partitions (rather than permanent load bearing walls), wide loading bays, heavy duty floors, and extra electrical outlets.

Other factors – Other factors in performance are:

- Labor productivity is affected when specific work stations can be operated by a wide range of employees in the layout rather than just one.
 - Downtime waiting for materials to be moved results from poor layout.
 - Equipment maintenance is difficult with inadequate space or poor access.
 - Work environment including temperature, noise level, and safety are related to layout.
 - Employee attitudes are affected by whether the layout allows them to interact with each other, reflects equitability in levels of responsibility, and puts them under the watchful eyes of their supervisor.
-

Production Plans

Introduction

A production plan links the overall business strategy with operational details. The plan is a schedule to ensure all the required inputs (supplies, labor) are available at the appropriate times, based on customer orders or anticipated orders.

Examples: In manufacturing, the production plan links strategic goals with the master production schedule. In service firms, it becomes a staffing plan and ties strategic goals to detailed work schedules.

Purpose

The ultimate purpose of this type of planning is to use the best mix of inputs to achieve the required outputs by:

- maximizing inventory investment
- maintaining a stable workforce
- minimizing production costs
- maximizing profits.

Example: A restaurant must have a plan to be sure the correct ingredients and right number of workers are available at the right times. You may have high volume business at dinner times but less volume at mid-day. Your plan should adjust accordingly.

Generating the production plan

Your production plan or scheduling should be a continuous process. After creating a tentative plan, check it against strategic objectives and constraints. If the plan is deemed unacceptable, revise your approach to include new alternatives addressing physical or policy constraints. Once you determine that the production plan is sound, implementation can begin.

Example: A production plan with monthly intervals specifies monthly production rates, inventory and backlog accumulations, subcontracted production, and monthly workforce levels (including hiring, layoffs, and overtime).

Continued on next page

Production Plans, Continued

- Starting a plan** Production plans often start by trial and error. The trial-and-error approach has the following characteristics:
- Trial-and-error planning involves stating a strategy and then developing a plan, comparing it to other plans, and finally modifying your strategy as necessary. This process continues until you're satisfied with the production plan.
 - Although this approach is simple, the key to making it work lies in the ingenuity of the planner, who makes a wide range of choices such as:
 - amount of inventory to produce
 - amount of overtime to authorize
 - number of units to subcontract.
 - This type of plan can be costly given the price of labor and materials.
-

Implementing the production plan Implementation requires commitment, beginning with determining where to start. Once you begin, you can make additional inputs, develop your plan more completely, and update it as needed. Employees can recommend changes to better balance conflicting objectives from their perspective.

Note: Accepting the plan doesn't mean that everyone is in agreement. But it does imply that they will work toward achieving the goals stated in the plan.

Continued on next page

Production Plans, Continued

Example Crawford's Bakery has developed a production plan for baked goods for the upcoming week:

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
50 doz donuts	50 doz donuts	50 doz donuts	50 doz donuts	75 doz donuts	75 doz donuts
75 doz rolls	75 doz rolls	75 doz rolls	75 doz rolls	90 doz rolls	90 doz rolls
12 cakes	12 cakes	12 cakes	12 cakes	15 cakes	15 cakes

After seeing the production schedule, Mrs. Crawford makes an order list for the ingredients to order from the supplier. Based on the planned items and customer demand, the schedule may change from time to time. If a customer is having a brunch and wants two dozen cinnamon rolls, Mrs. Crawford adjusts the amount of ingredients ordered for that week. Items like spices can be ordered at a good price and stored for later use.

With the proper ingredients on their way, Mrs. Crawford has the baking staff inventory bags and boxes needed for packaging. If the large order necessitates it, they order additional bags and boxes to accommodate the number of baked goods on their way out the door.

Mrs. Crawford must also consider the need for employees and details of their schedule. For example, her workload is expected to increase on Saturday and Sunday. Therefore, she may need to have an extra worker on those days.

Other considerations include storage space for the upcoming order as well as any special instructions on producing and delivering the goods, such as dropping off the order the morning of the event at the back door.

Purchasing

Introduction

Purchasing is acquiring the supplies your company needs to produce goods or provide services. Purchasing requires decisions on factors such as:

- which supplier to use
- how to negotiate contracts with suppliers and customers.

Key point: In most businesses, it's almost as important to know how and where to buy as how and when to sell.

Main objective

The main objective of purchasing is to find the best quality inputs for the intended use at the lowest possible cost. Accurately forecasting your purchasing needs helps ensure your company does not run out of supplies or overspend for excess supplies.

