

Benchmarking Study
Household Furniture Industry



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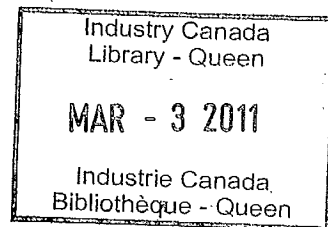
*Secteur
de l'industrie
Industries des produits
de consommation*

Canada

REACHING FOR EXCELLENCE

**A BENCHMARKING STUDY
OF
CANADIAN AND US HOUSEHOLD FURNITURE MANUFACTURERS
BASED ON 1996 FINANCIAL YEAR INFORMATION**

**GLOBAL PERFORMANCE BENCHMARKS
AND
BEST OPERATING PRACTICES**



COMMISSIONED BY INDUSTRY CANADA

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SECTION 1.0

STUDY BACKGROUND

1.0 STUDY BACKGROUND

This study was commissioned by Industry Canada in 1996. The objective of the study was to develop a set of global corporate level performance benchmarks for manufacturers of household furniture. These fifty benchmarks are presented in **Section 4**.

In North America, furniture manufacturing and furniture retailing are separate but complementary and to a large degree interdependent business functions. To understand the household furniture market therefore it was essential to include a selection of furniture retailers in the study. The criteria for their selection are provided in **Section 2**.

Household furniture, for the purpose of the study, was defined as including upholstered furniture, wooden and metal furniture. To ensure that the benchmarks that were developed would represent the top quartile of performance in North America, selection criteria were developed for the identification of potential study participants. These criteria are described in the **Section 2** together with profiles of the Canadian retailers and the Canadian and US manufacturers who participated in the study.

While the focus of the study was on the generation of performance benchmarks, considerable information was also gathered on the operating practices of the Canadian retailers and the Canadian and US manufacturers. This information was analysed and is presented in **Section 5**.

Section 3 analyses the many aspects of global competition in the household furniture market in North America as seen through the eyes of both the manufacturers and retailers. While in many areas their views are similar, there are a number of significant areas where they differ.

Finally in **Section 6**, a selection of the best operating practices of the manufacturers have been identified, many of which are composites of what a number of the participants are already doing.

SECTION 2.0

**PROFILES OF THE STUDY
PARTICIPANTS**

2.1 Canadian Furniture Manufacturers

The criteria used to identify Canadian household furniture manufacturers as possible participants in the study were:

- ▶ The top ten firms and the top ten contenders as published in Furniture Today, June 10, 1996.
- ▶ The manufacturers listed by the furniture retailers as having contributed most to their success.
- ▶ The manufacturers who had participated in previous Interfirm Comparison Studies as carried out by Industry Canada.
- ▶ Geographical location so as to have a representative distribution across the country.

The three Canadian furniture manufacturers' associations were involved in both the development of the selection criteria and in the selection of potential participants.

While the initial objectives of the study called for the development of performance benchmarks for upholstery, wooden and metal furniture manufacturers, we were unable to enlist a sufficient number of metal furniture manufacturers to justify generating a separate category for them.

- ▶ Number of participants: 20 firms, subsidiaries or operating divisions
- ▶ Annual net sales:

Up to \$20 million	8
\$20 to \$50 million	10
Above \$50 million	2
- ▶ Total Sales in 1996 \$518.5 million
- ▶ Products

Wooden furniture	14
Upholstered Product	5
Metal Furniture	1
- ▶ Location:

Quebec	10
Ontario	3
Western Canada	7
- ▶ Exports

50.5% of Net Sales (average for the sector was 45%)
30% of total Canadian exports of household furniture
- ▶ Total annual sales of participants in 1996 were 27% of total Canadian household furniture shipments.

- ▶ The twenty Canadian participants represented 3% of the total household furniture manufacturers in Canada.
- ▶ The number of people employed by the twenty Canadian participants in 1996 represented 26% of total employment in the sector.

2.2 US Furniture Manufacturers

The criteria used to identify US household furniture manufacturers as possible participants in the study were:

- ▶ That they be located in the south east in the area of High Point, North Carolina to minimize the amount of travel required to gather information.
- ▶ The US manufacturers listed by the Canadian furniture retailers as having contributed most to their success.
- ▶ Manufacturers recommended by Aktrin's office in High Point.

- ▶ Number of Participants 4 firms, subsidiaries or operating divisions

- ▶ Annual net sales: Up to \$20 million 1
 \$20 to \$50 million 2
 Above \$50 million 1

- ▶ Total Sales in 1996 \$170.5 million

- ▶ Products Wooden furniture 1
 Upholstered Product 3

- ▶ Exports 1% of Net Sales

2.3 Canadian Furniture Retailers

The criteria used to identify the Canadian furniture retailers as possible participants in the study were:

- ▶ That they have operations located in Quebec and Ontario to minimize the amount of travel required to gather the information.
- ▶ That the final selection include firms representing independent furniture retailers, furniture chains, department stores, buying groups and if possible trading houses.

- ▶ Size in terms of annual sales Up to \$5 million 1 firm
 \$5 to \$10 million 1 firm
 \$10 to \$50 million 7 firms
 \$50 million + 6 firms

▶ Type of firm	Independent	4 firms
	Buying Group	3 firms
	Chain	5 firms
	Department Store	2 firms
	Trading House	1 firm

SECTION 3.0
GLOBAL COMPETITION

Introduction

During the past ten years, household furniture has become a global product. It is becoming more and more common to find furniture from Canada, the US, Mexico, Taiwan, China, Italy, etc. on the sales floors of most of the larger furniture retailers. This has certainly been facilitated by free trade agreements such as N.A.F.T.A. However, the globalization of furniture surprisingly appears to be driven as much by retailers buying furniture from offshore suppliers as by manufacturers actively selling their product in export markets. International furniture markets such as High Point play a major role in globalization in that manufacturers from all over the world can show their products to North American and offshore retailers.

Success at the firm level however still depends on the retail consumer deciding to buy your product over all the competition. To be successful therefore, understanding the buying decision of the retail consumer is most important. At the risk of over simplification, our experience has been that the consumer, in the process of coming to a buying decision, evaluates five basic competitive factors. These are *price, design, quality, delivery* and *service*. The buying decision begins with an initial sorting of the available products into those that generally meet the predetermined requirement criteria and those that do not. Each product meeting these criteria is then evaluated against the five competitive factors and an overall weighting is developed. The product with the highest weighting will be the one the consumer buys. Obviously this process is very subjective in most cases. However if it were possible to identify a broad range of competitive factors and then rank them in order of importance the result would provide a much clearer view of the dynamics of competition in the global furniture market.

In working with the furniture industry over the past twelve years, we have identified seventeen competitive factors that relate directly or indirectly to the retail consumer's buying decision. In 3.1 we had the twenty four manufacturers and the fifteen retailers weight each of these factors in terms of its influence on their sales volume. The manufacturers thus looked to the retailer as their customer and the retailers looked to their retail customers. The factors were then ranked. Comparing the results provides an interesting insight into the perceived priorities of each group.

To generate other views, manufacturers were asked to list their three most important success factors and where they excelled as a company and as manufacturers of furniture. In addition we have captured some interesting views of the market as seen by retailers.

Much of this information is obviously subjective. However, in that it compares different views of the market, it is a useful basis on which to develop competitive priorities. It also suggests that if manufacturers and retailers were willing to collaborate more than they have in the past it would almost certainly improve their joint sales volume and thus their profitability.

3.1 Global Competitive Factors

- ▶ To begin the process of evaluating global competition in the North American household furniture market, seventeen objective competitive factors were identified.
- ▶ These factors were then individually weighted by the Canadian and US furniture manufacturers and by the Canadian furniture retailers who participated in the study. The basis of the weighting was their perceived influence on sales volume. Each factor has been given a weight on a scale of 1 to 10 where 10 is high and 1 is low. The factors were then ranked based on their average weighting.

Competitive Factors vs Sales Volume	Canadian Retailers		Canadian Manufacturers		US Manufacturers	
	Rank	Weight	Rank	Weight	Rank	Weight
DELIVERY The time between the placing of an order and the arrival of the goods.	1	9.1	3	8.3	6	6.8
PRODUCT QUALITY Workmanship, condition on arrival, absence of after sales service complaints.	2	9.0	1	8.9	3	8.0
SERVICES The before and after sales service provided by the manufacturer.	3	8.6	4	7.9	7	6.3
TRAINING The training provided by the manufacturer for the retailer's sales personnel.	4	8.2	N/A	N/A	N/A	N/A
PRODUCT DESIGN The style and form, the materials used and the utility of the product.	4	8.2	2	8.7	2	8.3
RETAIL PRICE The price charged by the retailer.	5	7.3	5	7.7	5	7.3
REPUTATION The name and reputation of the manufacturer.	6	6.7	11	6.4	6	7.0
MARKETING SUPPORT Product literature, point of sale material, cutaways etc., co-op advertising.	7	6.5	5	7.7	4	7.8
TERMS OF SALE The manufacturer's terms of sale.	8	6.1	N/A	N/A	N/A	N/A

Competitive Factors vs Sales Volume	Canadian Retailers		Canadian Manufacturers		US Manufacturers	
	Rank	Weight	Rank	Weight	Rank	Weight
Competitive Factors						
BRAND RECOGNITION The recognition by the retail customers of the manufacturer's brand name.	9	5.1	11	6.4	6	7.0
PRODUCT RANGE The range of products available in each of the manufacturer's lines or collections.	10	4.9	6	7.6	7	6.3
PRICE TO RETAILER The price charged to the retailer by the manufacturer.	N/A	N/A	8	7.4	5	7.3
MARKETING ACTIVITIES The manufacturer's marketing activities.	N/A	N/A	5	7.7	4	7.8
SHOWROOMS The manufacturer's showrooms.	N/A	N/A	7	7.5	3	8.0
MARKET RESEARCH The market research done by the manufacturer.	N/A	N/A	3	6.1	9	3.5
MATERIALS The materials used by the manufacturer.	N/A	N/A	5	7.7	1	8.8
RETAILER FEEDBACK The market feedback the manufacturer receives from the retailer.	N/A	N/A	9	7.3	4	7.8

Canadian Manufacturers vs Canadian Retailers

- ▶ In a perfect world, retailers and manufacturers could be expected to weight each of the competitive factors at approximately the same level and to a degree this was the case. However there were some exceptions.
- ▶ *Delivery* was ranked as the most important competitive factor by the retailers with an average weighting of 9.1. Manufacturers ranked it in third position with a weighting of 8.3. This suggests that the manufacturers may not be placing enough emphasis on reducing their delivery times.
- ▶ *Product quality* was weighted almost equally by both manufacturers and retailers at 8.9 and 9.0. Quality is seen by both groups as being one of the two most important competitive factor.

