CHAPTER-8
APPENDIX

------------------------------------------------------------------
THE QUESTIONNAIRE

I] Organisation profile:-

a) Name of the organization:

b) Owners name:

c) Address:

d) Phone nos.:

e) Initial investment: □ 0-10 lakhs □ 10-30 lakhs □ 30 lakhs & above

f) Number of employees: □ 0-20 □ 20-40 □ 40 & above

g) Number of working shifts: □ Ist shift □ Ist & IInd shift □ Ist, IInd & IIIrd shift

h) Annual Turnover: □ 0-10 lakhs □ 10-30 lakhs □ 30 lakhs & above

i) Product category: □ Engineering □ Manufacturing □ Maintenance/Packaging
   □ Agri Products □ Casting/Fabrication □ Chemical

j) Business objectives: □ Maximise customer satisfaction □ Maximise profit
   □ Increase return on investment □ Increase turnover (sales)

k) Participation by management level:
   □ a. Director □ General Manager
   □ b. Senior Manager □ Manager

Note: Please give your preference numbers in the boxes given against each option wherever necessary.
II] Demand forecasting:-

a) Whether you use forecasting of demand for production planning?
   
   □ Yes     □ No

(i) What period generally you consider for forecasting?
   
   □ Short term □ Medium term □ Long term □ Very large term

(ii) Which method you use for demand forecasting?
   
   □ Delphi approach □ Market research □ Life cycle analogy □ Informed judgement

(iii) Does demand forecasting methods affects efficiency of forecasting?
   
   □ Yes     □ No

b) Whether demand forecasting has helped your organization in improving procurement procedure?
   
   □ Yes     □ No

III] Material resource planning:

a) Do you use material resource planning while planning for purchasing?
   
   □ Yes     □ No

b) Why you use material resource planning?
   
   □ Inventory control  □ Scheduling  □ Product structure  □ Procurement of raw material

b) Which technique you use for material planning?
   
   □ Material planning for direct material  □ Material planning for indirect material
   □ Both     □ none
IV] Make or buy decision:

a) Which activities you outsource? Yes No
   Order processing  □  □
   Inventory management □  □
   Customer service □  □
   Procurement □  □
   Import/Export management □  □
   Information system □  □
   Manufacturing □  □
   Warehousing □  □
   Transportation □  □

b) What are the major reasons for outsourcing of above activities?
   □ Strategic reasons □ Investment reasons
   □ Lower cost □ Lack of internal capability

V] Purchasing process:-

a) Which buying method you use to procure material?
   □ Blanket orders □ Small orders □ Stock less orders □ Any other

b) How you select sources of supply?
   □ Trade directories □ Catalogs □ Internet □ Trade shows

c) Which scientific procurement method you use to purchase material?
   □ EOQ □ ABC □ POQ □ Any other
d) Which purchasing principle you find beneficial for application?

☐ Right supplier  ☐ Right quality  ☐ Right price  ☐ Right Quantity

e) How your organisation have benefited from scientific procurement method?

☐ Competitive price  ☐ Capital release  ☐ Cost reduction  ☐ Wastage control

f) What all records you use for purchasing?

☐ Records of basic information  ☐ Records showing what is available

☐ Historical  ☐ none of above

VI] Transportation of raw material:-

a) From where you purchase major raw material?

☐ Locally  ☐ Within Maharashtra  ☐ Outside Maharashtra  ☐ Foreign market

b) From where you purchase other raw materials?

☐ Locally  ☐ Within Maharashtra  ☐ Outside Maharashtra  ☐ Foreign market

c) How the raw material is transported to the factory?

☐ Separate facility  ☐ Shared facility  ☐ Through courier  ☐ Directly to the vendor

d) How you decide mode of transportation?

☐ Speed of delivery  ☐ Transportation cost  ☐ Lot size  ☐ Safety

e) Which mode of transportation you use to transport raw material?

☐ Railways  ☐ Road  ☐ Water  ☐ Air

f) What is the approximate weight of raw material (per unit)?

☐ Below 10 Kgs  ☐ Below 50 Kgs  ☐ Below 100 Kgs  ☐ Above 100 Kgs

g) What type of packaging material is used to pack raw material?

☐ Plastic containers  ☐ Corrugated containers  ☐ Metallic containers  ☐ Without packing
h) Do you store raw material in warehouse? If yes choose option,

- [ ] Owned
- [ ] Shared
- [ ] Rented
- [ ] Suppliers warehouse

**VII] Material handling:-**

a) Where is your raw material stores situated?