Factors in purchasing

Examine your records to relate historical purchasing decisions to current need. When deciding what, when, and at what price to buy materials, consider these purchasing factors:

- quantity
- quality
- timing
- suppliers
- pricing.

If possible, use historical data to guide decisions. Also think about future changes. For example, your restaurant may have a special-price family night. This may increase sales requiring you to purchase more food ingredients than normal.

Quantity – Evaluating appropriate quantities is an important decision. Inventory costs money. To carry inventory, you may need to finance through a loan or line of credit. The interest costs increase a business's expenses. Not carrying enough supplies can result in lost sales.

Quality – Quality is meeting the expectations of your customer. Purchasing the right type of ingredients based on customer expectations is an important decision. A quality assurance plan eliminates the purchase of poor-quality goods and services and ensures that you produce high-quality outputs.

Continued on next page

Purchasing, Continued

Factors in purchasing (continued)

Timing – The just-in-time inventory method is a good way to determining the right quantity to buy for immediate use. This approach allows you to keep less material on hand and avoid the cost of storing inventory, thus saving you money. Buying at the right time includes considering seasonal purchases and inventory needed in surplus to avoid delays in output. Backordered and out-of-stock items can harm your business as much as having too much money tied up in inventory.

Suppliers – Since a poor supplier relationship can adversely affect your business, identify suppliers capable of providing the materials you need at the time and price that you need them. Follow these guidelines to find a supplier:

- Establish your requirements for quantities, quality, and timing before you meet with a supplier. You should be clear about your requirements so you do not purchase or enter a contract that does not meet your goals.
- Request written estimates from potential suppliers in by seeking competitive bids. One approach is to request bids from three potential suppliers. Request the same requirements from each. Ask clarifying questions. Do not hesitate to request presentations for large dollar contracts.
- Before contracting with a supplier, ask for references. If the supplier is reputable, they'll be happy to give you their client list. Consider asking your Better Business Bureau for a report about the potential supplier.
- Consider supplier catalogs to find what you need at reasonable prices.
- Ask all suppliers about their payment terms. Ask about credit availability and cash discounts for quantity increases and for early payments.

Pricing – Pricing is one of the most important factors in purchasing. The combined cost of all your inputs (purchased supplies, labor, etc.) must be less than the price you can charge for the inputs in order to make a profit. A few pennies per each purchased item can add up to profit. Find the supplier offering the best price for the highest quality materials, and decide whether they have the resources to meet your long-term needs.

Continued on next page

Purchasing, Continued

Factors in purchasing (continued)

Follow these guidelines to get the best pricing.

- Before negotiating a price break for buying higher volumes, ask yourself whether you have the additional space for storage and enough working capital to tie up cash in the excess inventory before committing to the purchase.
- Sole-source contracting can be an excellent way to build a strong relationship with your suppliers. Generally, a sole-source supplier offers better service, but that does not necessarily guarantee the best price, particularly if you are unaware of comparative prices.
- Continually analyze your supply usage to find ways to reduce the cost or improve the performance of items purchased or produced. Assess supplies based on these questions:
 - What is the function of the item?
 - Is the function necessary?
 - Can a lower-cost option serve the same purpose?
 - Can the item be simplified or can specifications be relaxed to reduce the number of items required to produce an output?
- Be sure to involve employees and customers in these decisions. For example, your restaurant makes pizza. You want 55 slices of pepperoni on each pizza. Can you have the same quality with 50 slices? If so, 5 slices of pepperoni off each pizza over the course of a year can result in costs savings for your business.
- Conduct the value analysis periodically on large dollar-volume items. Involve the entire team with representatives from purchasing, production, engineering, and any other relevant function in order to broaden your perspective on the item's value to your operations.

Continued on next page

Purchasing, Continued

Procedure

The table below describes the procedure for purchasing.

Step	Action
1	Receive the request for an order (including item description, quantity, quality, and delivery date).
2	Select a supplier.
3	Place the order.
4	Track the order (to anticipate delays).
5	Receive the order (check quantity and quality).
6	If the shipment is unsatisfactory, decide whether to return it or work with it as received.
7	Evaluate your suppliers based on: <ul style="list-style-type: none">• punctuality• quantity• quality• price.