- ▶ Before and after *sales service* was ranked somewhat higher by the retailers which is understandable considering they must address the problems raised by their retail clients.
- ▶ The *training of the retailer's sales staff* was ranked in fourth position by the retailers. Manufacturers acknowledge that they have a responsibility in this area but are not well organized to provide formal training. Most training is done by the manufacturers' sales representatives who in turn must be trained by the manufacturers in order to be able to offer this service.
- ▶ *Product design* was ranked fourth by retailers and second by manufacturers. The weightings at 8.2 and 8.7 were reasonably close.
- ▶ The *retail price* weightings at 7.3 and 7.7 were surprisingly close.
- ▶ The weightings of the value of *brand recognition* in generating sales volume were substantially different with the retailers giving it 5.1 and the manufacturers 6.4. This tends to reinforce the perception that the retailers have reduced furniture to a commodity where brand recognition is of little value.
- ▶ The manufacturers ranked *product range* in sixth position and gave it a weighting of 7.6. The retailers, on the other hand, ranked it in tenth position and gave it a weighted of 4.9. This discrepancy may reflect a reluctance on the part of the smaller retailers to carry a full product inventory.
- ▶ *Market research* was not weighted by the retailers. The manufacturers gave it a weighting of 6.1 which ranked it in twelfth position. However, while the manufacturers are currently doing only modest work in this area, as a group, they would hope to do considerably more in the near future, at which time they would rank it third with a weighting of 8.1.
- ▶ *Retailer feedback* was not ranked by the retailers. Manufacturers gave it a weight of 7.3 which ranked it ninth. This ranking appears low and is probably the result of manufacturers not having developed this information channel sufficiently.

Canadian vs US Manufacturers

- ▶ The relative ranking of the competitive factors related directly to the product including Product Design, Product Quality, Materials, Price to the Retailer and the Retail Price are relatively consistent between the Canadian and US manufacturers with the US manufacturers placing slightly more emphasis on the Materials used.

- ▶ In the area of supplier performance, including Delivery, Reputation, Marketing Support, Brand Recognition and Marketing Activities the results are similar except for delivery where the US manufacturers place a substantially lower weighting.
- ▶ Market Research is ranked low by both. The Canadian manufacturers appear to recognise this short coming and say they intend to focus more on this area in the future.

3.2 Performance - US vs Canada

- ▶ The Canadian retailers were asked to evaluate the performance of their US furniture suppliers compared to their Canadian. The evaluations were based on the US firms being much better, somewhat better, about the same, somewhat worse and much worse than the Canadian. These evaluations were then given a weighting on a scale of 1 to 10 of 10, 7.5, 5, 2.5 and 0.
- ▶ All weightings above 5 thus indicate that the performance of the US manufacturers was judged to be better than the Canadian.

Competitive Factors	Weighting
DELIVERY The time between the placing of an order and the arrival of the goods.	4.9
PRODUCT QUALITY Workmanship, conditional on arrival, absence of after sales service complaints.	1.9
SERVICES The before and after sales service provided by the manufacturer.	4.4
TRAINING The training provided by the manufacturer for the retailer's sales personnel.	5.2
PRODUCT DESIGN The style and form, the materials used and the utility of the product.	7.1
PRICE TO RETAILER The price charged by the retailer.	5.7
REPUTATION The name and reputation of the manufacturer.	5.3

Competitive Factors	Weighting
MARKETING SUPPORT Product literature, point of sale material, cutaways etc., co-op advertising.	5.2
ADVERTISING The manufacturer's contribution to the retailer's advertising and promotion.	5.2
TERMS OF SALE The manufacturer's terms of sale.	2.6
BRAND RECOGNITION The recognition by the retail customers of the manufacturer's brand name.	5.2
PRODUCT RANGE The range of products available in each of the manufacturer's lines or collections.	8.7

- ▶ The only areas where US performance is seen to be significantly better than Canadian are *product range* at a weighting of 8.7 and *product design* at 7.1.
- ▶ US *product quality* on the other hand was weighted much lower than Canadian.
- ▶ The US manufacturer's *price to the retailer* was seen to be marginally better than the Canadian. In this context Canadian manufacturers felt that parity between the Canadian and US dollar was in the \$0.84 to \$0.80 range. Above an exchange rate of \$0.84, Canadian manufacturers selling into the US market would begin to be less competitive.

3.3 Corporate Success Factors

- ▶ The Canadian and US furniture manufacturers were asked to list the factors which they felt had most contributed to their corporate success.
- ▶ These factors are listed in the table below and have been ranked based on the number of times they were mentioned.

Success Factors	Canada		US	
	Rank	Times Mentioned	Rank	Times Mentioned
Product Quality	1	10	1	2
Product Design	1	10	1	2
The quality of their employees and their	2	6		
Their ability to provide shorter delivery times	3	5		
An effective Sales and Marketing organization	3	5	2	1
Providing best value being a combination of price	4	4		
The availability of capital for expansion	5	3		
The quality of their retailers	5	3		
Their ability to control their costs	5	3		
Their ability to manage strategically	6	2		
The relative value of the Canadian dollar	6	2		
The quality of their US sales staff	6	2		
The flexibility of their manufacturing organization	6	2	2	1
Their ability to identify and serve specific market	6	2		
A well recognized brand name.	6	2		
The quality of their customer service	6	2		
Their ability to offer product line exclusivity	7	1		
The quality and effectiveness of their	7	1		
Their range of product offered in each product line	7	1		
The fact that they are good listeners			1	2
Being a family owned business			2	1

- ▶ These success factors provide an interesting view of the business areas that management see as being directly related to their success in the market place.
- ▶ Some of the factors are objective in that they can be documented and measured such as product quality and delivery. Others are subjective such as the evaluation of the people working for the company and its organizational form.

3.4 Areas of Corporate Excellence

- ▶ The areas in which the manufacturers *as a total company* felt that they were superior to their competition were:

	Times Mentioned	
	Canada	US
Consistently superior product quality	7	
Shorter delivery times	5	2
A more flexible manufacturing operation	6	2
Better product design	5	1
A more effective sales and Marketing operation	5	1
Better customer service	3	1
Products that consistently represent best value	4	
A broader range of product	2	1
Lower costs	1	1
Better materials	1	
More new products	1	
A good corporate reputation	1	

3.5 Areas of Manufacturing Excellence

- ▶ Each of the Canadian and US manufacturers was asked to list any aspects of their *manufacturing operation* which they considered better than their competition and which were thus critical to their success. The aspects identified are ranked below in terms of the number of times they were mentioned.

	Times Mentioned	
	Canada	US
Using automated equipment	4	2
Operating a gain sharing program	4	
Using production cells	3	
State-of-the-art finishing equipment	3	
A shorter production cycle time	3	
Higher quality standards	3	
Having their own drying kilns	2	
Having a skilled labour force	2	
Superior fabric cutting operation	1	1
Superior packaging	1	1
A higher level of labour productivity	1	1
Above average maintenance	1	
Lower labour costs	1	
Union free	1	
Ability to meet customer requests	1	1

3.6 Retailers' Recommendations for Change

- ▶ The following is a sampling of the recommendations made by the Canadian retailers which they felt would lead to increased sales and improved profitability for both retailers and manufacturers:
 - ▶ Furniture is generally under-valued and under-sold. There is a need to raise the consumers' awareness that furniture is a *good buy* today.
 - ▶ Look to other industry sectors to see how best to *convince consumers* that furniture is a good buy.
 - ▶ There is a need to more effectively *sell the quality of Canadian furniture*. Furniture must be seen to be an investment rather than a disposable commodity.
 - ▶ Furniture should be sold as a *support to a lifestyle*, not as a commodity.
 - ▶ Manufacturers must work more closely with their retailers. *Selling is a joint responsibility*.
 - ▶ There should be weekly national *newspaper sections devoted to furniture* similar to those for automobiles and travel.
 - ▶ Delivery should be *4 to 5 days* for normal products.
 - ▶ Need for *improved styling and design*.
 - ▶ Manufacturers must devote more effort to *teaching store sales personnel* how best to sell their products.
 - ▶ Must help customers identify quality in furniture and thus *equate quality to price*.
 - ▶ Manufacturers should *listen more often to consumers*. This can best be done through focus groups.
 - ▶ There is a general demand for *more exclusivity agreements*.

3.7 Who Goes to Which Furniture Markets

- ▶ The following are the furniture markets attended by the Canadian furniture retailers and by the Canadian and US furniture manufacturers who participated in the study.

Trade Shows	Canada		US
	Retailers	Manufacturers	Manufacturers
Montreal	1	3	
Toronto	15	9	
High Point	15	12	4
San Francisco	3	2	1
Tupelo MS	1		1
Dallas		1	
Mexico	1		
Frankfurt	1		
Cologne	2		
Shows in Asia	1		

3.8 Retailers' Buying Preferences - Canadian vs Imports

- ▶ The following is a summary of the buying preferences of the Canadian retailers.

Preferences	Number of Retailers
Only buy Canadian	1
Focus on Canadian firms first.	9
Minor preference to Canadian suppliers	1
Buy wherever most advantageous	4

SECTION 4.0

PERFORMANCE BENCHMARKS

4.1 Introduction

4.1.1 Benchmarking

- ▶ A *benchmark* is a performance objective. Benchmarks can be established at the total company level, at the departmental level and at the operating process level. Company level benchmarks could be return on assets, return on sales or corporate annual sales growth. Departmental level benchmarks could be production labour cost as a percentage of total manufacturing cost or value added per square foot of production area. Operating process benchmarks could be production labour hours per unit of furniture upholstered or square feet of upholstery material cut per hour.
- ▶ *Benchmarking* is the process of establishing performance objectives.
- ▶ The purpose of benchmarking is to identify, document, quantify and apply "*best practices*" be they at the corporate, departmental or operating process level.
- ▶ The process of benchmarking may be carried out at two different levels. At the *Corporate* level, operating parameters relating to corporate and departmental performance are measured and benchmarks are established. At the *Process* level, operating parameters related to specific operating processes are measured and benchmarks are established.
- ▶ At the corporate level, benchmarking involves comparing the operations of *firms in the same industrial sector* who providing similar products or services. This level of benchmarking is also referred to as sector benchmarking.
- ▶ At the process level, benchmarking involves comparing similar operating processes. These processes may be employed by firms in entirely different business areas.
- ▶ The benchmarks in this report relate to the *corporate level performance* of household furniture manufacturers producing upholstered product and wooden furniture.
- ▶ These benchmarks are provided at the *total company* and the *departmental* levels and where appropriate have been grouped by *product area* to provide the most meaningful performance comparisons.