- [ ] Near main entrance
- [ ] Far from entrance gate
- [ ] Middle of production plant
- [ ] In isolation

b) Where are your finished goods stores situated?

- [ ] Near main entrance
- [ ] Far from entrance gate
- [ ] Middle of production plant
- [ ] In isolation

c) Which principle you use to select material handling equipment?

- [ ] Planning principle
- [ ] Operating principle
- [ ] Equipment principle
- [ ] Costing principle

d) Which group of material handling equipment you use?

- [ ] Floor operated group
- [ ] Vertical handling group
- [ ] Overhead handling group
- [ ] Allied equipments

e) What in your opinion are the factors affecting material handling system?

- [ ] Product to be handled
- [ ] Cost of material handling device
- [ ] Type of building in which material is to be handled

f) What criteria you think is important while selecting material handling equipment?

- [ ] Reduced cost of transportation
- [ ] Efficient services
- [ ] Safety
- [ ] Flexibility
g) Which is the problem area with respect to material handling, in your organisation?

[ ] In receipts & stores  [ ] In production areas
[ ] In dispatch department  [ ] No problem

VIII] Inventory management:-

a) What type of inventory is carried by your organization?

[ ] Safety  [ ] Seasonal  [ ] Pipeline  [ ] Dead stock

a) Which inventory replenishment process you use?

[ ] Pull  [ ] Push

b) Which method you use to check inventory?

[ ] Snap check  [ ] Daily check  [ ] Half yearly check  [ ] Yearly check

c) Which scientific inventory control technique you use for your organization?

[ ] ABC,  [ ] VED,  [ ] FSN,  [ ] SDE.

d) In your opinion what must be the reason for inventory pileup?

[ ] Uncertainty  [ ] Forecasting errors  [ ] Incorrect lead time  [ ] Wrong safety stock

IX] Production planning and control:-

a) Which type of production layout is used in your organisation?

[ ] Product layout  [ ] Process layout
[ ] Both in combination  [ ] any other

b) Which production type do you use to produce product?

[ ] Job  [ ] Batch  [ ] Flow  [ ] Any other

c) How you control production progress?

[ ] Gantt chart  [ ] Flow chart  [ ] Line balance  [ ] Mile stone chart
d) Give preference about important core area in production planning?

☐ Manufacturing planning  ☐ Factory planning
☐ Production planning  ☐ Financial planning

X] IT in supply chain management:-

a) What is the usage pattern of IT applications?  

<table>
<thead>
<tr>
<th>Application</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand management</td>
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<td>Manufacturing execution system</td>
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<td>Computer aided process planning</td>
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<td>Process control and optimization</td>
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<td>Engineering data management</td>
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<td>Maintenance data management</td>
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<td>Warehouse management</td>
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<tr>
<td>Transportation scheduling</td>
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<tr>
<td>Sales and distribution</td>
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<td>ERP/MRP II</td>
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<tr>
<td>Materials accounting</td>
<td></td>
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<tr>
<td>Drawings/CAD</td>
<td></td>
<td></td>
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</tbody>
</table>

XI] Transportation of Finished goods:-

a) In which market you sell your product?

☐ Locally  ☐ Within Maharashtra  ☐ Outside Maharashtra  ☐ Foreign market

b) How the finished goods are transported to the whole seller/warehouse?

☐ Separate facility  ☐ Shared facility  ☐ Through courier  ☐ Directly to the customer
c) Which mode of transportation you use to transport finished goods?
   - Railways
   - Road
   - Water
   - Air

d) What is the approximate weight of finished goods (per unit)?
   - Below 10 Kgs
   - Below 50 Kgs
   - Below 100 Kgs
   - Above 100 Kgs

e) What type of packaging material is used to pack finished goods?
   - Plastic containers
   - Corrugated containers
   - Metallic containers
   - Without packing

f) Do you store finished goods in warehouse? If yes choose option,
   - Owned
   - Shared
   - Rented
   - Whole seller warehouse

g) How you decide mode of transportation?
   - Speed of delivery
   - Transportation cost
   - Lot size
   - Safety

XII] Customer relation management:-

a) How you collect customers feed back?
   - Through wholeseller
   - Telephone
   - Questionnaire
   - No feedback

b) Do you use statistical methods to analyse collected data?
   - Chi square test
   - ANOVA test
   - Students T test
   - none

c) Do you think your customers are satisfied with your product?
   - Yes
   - No

d) What made your current customers decides to do business with you?
   - Product/service
   - Price
   - Quality
   - expertise
XIII] Network design:-

b) Do you have operations facility anywhere else?