Purchase order

The purchase order (PO) tracks your purchases. It's a preprinted form numbered in sequence that gives your suppliers the information they need in order to fill your order efficiently. Purchase orders contain the following information:

- Your PO reference number
 - Company name, address, and phone number
 - Where to ship the order
 - Where to send the invoice
 - Specific items ordered, including quantity, price, discounts applied
 - Total price
 - Payment terms
 - Shipping orders
 - Delivery date requested.
-

Inventory Control

Introduction

Inventory is all the materials and component parts that your company has in supply. Inventory should be thought of as cash tied up in an asset. The more inventory you have, the more cash you have tied up. Ideally, you carry enough inventory that you never lose a sale, but you don't carry excess inventory. This balance is difficult and requires continual attention. Inventory control is the approach you take to know your inventory usage and position and find ways to better balance your inventory.

Rationale

Accurate inventory control is vital to realistically measure your net earnings for a given period. Maintain the proper inventory control in order to:

- avoid lost customers because your product is unavailable for purchase
 - enable consumers to see your product before buying it
 - obtain discounts in pricing from your suppliers
 - keep your storage and maintenance costs at a minimum
 - ensure prompt delivery to customers
 - be aware of inventory loss due to damage or theft.
-

Inventory details

When a customer places an order for a good or service, you have to know whether you can fill that order right away. If you don't know your inventory, you risk losing that business to competitors. There are many computerized systems and software applications that can help keep accurate track of your inventory. A common device for maintaining inventory in the retail environment is the scanner. As each item passes over the electronic eye, it reads the Universal Product Code (UPC) and logs each outgoing item against the inventory.

Keep these details about your inventory:

- what you have in stock
 - the amount you have on hand
 - when to increase or decrease inventory on hand
 - the age of perishable or time-sensitive items.
-

Continued on next page

Inventory Control, Continued

Cost breakdown

Inventory costs are usually broken down into invoice price and transportation charges from seller to buyer.

Types of inventory

There are three types of inventory, each representing a different stage of readiness for sale. Be aware of each to determine which one is important to your specific business needs. The types of inventory are:

- raw materials
- work in process
- finished goods.

Raw material – This type of inventory refers to items that you have acquired to convert into finished goods.

Examples: wood for furniture, food ingredients to make cakes, parts for watch repairs

Example: A craft store that creates its own handbags and belts stocks leather as a raw material.

Work-in-process – This category represents goods that have been started but not yet completed. Work-in-process inventory includes these three cost elements:

- raw materials currently in use
- direct labor
- factory overhead.

Examples: a partially finished chair, a cake being baked, a watch being repaired

Finished goods – This inventory usually refers to the items ready for sale. It includes the total costs incurred to produce sales units that haven't been sold yet.

Examples: a finished wooden chair, a baked cake, a repaired watch

Continued on next page

Inventory Control, Continued

Proper amounts

The proper amount of inventory is enough to maintain sales and not lose business – but not so much that it ties up capital or becomes outdated. This ideal balance is difficult to achieve. To keep the proper amount of inventory on hand, consider the following points:

- the number and brands of a particular item (depends on customer demand)
- the quantity on hand (may be too much or not enough to meet demand)
- recognition of fads (may need to discount just to sell)

Caution – One temptation is to take advantage of quantity discounts in order to obtain a lower cost. But you will have excess inventory to sell, and you'll want to be sure you can sell it.

Seasonal items – It is very difficult to maintain the proper amount of inventory during holiday seasons. An overstock of seasonal items can be difficult to sell after the season. It is hard to sell long-sleeve shirts in the summer and the shirt may not be in fashion the next season.

Stock turnover – Entrepreneurs measure the effectiveness of their investment in inventory by how many times the average inventory is sold per year, or how often it turns over. If you are purchasing correctly and pricing your products appropriately, more inventory turns should result in more profits. However, higher turnover may also mean that you are not carrying enough inventory and may be losing sales for being out-of-stock. Compute stock turnover as follows:

$$\text{Turnover} = \frac{\text{Costs of Goods Sold}}{\text{Average Inventory}}$$

Continued on next page

Inventory Control, Continued

Proper amounts (continued)

Definition: Cost of the goods sold is the cost of buying raw material and producing finished goods. Included in this cost are factors such as the material, labor, and variables like factory overhead.

Example: You have a sporting goods store with an annual cost of sales (same as cost of goods sold) of \$200,000. Your average inventory costs \$20,000. Turnover for this company (X) is calculated below.

$$X = \frac{\$200,000}{\$20,000}$$
$$X = 10$$

Note: You can also compute this relationship for each type of product you sell to compare the turnover rate for specific items. The two basic types of inventory control systems are perpetual and physical.