- ▶ The performance data from which these benchmarks were developed was gathered from a selected group of *twenty Canadian and four US household furniture manufacturers*.
- ▶ Where appropriate, *autonomous product divisions* of multi-plant companies have been treated as independent operating entities.
- ▶ These benchmarks thus represent *globally competitive corporate level performance objectives*.
- ▶ The benchmark level for each parameter measured has been set at the *bottom of the first quartile* of the actual performance results achieved by study participants, ranked from best to worst. Thus 25% of the participants currently perform at levels at or above each benchmark.
- ▶ Because many of the benchmarks are inter-related it is important that they not be *taken out of context*.

4.1.2 Using Benchmarks

- ▶ Benchmarks should be employed as *performance objectives*.
- ▶ Benchmarking is often a *two stage process*. Corporate level benchmarking of a group of firms representing an industrial sector provides a set of performance objectives against which all firms in the sector can compare their own performance. From this comparison, each firm is able to identify the areas of their operation where their performance is below a benchmark level. With this information, they can also *prioritize the areas to address* based on their potential for generating increased returns.
- ▶ In areas where performance is found to be below the benchmark level, substantial improvement can often be realized through *re-organizing or re-engineering* a particular operation or production process.
- ▶ Where performance improvement is being limited by a specific operating process, the next step would be to organize a process level *best practice benchmarking study* with one or more firms using the same or similar processes and who have been selected for their excellence in the particular area. These firms do not necessarily have to be producing the same products or services.
- ▶ Many benchmarks can be used as performance objectives in the development of *operating budgets or business plans*.

- ▶ To be able to continuously benefit from these benchmarks, it would be necessary to measure actual performance by generating the appropriate performance ratios on a regular basis and then *reviewing actual performance against the benchmarks*.
- ▶ It would also be useful to generate a set of *performance ratios from your annual operating budget* and then compare these to the benchmarks. This will give you a forecast of your performance in the following year and may indicate where action should be taken to improve performance.

SECTION 4.2

**CORPORATE PERFORMANCE
BENCHMARKS**

4.2.1 RETURN ON ASSETS

Benchmark:

At the Product Level

Upholstery:	14%
Wooden Furniture:	20%

Explanation

This benchmark indicates the before tax level of financial return that it should be possible to generate on the operating assets employed in a business that is manufacturing and selling household furniture.

Performance Ratio

Operating Profit / Operating Assets

Ratio Components

Operating Profit:	The net income before tax derived from the manufacture and sale of furniture adjusted to eliminate any costs associated with borrowed capital, any un-related income, bad debt expense, any un-related expenses, any gain or loss on the sale of capital assets,
Operating Assets:	The total of the fixed and current assets involved in the manufacture and sale of furniture. Fixed assets have been adjusted to current value. Current assets are the average of the opening and closing balances for the year.

Applications

- ▶ As a means of evaluating the financial return generated by a household furniture manufacturing business on its investment in fixed and current assets.
- ▶ As a means of comparing the macro level financial performance of two or more household furniture manufacturers.
- ▶ As a performance objective for future planning.
- ▶ As a performance objective for budgeting.
- ▶ As a performance objective against which to evaluate future investment opportunities.

4.2.2 RETURN ON SALES

Benchmark:

At the Product Level

Upholstery:	8.0%
Wooden Furniture:	14.5%

Explanation

This benchmark provides an objective for the before tax level of return on net sales revenue derived from the sale of household furniture.

Performance Ratio

Operating Profit / Net Sales

Ratio Components

Operating Profit:

The net income before tax derived from the manufacture and sale of furniture adjusted to eliminate any costs associated with borrowed capital, any un-related income, bad debt expense, any un-related expenses and any gain or loss on the sale of capital assets.

Net Sales:

Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a performance objective against which to evaluate the macro level sales performance of a household furniture manufacturer.
- ▶ As a performance objective against which to evaluate the macro sales performance of a product division of a household furniture manufacturer.
- ▶ As a standard to be used in evaluating potential investment opportunities in household furniture manufacturing.
- ▶ As a planning or budgeting tool.

4.2.3 ACCOUNTS RECEIVABLE

Benchmark:

At the Product Level

Upholstery:	22 days
Wooden Furniture:	44 days

Explanation

This benchmark indicates the level of receivables measured in days of sales being carried by successful furniture manufacturers on the products they sell to retailers in the domestic and export markets. This benchmark is shown at the total company as opposed to the divisional level.

Performance Ratio

Accounts Receivable in Days of Sales

Ratio Components

Accounts Receivable: Average of the opening and closing accounts receivable balances as reported on the balance sheet.

Applications

- ▶ As a financial performance objective for the management of Accounts Receivable.
- ▶ As a basis on which to plan for future credit requirements.
- ▶ As a benchmark against which to evaluate sales operations in different geographic locations.
- ▶ As a tool to be used to evaluate potential acquisitions or investments in furniture manufacturing.

4.2.4 BAD DEBTS AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	0.2%
Wooden Furniture:	0.2%

Explanation

This benchmark indicates the level of bad debts experienced by the most successful and experienced furniture manufacturers on their sales in the domestic and export markets.

Performance Ratio

Bad Debts / Net Sales

Ratio Components

Bad Debts: As reported in the financial statements. For the purpose of this comparison Bad Debts are not included as an expense in the calculation of Operating Profit.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a benchmark against which to evaluate current bad debt experience.
- ▶ As a basis on which to budget for future losses from bad debts.
- ▶ As a tool for the evaluation of acquisition or investment opportunities.

4.2.5 FIVE YEAR AVERAGE ANNUAL SALES GROWTH

Benchmark:

At the Product Level

Upholstery:	20%
Wooden Furniture:	25%

Explanation

This benchmark provides an objective for average annual sales growth at the total company level and at the level of product divisions for firms selling their household furniture into both the domestic and export markets.

Performance Ratio

Sales Growth 1991-96 / 5 years

Ratio Components

Sales Growth: The average year-over-year growth in sales averaged over the past five years.

Applications

- ▶ As an objective for annual budgeting or for longer term business planning.
- ▶ As a basis against which to evaluate sales performance at the total company or product division level.
- ▶ As a tool for evaluating investment opportunities in household furniture manufacturing.

4.2.6 MANUFACTURING CAPACITY UTILIZATION

Benchmark:

At the Product Level

Upholstery:	90%
Wooden Furniture:	90%

Explanation

This benchmark provides an indication of the current level of capacity utilization of the more successful household furniture manufacturers.

Performance Ratio

Gross Sales / Manufacturing Capacity

Ratio Components

Gross Sales:	Total sales before returns and discounts including the sales of furniture purchased for resale and charges for freight.
Manufacturing Capacity:	An estimate of the total manufacturing capacity in sales dollars that could be achieved from the existing manufacturing facilities without the addition of significant new capital investment.

Applications

- ▶ As a standard against which to evaluate the level of utilization of manufacturing capacity.
- ▶ As an objective to be used for annual budgeting and long term business planning.
- ▶ As an objective on which to base plans for the improvement of manufacturing operations.
- ▶ The calculation of operating capacity utilization should be the first step in any performance evaluation.

SECTION 4.3

MANUFACTURING BENCHMARKS

4.3.1 MANUFACTURING COST AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	76%
Wooden Furniture:	68%

Explanation

This benchmark represents an objective level for total manufacturing cost expressed as a percentage of net sales.

Performance Ratio

Manufacturing Cost / Net Sales

Ratio Components

Manufacturing Cost: The total cost of manufacturing including materials, labour and manufacturing overhead. Manufacturing overhead includes depreciation and building occupancy expense. Any costs associated with product development are not included.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to compare the total cost of manufacturing at the total company or product division level.
- ▶ As a standard against which to evaluate investment opportunities in household furniture manufacturing.
- ▶ As an objective on which to base plans for modifications to manufacturing capacity.

4.3.2 MATERIAL COST AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	54%
Wooden Furniture:	36%

Explanation

Materials are one of the three cost areas of Total Manufacturing that have been benchmarked. This benchmark provides an objective level for the cost of materials as a percentage of net sales.

Performance Ratio

Material Cost / Net sales

Ratio Components

Material Cost: The purchase cost of materials, components and any sub-contracted manufacturing operations adjusted for the change in raw material inventory. These costs include, where applicable, incoming freight and purchase discounts.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare material costs at the total company or product division level.
- ▶ As an objective against which to measure the effects of changes in the materials used.
- ▶ As an objective for measuring the effectiveness of a purchasing operation.
- ▶ As an objective for budgeting or business planning.

4.3.3 PRODUCTION LABOUR COST AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	20%
Wooden Furniture:	24%

Explanation

This benchmark provides an objective against which to compare the cost of production labour at the product level.

Performance Ratio

Production Labour Cost / Net Sales

Ratio Components

Production Labour Cost: Includes the salaries and benefits for direct and indirect labour and production supervision. It does not include labour costs associated with product development, or warehousing and shipping.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to evaluate the cost of production labour at the product level.
- ▶ As an objective to be used for budgeting and business planning.

4.3.4 AVERAGE HOURLY LABOUR RATE

Benchmark:

At the Product Level

Upholstery:	\$11.00
Wooden Furniture:	\$10.50

Explanation

This benchmark provides an indication of the average hourly production labour rate at the total company level. Because labour rates will vary by geographic location this benchmark should be used more as a reference point than as an objective to be achieved.

Performance Ratio

Production Labour Cost / Production Hours Worked

Ratio Components

Production Labour Cost: Includes the salaries and benefits for direct and indirect labour and production supervision. It does not include labour costs associated with product development, or warehousing and shipping.

Production Hours Worked: The actual hours worked per year by direct and indirect labour and production supervision including overtime but excluding annual vacation and statutory holidays.

Applications

- ▶ As a general reference point against which to compare actual production labour rates.

4.3.5 PRODUCTION OVERHEAD COST AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	2%
Wooden Furniture	7%

Explanation

This benchmark provides a performance objective for total Production Overhead Costs.

Performance Ratio

Production Overhead Costs / Net Sales

Ratio Components

Production Overhead Costs: Includes repairs and maintenance labour and materials, occupancy cost, consumable supplies and utilities, depreciation.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a performance objective against which to evaluate current costs.
- ▶ As an objective on which to base future budgets and business plans.
- ▶ As an objective to be used in the evaluation of investment opportunities.

SECTION 4.4

OPERATING EXPENSE BENCHMARKS

4.4.1 TOTAL OPERATING EXPENSE AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	13.8%
Wooden Furniture:	17.0%

Explanation

This benchmark is a performance objective for total operating expense which includes Administration, Sales and Marketing, Management Information Systems and Warehousing.