☐ Yes  ☐ No

c) If yes, whether you use any network planning & for what purpose?

☐ Cost minimization  ☐ Profit maximization  ☐ Work planning  ☐ Timely delivery

d) Which of the four dimensions of customer service you stretched upon?

☐ Order delivery lead time  ☐ Responsiveness  ☐ Delivery reliability  ☐ Product variety

XIV] Supply chain strategy & performance measurement:-

a) How cost reduction is achieved in your organisation?

☐ Reducing inventory  ☐ Reducing logistic expenses

☐ Reducing direct material expenses  ☐ Reducing indirect material expenses

b) How revenue & profitability is improved?

☐ Selling higher margin products  ☐ Achieving higher market share

☐ Reducing back orders and lost sales  ☐ Attacking new markets

c) How you improve operational efficiency?

☐ Reducing procurement expenses  ☐ Increasing assets utilization

☐ Delaying capital expenditure  ☐ none of these

d) How you reduce working capital?

☐ Reducing inventory  ☐ Reducing accounts receivables

☐ Better inventory control  ☐ none
Please give approximate figures:

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Particulars</th>
<th>Abbreviations</th>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Days of raw material</td>
<td>DRM</td>
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<td>02.</td>
<td>Days of work in progress</td>
<td>DWIP</td>
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<td>03.</td>
<td>Days of finished goods</td>
<td>DFG</td>
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<td>04.</td>
<td>Raw material inventory</td>
<td>RM</td>
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<td>05.</td>
<td>Cost of raw material</td>
<td>CRM</td>
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<td>06.</td>
<td>Semi finished goods inventory</td>
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<td>07.</td>
<td>Cost of production</td>
<td>CP</td>
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<td>08.</td>
<td>Finished goods inventory</td>
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<td>09.</td>
<td>Cost of sales</td>
<td>CS</td>
<td></td>
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<td>10.</td>
<td>Distribution cost</td>
<td>DC</td>
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<td>11.</td>
<td>Inventories(RM,WIP,FG)</td>
<td>INV</td>
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<td>12.</td>
<td>Inventory carrying cost</td>
<td>ICC</td>
<td></td>
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<td>13.</td>
<td>Net sales</td>
<td>NS</td>
<td></td>
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<tr>
<td>14.</td>
<td>Account receivables(excluding loans&amp; adv)</td>
<td>AR</td>
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<tr>
<td>15.</td>
<td>Account payables</td>
<td>AP</td>
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</table>

Date:-                                              Name of organisation:

Signature & seal:
8.2 SCOPE FOR FURTHER RESEARCH

Students and scholars who are interested in taking a research in the field of supply chain management for small scale manufacturing units have many good topics available. Few of them are mentioned herewith

1. Distribution operations in the Future

Distribution operations in the future will need to support mobile commerce, such as consumers ordering and paying for products with their smart phones. In fact, companies that want to succeed in the long term may have no choice but to go mobile. One must be fully prepared to go when and where our customers and consumers are.

In addition to smart phones, consumers are increasingly using the internet and even television to place orders. To meet the demand for frequent, small orders that these technologies promote and enable companies will have to engage in rapid replenishment to ensure availability of their products.

Supply chains in the future will also have to serve consumers in a sustainable manner. The product will have to flow smoothly through the supply chain with minimal inventory. To reach that objective, companies are likely to collaborate on warehousing and transportation. In addition, they may share third-party logistics service providers (3PLs) that will handle direct-to-store delivery for multiple companies or coordinate shared warehousing among different parties. Companies may also collaborate on city and suburban or rural deliveries.

The rapid exchange of point-of-sale data will be necessary to signal changes in consumer demand so that manufacturers can produce the products that retailers require. In this case, the companies need to share and synchronize master data, a base of common information about product types and inventory.
2. Reverse supply chain management

A reverse supply chain deals with the reverse flow of material, where the product moves back from the end customer (point of use) to the manufacturer. It can deal with either the entire product or a part of product (e.g., packaging material like the bottles in which Coke is sold). A firm has to manage this process during different phases of the product life cycle. The most common instances of reverse supply chain are as follows:

- **New product return**: In developed markets, firms have been offering liberal return the product for any reason within a few months of purchase. Approximately six percent of retail purchase in the United States is returned by customers. In India, product returns of this kind are offered by catalogue companies and e-retailers. This category of products is usually re-packaged or re-branded for existing or new markets after minor repair operations.