Control systems **Perpetual inventory** – Perpetual inventory is keeping records of receipts and withdrawals on a continual basis. This system is characterized as follows:

- You have a running tally on the current stock of an item. For each item, a record is maintained as it's brought into the business, stocked, and sold.
- Records include the item name, stock number, reorder point, and supplier.
- When you receive additional inventory, add the number to the balance.
- When items are sold, subtract the number from the balance.
- Periodically, you can review perpetual inventory records and compare the figures with physical inventory.

Physical inventory – Physical inventory is the actual items in stock. Physical inventory can be hard to maintain unless you follow the proper steps for accuracy and completeness.

Shipping and Receiving

Shipping methods

Moving goods is an important aspect of operations. Common methods of shipping include:

Method	Description
Commercial trucking (local and national firms)	<ul style="list-style-type: none"> • Least expensive • Will pick up on a regular route or when called
By air	<ul style="list-style-type: none"> • Most expensive • Fastest service
By water	<ul style="list-style-type: none"> • Slowest service • Least expensive for international destinations
By rail	<ul style="list-style-type: none"> • Cost-effective for large shipments when time isn't a major consideration • Requires transportation to and from the rail station
Shipping companies or services (post office, UPS, FedEx)	<ul style="list-style-type: none"> • Can be very reasonable costs
Company truck or van	<ul style="list-style-type: none"> • Economical with enough volume to keep the vehicle en route • Helps to share the vehicle cost with other companies
Private cars	<ul style="list-style-type: none"> • Can be problematic if shipments are large

Carrier selection

Select your carrier carefully based on:

- transit time (including pickup and delivery, terminal handling, and delivery between terminals)
 - cost of shipping (including packaging needed)
 - reliability (including history of delivery as promised and breakdowns)
 - capability (for requirements such as the size of shipment, controlled temperatures, and special handling)
 - accessibility (for remote destinations)
 - security (confidence in the carrier to protect your product).
-

Continued on next page

Shipping and Receiving, Continued

Packaging

Depending on the product you have to ship, goods may be contained in boxes or bags, on wooden pallets, or in some other appropriate container. Packaging is essential to delivering intact goods to the customer.

Marketing – Packaging may also be part of your marketing strategy. To create a desire for your product, make it look desirable in attractive packaging. The appearance of your packaging tells your customer much about how you care for their purchase.

Considerations – When designing packaging for your product, consider the following points:

- Boxes are durable and easy to handle and stack.
- You can use wooden pallets for large shipments when both shipper and receiver have loading docks and forklifts. Materials on pallets generally require stretch wrap to prevent shifting during handling or transit.
- Use shipping tape to secure the bottom and top of boxes.
- Clearly label containers with the customer's name, address, and phone number, as well as the PO number.
- Number boxes in the same shipment to indicate how many the total shipment includes (1 of 3, 2 of 3, 3 of 3).
- Barcoding technologies are a means to track inventories more closely. Barcodes can carry much data about the product being shipped. They offer both parties the ability to immediately update their inventories.
- Match the invoice with the order shipped. If this documentation goes with the package, it speeds up the payment process.

Continued on next page

Shipping and Receiving, Continued

Paperwork

Every order has a matching invoice to ensure that the seller is paid in a timely manner. You can send an invoice, or bill, separately, in which case the shipment should include a packing slip or copy of the original invoice.

Invoice – The invoice for the goods shipped or service provided includes:

- invoice number
- name, address, and phone number of the seller
- name, address, and phone number of the buyer
- name, address, and phone number of the shipper (if an outside carrier)
- list of each item shipped, including item number, description, amount shipped, cost per unit, and total cost
- items unavailable for shipment (back orders) or items to be shipped and billed at a later date
- PO number of the buyer
- date ordered by the buyer
- date shipped by the seller.

Bill of lading – A bill of lading originates when the shipper picks up the goods for shipment. It serves the following purposes:

- provides the information required for the carrier to deliver the package
- describes the carrier's contract terms
- serves as a receipt for the shipper
- documents the goods shipped (description, quantity, number, and weight)
- states the payment method
- identifies the date of pickup
- specifies detention or any location where the package will be first delivered and then sent further
- identifies the date of delivery
- identifies the contents of over-the-road trucks, including hazardous materials, as generally required by law.

Freight bill – This document serves as the carrier's invoice, separate from the invoice sent with the order. The freight bill is either paid by the customer or billed directly to the seller, depending on the terms of the transaction.

Receiving bill – When you buy materials, you will have a receiving bill describing each item shipped and the total number of items in the order.

PACE

Program for Acquiring Competence in Entrepreneurship Fourth Edition

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