Performance Ratio

Total Operating Expense / Net Sales

Ratio Components

Total Operating Expense: Includes all expenses associated with Administration, Sales and Marketing, Management Information Systems, and Warehousing.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure current performance.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of operating divisions.

4.4.2 WAREHOUSE AND SHIPPING EXPENSE AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery	1.5%
Wooden Furniture:	0.9%

Explanation

This benchmark provides a performance objective for expenditure on warehousing and shipping.

Performance Ratio

Warehouse and Shipping Expense / Net Sales

Ratio Components

Warehouse & Shipping Expense: Includes all costs associated with Warehousing and Shipping including any cost for the local delivery of product.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure current performance.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of operating divisions.

4.4.3 SALES AND MARKETING EXPENSE AS A PERCENTAGE OF NET SALES

Benchmark:

At Product Level:

Upholstery	8.0%
Wooden furniture	11.8%

Explanation

This benchmark provides a performance objective for Sales and Marketing expense which is a sub-set of Operating Expense.

Performance Ratio

Sales and Marketing Expense / Net Sales

Ratio Components

Sales and Marketing Expenses: Includes all costs associated with Sales and Marketing including salaries and benefits, commissions, travel expense, materials, memberships, occupancy cost, advertising and promotion, product development and the cost of showrooms.

Net Sales:

Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure current Sales and Marketing performance.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the Sales and Marketing function across operating divisions.

4.4.4 SALES & MARKETING SALARIES & COMMISSIONS AS A PERCENTAGE OF SALES AND MARKETING EXPENSE

Benchmark:

At Product Level:

Upholstery	55%
Wooden furniture	70%

Explanation

This benchmark provides a performance objective for salary and commission expense associated with the Sales and Marketing function. It is a sub-set of Sales and Marketing Expense.

Performance Ratio

Salaries & Commissions / Sales & Marketing Expense

Ratio Components

Salaries & Commissions: Includes the salary and benefit costs for all Sales and Marketing personnel and the commissions paid to sales agents.

Sales & Marketing Expense: Includes all costs associated with Sales and Marketing including salaries and benefits, commissions, travel expense, materials, memberships, occupancy cost, advertising and promotion, product development and the cost of showrooms.

Applications

- ▶ As a standard against which to measure the current cost of Sales and Marketing salaries and commissions.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the Sales and Marketing functions of operating divisions.

4.4.5 ADVERTISING AND PROMOTION EXPENSE AS A PERCENTAGE OF SALES AND MARKETING EXPENSE

Benchmark:

At Product Level:

Upholstery:	21 %
Wooden furniture:	7 %

Explanation

This benchmark provides a performance objective for Advertising and Promotion expense.

Performance Ratio

Advertising and Promotion Expense / Sales & Marketing Expense

Ratio Components

Advertising & Promotion Expense:	Includes all external costs associated with Advertising and Promotion.
Sales & Marketing Expense:	Includes all costs associated with Sales and Marketing including salaries and benefits, commissions, travel expense, materials, memberships, occupancy cost, advertising and promotion, product development and the cost of showrooms.

Applications

- ▶ As a standard against which to measure the current performance of the advertising and promotion function.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the advertising and promotional function across operating divisions.

4.4.6 SHOWROOM EXPENSE AS A PERCENTAGE OF SALES AND MARKETING EXPENSE

Benchmark:

At Product Level:

Upholstery	11 %
Wooden Furniture	10 %

Explanation

This benchmark provides a performance objective for the cost associated with the operation of showrooms. Because some firms only staff their showrooms for trade shows, this benchmark should be used to provide general guidance as to the optimum expenditure in this area.

Performance Ratio

Showroom Expense / Sales & Marketing Expense

Ratio Components

Showroom Expense:	Includes all costs associated with the maintenance of external showrooms including rental expense, utility cost, external labour cost, materials, etc.
Sales & Marketing Expense:	Includes all costs associated with Sales and Marketing including salaries and benefits, commissions, travel expense, materials, memberships, occupancy cost, advertising and promotion, product development and the cost of showrooms.

Applications

- ▶ As a general indication of the level of expenditure on showrooms.

4.4.7 ADMINISTRATION EXPENSE AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	4%
Wooden Furniture:	4%

Explanation

This benchmark provides a performance objective for expenditure on administration.

Performance Ratio

Administration Expense / Net Sales

Ratio Components

Administration Expense:

Includes all costs associated with the administration function including salaries and benefits, travel, professional services, office supplies, insurance, bank charges and occupancy cost but does not include interest income or any costs associated with corporate debt.

Net Sales:

Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure the current performance of the Administration function.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the administrative function across operating divisions.

4.4.8 ADMINISTRATIVE LABOUR COST AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	2%
Wooden Furniture:	2%

Explanation

This benchmark provides a performance objective for administrative labour costs.

Performance Ratio

Administrative Labour Cost / Net Sales

Ratio Components

Administrative Labour Cost: Includes salary and benefit costs for administrative personnel, excluding those for the Management Information Systems (MIS) function.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure the current performance of the Administration function.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the administrative function across operating divisions.

4.4.9 INFORMATION SYSTEMS EXPENSE AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	0.3%
Wooden Furniture:	0.3%

Explanation

This benchmark provides a performance objective for costs associated with the Management Information Systems (MIS) function.

Performance Ratio

Systems Costs / Net Sales

Ratio Components

Systems Costs:	Includes all costs associated with the MIS function including salaries and benefits, occupancy costs, travel, materials, depreciation of computer equipment, software costs and professional services.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a standard against which to measure the current performance of the MIS function.
- ▶ As an objective for budgeting and business planning.
- ▶ As a standard for the evaluation of investment opportunities.
- ▶ As a standard against which to measure the performance of the MIS functions across operating divisions.

4.4.10 TRAINING EXPENSE PER EMPLOYEE

Benchmark:

At the Product Level

Upholstery:	\$750
Wooden Furniture:	\$750

Explanation

This benchmark provides a performance objective for costs associated with training within the firm.

Performance Ratio

Training Cost / Total Employees

Ratio Components

Training Cost:	Includes materials and professional services.
Total Employees:	Total full time equivalent employees.

Applications

- ▶ Because many of the firms in this study did not operate a formal training program, this benchmark should be used to provide a general indication of the level of expenditure on training within the sector.
- ▶ Quebec has legislated that a minimum of 1% of annual sales must be spent on training.

SECTION 4.5

VALUE ADDED BENCHMARK

4.5.1 VALUE ADDED PER SQUARE FOOT OF MANUFACTURING SPACE AT 90% OF CAPACITY

Benchmark:

At the Product Level

Upholstery:	\$130
Wooden Furniture:	\$110

Explanation

This benchmark provides a performance objective for value added per square foot of manufacturing space. It is a measure of the effectiveness of manufacturing space in contributing to corporate profitability. This benchmark has been calculated at 90% of capacity to eliminate the level of capacity utilization variable.

Performance Ratio

Value Added / Manufacturing Space (sq. ft.)

Ratio Components

Value Added: Net sales at 90% of capacity less any purchased goods or services.

Manufacturing Space: The total floor space in square feet used for manufacturing but excluding warehousing and shipping space.

Applications

- ▶ As a standard against which to measure manufacturing space utilization.
- ▶ As a performance objective for budgeting and business planning.
- ▶ As a standard against which to evaluate alternate manufacturing locations.
- ▶ As a standard to be used to evaluate investment opportunities.

SECTION 4.6

SPACE UTILIZATION BENCHMARK

4.6.1 NET SALES PER SQUARE FOOT OF MANUFACTURING SPACE AT 90% OF CAPACITY

Benchmark:

At the Product Level

Upholstery:	\$450
Wooden Furniture:	\$350

Explanation

This benchmark provides a performance objective for manufacturing space utilization in terms of sales per square foot. The benchmark has been established at a 90% capacity utilization level on the basis that most manufacturing operations have been designed to operate at this level.

Performance Ratio

Net Sales / Manufacturing Space (sq. ft.)

Ratio components

Net Sales: Gross Sales at 90% of capacity less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Manufacturing Space: The total floor space in square feet used for manufacturing but excluding warehousing and shipping space.

Applications

- ▶ As a performance objective against which to compare the utilization of manufacturing space.
- ▶ As an objective to be used when comparing the utilization of manufacturing space across plant locations.
- ▶ As an objective to be used when modifying or enlarging a manufacturing operation.
- ▶ As an objective for budgeting or business planning.

SECTION 4.7

**LABOUR CAPITALIZATION
BENCHMARK**

4.7.1 INVESTMENT IN MACHINERY AND EQUIPMENT PER PRODUCTION EMPLOYEE

Benchmarks:

At Product Level

Upholstery:	\$12,000
Wooden Furniture:	\$31,000

Explanation

This benchmark provides an objective for the value of manufacturing equipment per production employee. As labour capitalization increased, so does labour productivity. It should be noted that this ratio is based on the current value of machinery and equipment. This eliminates the variation in equipment value due to its age.

Performance Ratio

Machinery & Equipment / Production Employees

Ratio Components

Machinery & Equipment:	Includes the current value of all machinery and equipment associated with the manufacture of product.
Production Employees:	The total number of full time equivalent employees involved in the manufacturing of furniture.

Applications

- ▶ With the increased use of automation in manufacturing, this benchmark provides a useful overall objective for the level of machinery and equipment required to remain globally competitive.
- ▶ As an objective when comparing the labour capitalization of different plants in the same product area.
- ▶ As an objective for capital budgeting and business planning.
- ▶ As an objective to be used when evaluating investment opportunities.

SECTION 4.8

**LABOUR PRODUCTIVITY
BENCHMARKS**

4.8.1 NET SALES PER TOTAL EMPLOYEE

Benchmark:

At the Product Level

Upholstery:	\$115,000
Wooden Furniture:	\$103,000

Explanation

This benchmark provides an overall objective for labour productivity across the company.

Performance Ratio

Net Sales / Total Employee

Ratio Components

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Total employees: The total number of full time equivalent employees employed by the firm.

Applications

- ▶ As a objective to be used to monitor corporate labour productivity.
- ▶ As an objective to be used when comparing labour productivity across companies.
- ▶ As an objective when developing labour productivity improvement initiatives.
- ▶ As an objective for budgeting and business planning.

4.8.2 NET SALES PER PRODUCTION EMPLOYEE

Benchmarks:

At Product Level

Upholstery:	\$140,000
Wooden Furniture:	\$122,000

Explanation

This benchmark provides an objective for labour productivity at the manufacturing level.

Performance Ratio

Net Sales / Production Employees

Ratio Components

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Production Employees: The total number of full time equivalent employees involved in the manufacturing of furniture.