- **End-of-life product return**: Because of tough environmental regulations, firms in developed markets have to take responsibility for their products at the end of the product life and must provide for collection and product remanufacturing or proper disposal. Many progressive firms have been promoting the idea of a green supply chain by ensuring that they re-use most of the components of the returned product and, consequently, achieve their goal of sustainable development. BMW has been working on the idea of a ‘totally reclaimable’ automobile.

There can also arise situations of product return at an intermediate stage of the product life cycle, as observed in the recent case of Mattel, where the company recalls its product because of unforeseen problems related to safety. (In 2007, the global toy manufacturer and marketer Mattel, Inc. recalled almost 800,000 Chinese-made toys.)
Reverse chains are more difficult to manage because of uncertainties in quantity and timing. Further, one may not have the necessary economies of scale in collection and transportation. Most firms have not been able to integrate their forward and return supply chains. In India, reverse supply chain is still in a nascent stage. However, as observed in developed markets, reverse supply chain will become an important issue for most firms in the coming decade.

**Savings in Reserve Logistics:** Reserve Logistics has become inevitable part of Supply Chain Management and it can be a significant source of costs and therefore of potential saving, in many organizations, it still receives much less attention than it deserves.

Reverse logistics is a complicated process that requires the capture of numerous data such as the frequency, volumes, and types of returns. In order to properly understand and manage the process, each product should be traced from the point of return through final disposition. Warranties and service agreements must also be monitored, and credits must be applied where needed. The goal is always to minimize the number of returns as well as the cost of handling them and do it without alienating customers.

**Few points on how to accomplish that goal**

**Develop the right policies:** The efficiency and cost of reverse logistics processes are greatly influenced by a company’s returns policy. A stingy policy will keep costs low but may hurt customer relations, whereas an overly generous one, while attracting customers, will increase costs. Any policy should be benchmarked against industry standards. The usual standard in retail is a 30-day return, but policies are harder to benchmark for business-to-business companies and will require research.

Return product acquisition is fairly straight-forward for retailers-the customer simply brings products back to the store. Sellers of larger items, such as
furniture, often contract with their delivery providers for return services. Business-to-Business companies must decide who is responsible for unsold products and compare the costs and benefits of picking up inventory themselves, having distributors pick it up and deliver it to the disposition site, or outsourcing the process to a third party logistics company.

One economical strategy is to pick up unsold merchandise during the delivery of new inventory, creating backhauls for a private or outsourced fleet. Some companies have found that collaborating with customers to streamline the return process, including at times offering financial incentives to minimize returns; can greatly reduce the need for backhauls of unsold goods.

Whatever approach a company adopts, the key to successful product acquisition is full visibility from the moment the product is returned, so that responsibility and payment for the return can be clearly assigned. Consolidation and optimization of shipments can greatly reduce transportation and handling costs.

Regarding disposal, the trick is always to balance the costs of transportation, sorting, and disposal against any potential recoverable value. High value items such as electronics and automotive parts may be inspected, remanufactured, and resold. Unsold consumer goods, by contrast, may be shifted to areas where sales are stronger. Items with a short shelf-life, such as fashion apparel, are often sold to third parties that then resell them through discount outlets or to developing countries. Should final disposal be necessary, one option is to find a recycler that is willing to pay to reuse any recoverable material?

**A symptom of inefficiency**

Smart companies and their suppliers recognize that returns are often a symptom of inefficiencies elsewhere in the supply chain. To find out why products are being returned, appropriate data should be captured, analyzed, and shared with management throughout the organization. This information should also be fed
back to the product design team, as understanding the reasons for returns and failures can lead to better product design and eventually fewer costly returns.

The theoretical goal of reverse logistics is to have zero returns, eliminating the need for the process in the first place. Researcher may use the topic of reverse logistics of various companies for effective cost reduction. By working on this topic, researcher can uncover significant sources of cost savings, gain an edge in customer and supplier relations, and collect invaluable information for improving other areas of business.

Interested researcher have a vide scope to study on collaboration between trading partners to integrate the supply chain which will help to improve real-time visibility, reduce waste and lead times, support sustainability, and enhance service levels.

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