Applications

- ▶ As an objective against which to monitor manufacturing labour productivity.
- ▶ As an objective to be used when developing initiatives to improve labour productivity.
- ▶ In conjunction with the labour capitalization benchmark, these performance objectives should be used when planning for and monitoring changes in the manufacturing process.
- ▶ As an objective for budgeting and business planning.

4.8.3 NET SALES PER ADMINISTRATIVE AND MANAGEMENT INFORMATION SYSTEMS (MIS) EMPLOYEE

Benchmark:

At the Product Level

Upholstery:	\$2 million
Wooden Furniture:	\$2 million

Explanation

This benchmark provides an objective for the level of Administrative and MIS employees.

Performance Ratio

Net Sales / Administration Employees

Ratio Components

Net Sales:

Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Administration Employees:

The total number of Administrative and MIS employees on a full time equivalent basis employed during the year.

Applications

- ▶ As an objective against which to compare existing level of staffing.
- ▶ As an objective for initiatives aimed at improving the productivity of administrative and MIS staff.
- ▶ As an objective for budgeting and business planning.

4.8.4 TOTAL LABOUR COST AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	25%
Wooden Furniture:	27%

Explanation

This benchmark provides an objective for the total cost of labour in the net value of sales. Because this is a total company level benchmark, it should be used as a macro objective.

Performance Ratio

Total Labour Cost / Net Sales

Ratio Components

Total Labour Cost: The total cost of salaries and benefits for all labour employed during the year.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a macro level objective against which to assess the overall level of labour cost of the company.
- ▶ As an objective to be used when comparing the performance of firms producing a similar range of products.
- ▶ As an objective for tracking total labour costs over time.
- ▶ As an objective for budgeting and business planning.

SECTION 4.9

**INVENTORY MANAGEMENT
BENCHMARKS**

4.9.1 MATERIALS INVENTORY AS A PERCENTAGE OF NET SALES

Benchmark:

At Product Level:

Upholstery	5.5%
Wooden furniture	4.8%

Explanation

This benchmark provides an objective for the level of the materials inventory at the product level.

Performance Ratio

Materials Inventory / Net Sales

Ratio Components

Materials Inventory: The average of the beginning and ending balances of the Raw Materials and Components Inventory.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare existing inventory levels.
- ▶ As an objective against which to develop inventory management policy and operating processes.
- ▶ As an objective for comparing operations in different geographic locations.
- ▶ As an objective for budgeting and business planning.

4.9.2 WORK IN PROCESS INVENTORY AS A PERCENTAGE OF NET SALES

Benchmark:

At Product Level:

Upholstery	0.5%
Wooden furniture	1.4%

Explanation

This benchmark provides an objective for work-in-process inventory at the product level.

Performance Ratio

Work-in-Process Inventory / Net Sales

Ratio Components

Work-in-Process Inventory: The average of the beginning and ending balances for the Work-in-Process Inventory.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare existing inventory levels.
- ▶ As an objective against which to develop inventory management policy and operating processes.
- ▶ As an objective for comparing operations in different geographic locations.
- ▶ As an objective for budgeting and business planning.

4.9.3 FINISHED GOODS INVENTORY AS A PERCENTAGE OF NET SALES

Benchmark:

At Product Level:

Upholstery	0.5%
Wooden furniture	5.0%

Explanation

This benchmark provides an objective for the level of finished goods inventory at the product level. However as inventory practices vary widely among manufacturers, this benchmark should be used for macro comparisons only.

Performance Ratio

Finished Goods Inventory / Net Sales

Ratio Components

Finished Goods Inventory: The average of the beginning and ending balances of the Finished Goods Inventory.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare existing inventory levels.
- ▶ As an objective against which to develop inventory management policy and operating processes.
- ▶ As an objective for comparing operations in different geographic locations.
- ▶ As an objective for budgeting and business planning.

SECTION 4.10

ASSET UTILIZATION BENCHMARKS

4.10.1 OPERATING ASSETS PER \$1,000 OF NET SALES

Benchmark:

At the Product Level

Upholstery:	\$400
Wooden Furniture:	\$700

Explanation

This benchmark provides an objective for the level of total operating assets employed in the business. Because fixed assets are included at current value, to use this benchmark fixed assets must be revalued. These levels assume all production is to order.

Performance Ratio

Operating Assets / \$1,000 Net Sales

Ratio Components

Operating Assets:	The total of the fixed assets at current value and average of the current assets at the beginning and end of the year.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective for evaluating the current level of operating assets in the business.
- ▶ As an objective for capital budgeting.
- ▶ As an objective against which to evaluate investment opportunities.

4.10.2 CURRENT ASSETS PER \$1,000 OF NET SALES

Benchmark:

At the Product Level

Upholstery:	\$190
Wooden Furniture:	\$315

Explanation

This benchmark provides an objective for the level of current assets employed in the business.

Performance Ratio

Current Assets / \$1,000 Net Sales

Ratio Components

Current Assets: The average of the beginning and ending balances of current assets.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective to be used in monitoring and controlling the level of current assets.
- ▶ As an objective for budgeting .
- ▶ As an objective for comparing the asset management performance of similar organizations.

4.10.3 TOTAL INVENTORY PER \$1,000 OF NET SALES

Benchmark:

At the Product Level

Upholstery:	\$90
Wooden Furniture:	\$160

Explanation

This benchmark provides an objective for the level of total inventory employed in the business and assumes all production is to order.

Performance ratio

Total Inventory / \$1,000 Net Sales

Ratio Components

Total Inventory:	The average of the beginning and ending values of Total Inventory.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to measure and monitor the total level of assets employed in the business.
- ▶ As an objective for use in capital and business planning.
- ▶ As an objective for the evaluation of investment opportunities.

4.10.4 ACCOUNTS RECEIVABLE PER \$1,000 OF NET SALES

Benchmark:

At the Product Level

Upholstery:	\$100
Wooden Furniture:	\$147

Explanation

This benchmark provides an objective for the level of accounts receivable.

Performance Ratio

Accounts Receivable / \$1,000 Net Sales

Ratio Components

Accounts Receivable: The average of the beginning and ending values of Accounts Receivable.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to measure and monitor the current level of accounts receivable.
- ▶ As an objective for budgeting and business planning.
- ▶ As an objective to be used in the evaluation of an investment opportunity.

4.10.5 INVESTMENT IN FIXED ASSETS PER \$1,000 OF NET SALES AT 90% OF CAPACITY

Benchmarks:

At Product Level

Upholstery:	\$215
Wooden Furniture	\$320

Explanation

This benchmark provides an objective for the current value of fixed assets employed in the business. The benchmark has been calculated at an operating level of 90% of capacity on the basis that most manufacturing operations are designed to operate at about this level. In using this benchmark, it is thus important to calculate sales at 90% of operating capacity and to bring all fixed assets to current value.

Performance Ratio

Fixed Assets / \$1,000 Net Sales (90% of Capacity)

Ratio Components

Fixed Assets: The year end current value of all fixed assets employed for the manufacture of furniture.

Net Sales: Gross Sales at 90% of capacity less discounts, allowances and returns and excluding sales taxes. Local delivery costs if (90% capacity) paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare the current level of fixed capital in the business.
- ▶ As an objective for capital budgeting and business planning.
- ▶ As an objective for comparing the level of fixed assets in different plants.

4.10.6 INVESTMENT IN BUILDINGS PER \$1,000 OF NET SALES AT 90% OF CAPACITY

Benchmarks:

At Product Level

Upholstery:	\$155
Wooden Furniture:	\$140

Explanation

This benchmark provides an objective current value of the value of buildings used in the business. The benchmark has been calculated at an operating rate of 90% of capacity.

Performance Ratio

Buildings / \$1,000 Net Sales (90% Capacity)

Ratio Components

- Buildings:** The year end current value of all buildings owned by the firm plus the annual cost of leased buildings capitalized at 10 times.
- Net Sales:** Gross Sales at 90% of capacity less discounts, allowances and returns and excluding sales taxes. Local delivery costs if (90% capacity) paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare the value of the buildings used by the business.
- ▶ As an objective for business planning.
- ▶ As an objective to be used when comparing the investment in buildings between companies or between different sites.

4.10.7 INVESTMENT IN MACHINERY & EQUIPMENT PER \$1,000 OF NET SALES AT 90% OF CAPACITY

Benchmarks:

At Product Level

Upholstery:	\$60
Wooden Furniture:	\$180

Explanation

This benchmark provides an objective for the current value of the investment in machinery and equipment used in the business. The benchmark has been calculated at an operating level of 90% of productive capacity.

Performance Ratio

Production Machinery & Equipment / \$1,000 Net sales (90% Capacity)

Ratio Components

Production Machinery &

Equipment: The current value of all machinery and equipment that is owned by the firm plus annual lease costs for machinery and equipment grossed up at 5 times.

Net Sales

Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer (90% Capacity) are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to evaluate the current level of investment in machinery and equipment.
- ▶ As an objective to be used for capital budgeting.
- ▶ As an objective to be used with Labour Capitalization to evaluate production labour productivity.
- ▶ As an objective for evaluating the investment in machinery and equipment between plants and between companies.

4.10.8 INVESTMENT IN SYSTEMS ASSETS PER \$1,000 OF NET SALES

Benchmark:

At the Product Level

Upholstery:	\$7.00
Wooden Furniture:	\$10.00

Explanation

This benchmark provides an objective for the current value of investment in systems related equipment.

Performance Ratio

Systems Assets / \$1,000 Net Sales

Ratio Components

Systems Assets:	Includes the current value of all fixed assets associated with the Systems function.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare the current level of investment in Systems related equipment.
- ▶ As an objective for capital budgeting.
- ▶ As an objective against which to compare different geographical locations and different companies.

SECTION 4.11

**NEW PRODUCT DEVELOPMENT
BENCHMARKS**

4.11.1 PRODUCT DEVELOPMENT COST AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	1.0%
Wooden Furniture:	0.7%

Explanation

This benchmark provides an objective for the cost of new product development. However as the cost of developing new product will be influenced by the type of products produced, their price points, whether products are produced for specific customers, etc., this benchmark should be used as a general indicator only.

Performance Ratio

Product Development Cost / Net Sales

Ratio Components

Product Development

Cost: Includes the cost of labour, purchased materials and professional services for the development of new product.

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As a macro objective against which to compare the current cost of new product development.

4.11.2 NEW PRODUCTS PRODUCED AS A PERCENTAGE OF NEW PRODUCTS DESIGNED

Benchmark:

At the Product Level

Upholstery:	90%
Wooden Furniture:	90%

Explanation

This benchmark provides an objective for the level of new product prototype adoption. Because of the many variables in this area this benchmark should be used only as a general indication.

Performance Ratio

New Products Produced / New Products Designed

Ratio Components

New Products Produced:	This may include new products, new styles or new collections.
New Products Designed:	This may include new products, new styles or new collections.

Applications

- ▶ As an objective against which to compare the current level of new product adoption.

SECTION 4.12

DISTRIBUTION BENCHMARK

4.12.1 AVERAGE PRODUCTION CYCLE TIME

Benchmarks:

At Product Level

Upholstery:	4.5 working days
Wooden Furniture:	10 working days

Explanation

This benchmark provides an objective for the average time required to manufacture a product from the time a work order is issued to the time the product is available for shipment to the customer.

Performance Parameter

Average Production Cycle Time

Parameter Component

Average Production

Cycle Time: The average time required in days to produce a piece of furniture from receipt of order to shipment.

Applications

- ▶ As an objective against which to compare current production cycle time.
- ▶ As an objective for production planning.
- ▶ As an objective to be used when comparing the performance of different plants.

SECTION 4.13

EXPORT BENCHMARK

4.13.1 EXPORT SALES AS A PERCENTAGE OF NET SALES

Benchmarks:

At Product Level

Upholstery:	25%
Wooden Furniture:	70%

Explanation

This benchmark provides an objective for the level of exports of Canadian furniture principally to the US.

Performance Ratio

Export Sales / Net Sales

Ratio Components

Export Sales:	The value, on a net sales basis, of all product sold outside of Canada.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison

Applications

- ▶ As a general indicator of the level of export that is possible to the US market.

SECTION 4.14

**QUALITY MANAGEMENT
BENCHMARKS**

4.14.1 RETURNS AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	0.7%
Wooden Furniture:	0.3%

Explanation

This benchmark provides an objective for the level of returns from furniture retailers.

Performance Ratio

Value of Returns / Net Sales

Ratio Components

Value of Returns:	Includes the net sales value of furniture returned by retailers because of damage incurred in shipping or manufacturing defects plus the cost of return freight.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to evaluate the current level of dealer returns.
- ▶ As an objective for business planning.
- ▶ As an objective to be used to justify the introduction of quality management programs.
- ▶ As an objective to be used when comparing the quality management functions of different plants.

4.14.2 VALUE OF PRODUCT REJECTED AT FINAL INSPECTION AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	1.5%
Wooden Furniture:	1.5%

Explanation

This benchmark provides an objective for the level of quality related rejects at final inspection.

Performance Ratio

Value of Product Rejected for Quality Problems at Final Inspection / Net Sales

Ratio Components

Quality Rejects:	Includes the net sales value of product found to have manufacturing defects during final inspection.
Net Sales:	Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to measure the current level of quality rejects at final inspection.
- ▶ As an objective to be used when comparing the quality management processes in various plants.
- ▶ As an objective for business planning.

4.14.3 REMEDIAL SERVICE COST AS A PERCENTAGE OF NET SALES

Benchmark:

At the Product Level

Upholstery:	0.5%
Wooden Furniture:	0.5%

Explanation

This benchmark provides an objective for the cost of remedial service which results from quality defects and damage in shipping.

Performance Ratio

Cost of Remedial Service / Net Sales

Ratio Components

Remedial Service: Includes the cost repairing or replacing faulty or damaged product plus freight where applicable

Net Sales: Gross Sales less discounts, allowances and returns and excluding sales taxes. Local delivery costs if paid by the manufacturer are reported as an operating expense and are not deducted from sales. Freight revenues are deducted from sales. Non-manufacturing revenue such as investment and rental income and significant sales of goods purchased for resale are excluded from Net Sales for the purpose of this comparison.

Applications

- ▶ As an objective against which to compare and monitor the cost of after sales remedial service.
- ▶ As an objective for the quality management function.
- ▶ As an objective for budgeting and business planning.

SECTION 5.0

**AN ANALYSIS
OF
CURRENT OPERATING PRACTICES**

Introduction

The following information on operating practices was collected from the twenty Canadian and the four US furniture manufacturers. Rather than present the results in terms of percentages, we have shown the number of firms that gave a similar response to a particular question. Thus in some cases the number of responses may be less than the total number of participants.

The value of this information is that it provides an overview of the operating practices being used by twenty four successful North American furniture manufacturers. As such, it is a useful reference point against which to compare your operating practices. If in the process you find that one or more of your practices could be improved, then this report has been of value.

To improve an operating practice, a proven approach is to participate in a process level benchmarking study with other firms selected for their expertise in the area. At this level, detailed information is gathered by each of the participants about the process being benchmarked. This information is then shared amongst all participants.

5.1 Product Development

5.1.1 Prototype to Production

- ▶ On average, furniture manufacturers put into production 77% of the new products they develop to the prototype stage.
- ▶ The initiative for the development of new product comes from six sources. As some manufacturers look to more than one source they have been listed in the order of the number of times they were mentioned.

	Times Mentioned
Retailers	15
Sales Representatives	13
Internal product management	9
Sales & Marketing Staff	3
External designers	2
Internal designers	1

- ▶ New product is designed both internally and externally with some of the firms using both internal and external designers. External designers have been separated into those who work for a fixed fee essentially as term employees and those who sell or licence their designs to the manufacturers.

	Times Mentioned
Internal designers	19
External designers on a fee	10
Independent external designers	1

- ▶ Management look to five different sources for approval of their new product designs. Some firms look to more than one source.

	Times Mentioned
Company management	14
A major customer	10
Trade Shows (retailers & customers)	11
One or more retailer	8
Sales Representatives	3

- ▶ The decision to manufacture a new product is either made by management as a business decision or it is based on receiving an order for the new product.

	Times Mentioned
Management business decision	10
Receipt of an order	13

5.1.2 Use of Advanced Technologies

- ▶ 16 manufacturers were using CAD design software for product design.

5.1.3 Sources of New Product Ideas

- ▶ The following are the sources manufacturers look to for new product ideas.

	Times Mentioned
In-house designers	22
Retailers	18
Competitors	9
Sales representatives	5
External designers	5
In-house design committees	4
Furniture markets	3
Interior designers	1

5.1.4 Design, Buy or Licence

- ▶ 22 of the 24 manufacturers generate their new product designs in-house. This is done either by their own full time designer staff or by external designers who

work for and with them and are usually paid on the basis of a percentage of the sales value of the product they designed.

- ▶ Two of the firms licence product design, from an outside designer in one case and from an offshore manufacturer in the other.

5.1.5 New Products Produced From Licenced Designs

- ▶ Except for three minor exceptions all product produced is based on designs created by the manufacturer.

5.2 Manufacturing

5.2.1 Use of Automation

- ▶ The following automated machine centres are currently in use by one or more of the participants.

	Canada	US
▶ CNC multiple drill	4	1
▶ Computer generated pattern generation for upholstery fabric	1	1
▶ Computer driven surface area measurement for hides for	1	
▶ Computer driven sewing machines	6	
▶ Radio frequency bar code readers for inventory control	1	
▶ Computer controlled drying kilns	1	1
▶ CNC moulder	1	1
▶ CNC combination planer, sander and point to point drill	3	
▶ Robotic welding work centre	1	
▶ CNC router	10	1
▶ CNC panel saw	5	
▶ CNC edge bander	2	
▶ Automated sanding and printing line	1	
▶ Robotic painting line	1	
▶ CNC fabric cutting	1	
▶ CNC band saw	1	
▶ Computer controlled breakout centre	2	
▶ Shrink wrap tunnel		1

5.2.2 Areas of Competitive Advantage

- ▶ Each manufacturer was asked to list the manufacturing areas where they felt they were superior to their competition. Areas mentioned were:
- ▶ ISO certification. (see 5.3.5)
- ▶ Ability to be responsive to their customers' requirements.
- ▶ Product quality.

- ▶ Short and consistent delivery times.
- ▶ Ability to kiln dry their own lumber.
- ▶ Computer driven production scheduling.
- ▶ Automated machining centres.
- ▶ Ability to use solid wood, particle board and MDF.
- ▶ Loyal long term work force.
- ▶ Ability to design specialized manufacturing equipment.
- ▶ Corporate policy to re-invest profits back in the business.
- ▶ Divisionalization allows the manufacturing function to concentrate on production.
- ▶ Automated breakout centre.
- ▶ Excellent maintenance.
- ▶ Gain sharing program.
- ▶ Operators are involved in design of work stations.
- ▶ Ability to offer custom made product.
- ▶ Buildings designed for furniture manufacturing.
- ▶ Mechanized material handling.
- ▶ Lower work-in-process.
- ▶ Less indirect labour.
- ▶ Computer based capture of manufacturing data.

5.2.3 Future Changes in Manufacturing

- ▶ Manufacturers were asked to list the major changes they would expect to make in their manufacturing operations within the next five years. The following are a sample of their replies:
 - ▶ Build a plant specializing in high volume product to allow them to compete with product coming from Asia.
 - ▶ All production planning will be computer driven.
 - ▶ More use of production cells for both upholstery and wooden furniture to provide more manufacturing flexibility.
 - ▶ Much more use of CNC equipment to improve quality and productivity.
 - ▶ More use of dedicated equipment such as specialized machine centres.
 - ▶ Increased use of robotics to improve productivity and quality.
 - ▶ Assembly operations will be grouped by market area.
 - ▶ Will have the ability to engineer requests for product changes on-line.
 - ▶ A computer monitor at each work station.
 - ▶ More component manufacturing to reduce delivery times.
 - ▶ Increased use of water based finishes to reduce air pollution.
 - ▶ Increased use of second and third shift operation to improve plant utilization and reduce costs.

5.2.4 Producing to Inventory or to Order

- ▶ Ten manufacturers produce 100% only to order. Of these, four receive 30 day forecasts from their major customers and one produces mainly custom product.

- ▶ Two manufacturers produce only to inventory.
- ▶ The remaining manufacturers produce partly to order and partly to inventory. Two of these produce machined parts for high volume wooden furniture lines which are drawn down as required to meet orders.

5.2.5 Component Manufacturing and Preproduction

- ▶ There appear to be a number of approaches to component manufacturing being used:
 - ▶ Where upholstery plants receive thirty day procurement forecasts from their major customers, they cut and sew covers well in advance of the manufacturing schedule.
 - ▶ Upholstery plants hold pre-cut cushions in inventory.
 - ▶ Frames for upholstered product are usually manufactured on the previous shift so as to be ready for upholstery on the day shift.
 - ▶ Some upholstery firms pre-cut frame components for inventory. These are then drawn down for assembly to meet specific orders.
 - ▶ Many wooden furniture manufacturers use common components like drawers and doors. These are often manufactured to inventory and drawn as required to meet orders.
 - ▶ One wooden furniture manufacturer pre-manufactured all of the components for several of their lines. These were held in inventory and drawn down and assembled as required to meet orders. The inventory was then automatically replenished.
- ▶ The majority of the participants only manufacture parts and components to meet orders.

5.2.6 Purchased Component

- ▶ Purchased components can be grouped into items that could not be manufactured internally and those that could but are purchased either because of capacity constraints or because specialized equipment is required for their manufacture.
- ▶ Examples of the first group include:
 - ▶ Cut foam
 - ▶ Hardware
 - ▶ Springs
 - ▶ Motion mechanisms
 - ▶ Sofa bed mechanisms
 - ▶ Mirrors and glass
 - ▶ Webbing
 - ▶ Plastic components
 - ▶ Paper laminate

- ▶ Drawer slides
- ▶ Bed rail components

- ▶ Examples of the second group include:
 - ▶ Bent wood for chair backs
 - ▶ Legs for beds
 - ▶ Wood knobs and handles
 - ▶ Turnings
 - ▶ Glue-ups
 - ▶ Laminates
 - ▶ Carved trim
 - ▶ Show wood
 - ▶ Back panels
 - ▶ Solid panels
 - ▶ Chair frames

5.2.7 Contracting Out

- ▶ Twelve of the manufacturers were contracting out to others for a variety of services. Of these, three contracted with other divisions within the same company.

- ▶ Of the remaining nine, two contracted out for the filling of hardware bags. The remaining seven contracted out for machining operations that either they could not do themselves or because they lacked internal machining capacity.

5.2.8 Tracking Labour Productivity

- ▶ 18 of the 20 Canadian firms and 2 of the 4 US firms had a formal labour productivity tracking system.

- ▶ Many different methods were being used. These are listed in order of the number of participants that are using them. Some of the participants were using more than one method.

	Times Mentioned
▶ Labour hours by operation by operator	10
▶ Labour hours at the department level	5
▶ Labour hours at the total plant level	4
▶ Labour hours per unit produced	2
▶ Labour hours at the production cell level	1
▶ Labour hours per customer order	1

5.2.9 Tracking Material Wastage

- ▶ 8 of the Canadian and US manufacturers were not tracking material wastage.
- ▶ The remaining tracked their wastage of the following materials:

	Wooden Furniture	Upholstery
▶ Lumber	9	4
▶ Purchased panels	1	
▶ Paint	2	
▶ Particle board	4	
▶ MDF	1	
▶ Veneer	3	
▶ Upholstery fabric		4
▶ Leather		4
▶ Foam		3

5.2.10 Production Cycle Time

- ▶ Production cycle time is defined as the total elapsed time between the receipt of an order and the completion of the product ready for shipment.
- ▶ The Canadian and US upholstery manufacturers reported production cycle times ranging from a low of 5 to a high of 28 working days. The average was 15 working days.
- ▶ The Canadian and US wooden furniture manufacturers reported production cycle times ranging from 10 to 42 working days. The average was 30 working days.

5.2.11 Product Packaging

- ▶ All wooden furniture manufacturers were packing their product in corrugated cardboard cartons.
- ▶ Three firms also used a cardboard tray under the piece of furniture.
- ▶ Most firms used foam or cardboard spacers to protect the furniture from being scratched during shipping. One firm is using a foam blanket to provide added protection.
- ▶ The upholstery manufacturers all place their units on a cardboard skid and either shrink wrap it in plastic sheet or enclose it in a plastic bag. Foam spacers and corrugated cardboard are also used to protect the exposed surfaces from damage.

- ▶ A few firms are experimenting with alternate packaging systems to both reduce cost and increase protection.

5.3 Quality Management

5.3.1 Inspection Methodologies

- ▶ Participants were inspecting quality at six different levels. In many cases firms inspected at more than one level.
- ▶ The inspection points and the number of firms inspecting at these points were:

	Times Mentioned
▶ Inspection of raw materials as received.	2
▶ Inspection at each operation by the operator.	17
▶ Inspection as the work leaves each department.	5
▶ Random inspection throughout the production process.	2
▶ Inspection of wooden furniture after finishing.	1
▶ Final inspection before packaging.	14

5.3.2 Responsibility for Inspection

- ▶ Seventeen manufacturers rely on their operators to inspect the work they receive and to inspect the work they do.
- ▶ Nine of these firms also inspect their product before packing.
- ▶ Two firms have Quality Assurance departments that do random inspections throughout the manufacturing process rather than inspecting all product before packing.
- ▶ Of the remainder, five inspect for quality at the department level.

5.3.3 Internal Quality Standards

- ▶ Eleven of the Canadian firms have an ISO certification and as such have written quality standards for each operation.
- ▶ One Canadian and one US firm are implementing ISO documentation and will apply for certification.
- ▶ Of the remaining firms, three in Canada and three in the US have defined their quality standards by operation although they do not operate a formal quality management program. Four Canadian firms have no recorded quality standards.

5.3.4 Defining Quality Parameters

- ▶ There are many approaches being used to define the quality parameters established for each manufacturing operation. Some examples of these are:
 - ▶ Those firms who have an ISO certification have developed detailed written descriptions of all operations which are posted together with parts drawings at each work station.
 - ▶ Testing jigs to verify dimension and go-no-go gauges to test drilled holes.
 - ▶ Samples of all cushions made are on view on the sewing department walls.
 - ▶ Colour samples are available at spray booths.
 - ▶ Samples of components and sub-assemblies.
 - ▶ Instructions on each work order to alert operators to possible problems.
 - ▶ A data base of product specifications available on terminals located throughout the manufacturing area.

5.3.5 ISO Certification

- ▶ Eleven of the Canadian manufacturers already have an ISO certification.
- ▶ One Canadian and one US manufacturer is currently working towards obtaining an ISO certification.
- ▶ The remaining eleven have either developed their own quality management system, are using another proprietary system or have no formalized quality management program.
- ▶ The short term benefits to be expected from the application of a formal quality management program are:
 - ▶ Lower manufacturing costs due to less re-work and better material utilization.
 - ▶ Less after sales remedial service associated with the repair of manufacturing defects.
- ▶ The longer term benefit will be increased sales because of consistently better product quality.

5.3.6 Cost of After Sales Service

- ▶ The weighted average cost of after sales service was 0.8% of Net Sales for those firms who were operating an ISO program and 1.2% for those without a formal quality management program.

5.4 Sales and Marketing

5.4.1 Pricing of New Product

- ▶ Thirteen Canadian and two US firms began their pricing process by selecting a specific retail price point for each new product. They then deducted their retailer's

margin and any discounts based on past experience to arrive at a net sales value. From this they deducted their calculated manufacturing cost and freight if applicable to arrive at a sale margin. This was then compared to their internal margin objective. If it met the objective the product would be produced. If not the design was altered and the manufacturing costs recalculated until the margin objective was achieved.

- ▶ Seven Canadian and two US firms began their pricing process by calculating the manufacturing cost of the new product to which they added their internal margin objective, their dealers margin and any freight and discounts to arrive at a selling price. This was then compared to the price point they expected to receive for their product. If their calculated selling price was above the price point they reworked their design and recalculated the manufacturing cost until they could meet the price point.
- ▶ Essentially the two methods generate the same result, a product that can be manufactured at a cost that will provide an internal margin equal to or better than the internal margin objective.

5.4.2 Hurdles to Growth

- ▶ Examples of the problems faced by *Canadian manufacturers in increasing their Canadian market share* were:
 - ▶ The current level of supply of furniture in Canada has saturated the demand. To be successful, a manufacturer will have to have more control over the retail presentation of their products through gallery programs or boutiques.
 - ▶ Meeting US price competition.
 - ▶ Finding qualified retailers who are also good accounts.
 - ▶ Meeting the broader product range available in the US.
 - ▶ Transportation costs.
 - ▶ The limited number of large retailers.
 - ▶ The cost of Canadian fringe benefits.
- ▶ Examples of the problems faced by *US manufacturers in increasing their Canadian market share* were:
 - ▶ Finding and keeping good sales representatives.
 - ▶ The US/Canadian exchange rate.
 - ▶ The need to show at Canadian furniture markets.
 - ▶ Meeting Canadian prices.
- ▶ Examples of the problems faced by *Canadian manufacturers in increasing their US market share* were:
 - ▶ Developing competitive styles.
 - ▶ Higher cost of Canadian materials.

- ▶ Meeting US prices.
 - ▶ Canadian production capacity vs the size of the US market.
 - ▶ US competitors are very large.
 - ▶ US retailers are too large.
 - ▶ Generating enough volume to allow concentration of shipments.
 - ▶ Developing a broader product range.
 - ▶ US manufacturers spend proportionally more on marketing.
 - ▶ Finding good sales representatives.
 - ▶ It takes time to become a recognized supplier in a new market.
 - ▶ Switching retailers' loyalties from existing US suppliers.
 - ▶ The need to constantly produce new and different product.
 - ▶ The buy American policy.
 - ▶ The need to sell in US dollars.
 - ▶ The dependence on the relative value of the Canadian and US dollar.
- ▶ Examples of the problems faced by *US manufacturers in increasing their US market share* were:
- ▶ The need to increase production capacity.
 - ▶ Finding quality sales representatives.
 - ▶ Getting retail floor space.
 - ▶ Brand recognition and corporate identification.
 - ▶ Price competitiveness.
 - ▶ Keeping up with current styles and determining the direction of future design.
- ▶ Examples of the problems faced by manufacturers in increasing their share of the *European market* were:
- ▶ A very different credit function.
 - ▶ Meeting the country by country fashion requirements.
 - ▶ Meeting the requirement for quality materials.
 - ▶ Transportation costs.
 - ▶ Finding the right sales representatives.
- ▶ Examples of the problems faced by manufacturers establishing themselves in the *Asian market* were:
- ▶ Difficult to sell directly to the retailer in Japan.
 - ▶ No customer loyalty.
 - ▶ They are very quick to copy a product.
 - ▶ Humidity causes problems for product in solid wood.
 - ▶ Finding the right sales representatives.

5.4.3 Showrooms

- ▶ Manufacturers were asked how important their showrooms were as marketing tools.

- ▶ A sampling of the replies of the Canadian manufacturers were:
 - ▶ Showrooms are very important. They try to locate themselves as near as possible to the biggest names in the business as these tend to draw the buyers.
 - ▶ Showrooms are marginally important. They prefer to bring retailers to their plant.
 - ▶ To be recognized you must have showrooms at each major furniture market.
 - ▶ Very important. They test new products at Toronto and then introduce them at the next High Point market.
 - ▶ Business starts in showrooms.
 - ▶ They fly all of their dealers into their plant twice a year where they have a large showroom.

- ▶ A sampling of the replies of the US manufacturers were:
 - ▶ Very important to have a showroom at each major furniture market.
 - ▶ A highly inefficient necessity.

5.4.4 Sales Support Materials

- ▶ The range of sales support material being provided by the manufacturers to their retailers includes:
 - ▶ Catalogues which are updated on a regular basis.
 - ▶ Upholstery material swatches.
 - ▶ Colour pictures of all of their furniture on the retailer's floor.
 - ▶ Price lists for all of their furniture on the retailers' floor.
 - ▶ Promotional flyers.
 - ▶ Newspaper advertising mattes.
 - ▶ Colour transparencies of their furniture.
 - ▶ Point of sale material including information on product quality and furniture care.
 - ▶ Videos showing their range of products, their manufacturing processes and design aspects that contribute to quality.
 - ▶ Cut-aways to show construction.
 - ▶ Leather boards showing the range of leathers available.
 - ▶ Information on the care of leather.
 - ▶ Posters with tear-off sheets.
 - ▶ Colour boards.
 - ▶ Technical data on products.
 - ▶ Samples of foam and upholstered furniture legs in various finishes.

5.4.5 Training of Retailers

- ▶ All but three of the firms provide training for their retailers' sales personnel on the retail floor.

- ▶ Twelve firms use their sales representatives to provide the training. In most cases

the sales representatives have had some prior training in the manufacturers' plants.

- ▶ Six manufacturers look to their sales department to provide training for retailers' sales staff.
- ▶ Two firms use both their sales representatives and their sales management for training.
- ▶ In only a few cases was the training of retailers' sales staff formalized. In most cases it was being provided either on request or on an ad hoc basis by sales representatives.

5.4.6 Co-op Advertising

- ▶ All but two of the manufacturers support co-op advertising.
- ▶ Some of the arrangements were:
 - ▶ Restricted to major customers.
 - ▶ Cost shared 50/50.
 - ▶ Decision and agreed level of support based on expected payback from additional sales.
 - ▶ Decision based on past sales.
 - ▶ Contribution based on an accrued amount related to past sales. Six firms allow 2% of sales.
 - ▶ A 5% discount on the sales generated by the co-op advertising.

5.4.7 The Marketing of Quality

- ▶ Quality was ranked as the No. 1 competitive factor by Canadian Manufacturers. They were asked how they marketed their quality to their retailers and to the public. A sample of their replies were:
 - ▶ Use the ISO logo on all of their sales literature.
 - ▶ Focus their sales literature on their products' features and benefits.
 - ▶ Sell quality to store personnel during in-house seminars.
 - ▶ Through retail staff training and point of sale material.
 - ▶ Publish a 1-800 number that allows customers to talk directly to the plant.
 - ▶ Organize plant tours for retailers.
 - ▶ Feature quality in all sales brochures.
 - ▶ Provide cut-aways to retailers to demonstrate aspects of quality.
 - ▶ They only use hardwood for frames.
 - ▶ They show videos of their ISO managed plants at furniture markets.
 - ▶ They provide extended warranties.
 - ▶ They conduct regular product knowledge sessions for retailers.

5.4.8 Brand Loyalty

- ▶ Manufacturers were asked how they viewed brand loyalty and if it was important to their company. A sample of their replies were:
 - ▶ Brand loyalty is non-existent in the furniture industry.
 - ▶ Furniture by-and-large is not a brand driven industry.
 - ▶ The real test of brand loyalty is when the consumer buys your product for the second time.
 - ▶ The end user develops a brand loyalty through complete satisfaction with the previous purchase and to a lesser degree through word of mouth. This loyalty is to both the manufacturer and the retailer.
 - ▶ There may be some brand loyalty to firms producing furniture selling in the top price quartile where clients look for and expect unique characteristics.
 - ▶ There is more brand loyalty in Canada than in the US.
 - ▶ It costs a lot to advertise the company name and thereby create brand recognition.
 - ▶ Studies have shown that about 50% of consumers recognise a brand name. Brand loyalty is product as opposed to company related.
 - ▶ Brand loyalty must be developed by the manufacturer. The retailer's natural instinct is to develop their own customer loyalty.
 - ▶ The gallery program is probably the best way to attract the retail customer's attention to your product.

5.4.9 Export Sales Management

- ▶ Thirteen of the Canadian firms have US sales managers. Four of these are resident in the US.
- ▶ Seven of the Canadian firms treat North America as one market and manage their sales from their head office.
- ▶ One Canadian firm also has a resident sales manager in Europe.

5.5 Market Research

5.5.1 Manufacturers' Market Research

- ▶ Without exception all manufacturers supported the importance of market research and the detailed information it provided. It was surprising therefore that only 7 firms operated formal market research programs. The remainder relied on their sales representatives and their retailers to provide them with information when they required it.
- ▶ Of the firms that operated a formal market research program:
 - ▶ 7 gathered information on retail pricing.
 - ▶ 5 gathered information on consumer requirements.

- ▶ 5 gathered information on product design preferences.
- ▶ 5 gathered information on customer satisfaction.

- ▶ In addition one firm regularly bought outside surveys, one bought specific information from contract market research firms and one conducted their own survey of Canadian and US retailers.

5.5.2 In-house or Contract

- ▶ All but two firms did their own market research using internal resources. In most cases this appeared to consist of asking their sales representatives to gather specific information. On the other hand most firms seemed to have close working relationships with their larger retailers which would generate a substantial volume of market related information.

- ▶ The two firms who did not do their market research themselves in one case contracted this function to outside market research consultants and in the other bought market research reports in the areas of interest to them.

5.5.3 Information Sources

- ▶ 12 firms look primarily to their retailers for market related information. Most of these firms also look to their sales representatives to gather their information for them.

- ▶ Only one firm gathered information directly from the public.

5.5.4 Information Collected

- ▶ A sample of the type of information being collected includes:
 - ▶ Lifestyles, warranties and the upholstery fabrics that are being offered.
 - ▶ Information directly related to the sale of their product.
 - ▶ The level of satisfaction of their retailers and consumers.
 - ▶ Styling trends, market size and market characteristics.
 - ▶ The evolution of product design.
 - ▶ Design, quality, delivery and price.
 - ▶ Space allocation on the sales floor.
 - ▶ The weighting of consumers' buying parameters.
 - ▶ Floor presentation ideas.
 - ▶ Dealer service.

5.5.5 Role in Corporate Success

- ▶ Manufacturers were asked to evaluate the role of Market Research and the information it has generated in the success of their company. A sample of the replies include:
 - ▶ It plays as important a role today as it did ten years ago.

- ▶ They gather macro information that will reveal market trends. Because most of their competition is much larger than they are and are in the US, they must follow rather than lead.
- ▶ It has played only a minor role so far but will probably increase in importance in the future.
- ▶ They rely on their contacts with the market as an important input to their decision making process particularly relating to new product design.
- ▶ They feel that the current level of market research is inadequate and that they should better organize this very important function.
- ▶ In the 70s and 80s market research didn't matter much. Today, consumers know what they want and you can not afford to waste retail floor space.
- ▶ They are very market driven and market research provides them with the information they need to make good market decisions.

5.5.6 Retailers' Market Research

- ▶ The following is a summary of the range of market research activities being undertaken by Canadian retailers.

Market research activity	Firms involved
Contracted out	
Off-site surveys	1
In-store surveys	2
General market analysis	2
Purchase market research reports	2
Done Internally	
Consumer surveys	2
Own web page	1
Consumer focus groups	4
Formal tracking of competition	3
Gathering information from suppliers	1
Store exit feedback cards	1
Telephone survey of customers	1
Regular analysis and use of Statistics Canada data	2
Development of customer profiles	1

- ▶ *Relatively little of the information gathered appears to be shared with the manufacturers* although this may well be the result of the manufacturers not asking the retailers for market information on a regular basis.

5.5.7 Retailer Feedback

- ▶ Manufacturers were asked what market research feedback they got from their retailers. Examples of their answers were:
 - ▶ Any information they do get they have to ask for.
 - ▶ Any information they get is from their sales representatives not their dealers. They ask their sales representatives to get specific information for them which they then use to improve their products and services.
 - ▶ Suggestions for product design is given freely by some retailers. Information on product pricing, availability and service is generally obtained by their sales representatives and is not freely given by their retailers.
 - ▶ Their major accounts feed back product information in terms of what is selling and what they would like next. This information is used to initiate new product development.
 - ▶ Retailers will recommend the type of products they would like either to meet competition or to enable them to be design or style leaders.
 - ▶ Being market driven they very much depend on dealer information in managing their business. They always consult their dealers on new design before putting them into production.

5.6 Systems

5.6.1 Equipment and Configuration

- ▶ All but three of the firms were operating mainframes. All but two of these operated both terminals and PC's although in a number of cases the PC's were not interfaced with the mainframe.
- ▶ Two firms operated networks based on PC's and a server.
- ▶ Six firms had LAN's and seven had WAN's.
- ▶ Some interesting configurations consisted of:
 - ▶ Separate mainframes for Administration and Accounting and for Production Scheduling.
 - ▶ A LAN connecting everyone involved in product development.
 - ▶ EDI orders that were automatically processed on receipt generating production schedules for the products.
 - ▶ A separate LAN for each functional area.
 - ▶ A centrally located mainframe servicing all locations in Canada and the US through a WAN.

5.6.2 Degree of Integration

- ▶ 14 firms have terminals and/or PC's in both the office and the plant.
- ▶ Several firms have to physically transfer files between mainframes and/or databases.
- ▶ In most cases the information available in the plant is restricted.
- ▶ One firm has provided their sales representatives with laptops. They use these to download order information and communicate with their sales office through the Internet.

5.6.3 Use of EDI

- ▶ 16 firms are using EDI to receive orders from their larger customers. In a few cases these orders are then automatically processed by their order entry system.
- ▶ None of the firms are using EDI for sending orders to their suppliers.

5.6.4 Role in Corporate Success

- ▶ All manufacturers were asked whether they felt that their systems operation had played a significant role in their success. A sample of their replies were:
 - ▶ Information is their number one priority. Their systems capability has allowed them to reduce their average delivery time from 6 to 4 weeks.
 - ▶ They see Systems as a support function and as such not pro-active.
 - ▶ Systems has played a significant role, however they realize that they are using yesterday's technology.
 - ▶ They have succeeded in spite of their Systems which is very basic and working at capacity.
 - ▶ Systems has played a very important role. They are currently revamping their whole Systems area.
 - ▶ EDI is a necessity for doing business with a major customer. The customer provides a purchase order by EDI and they send an advanced shipping notice back by EDI when the truck is loaded. The customer uses this to set up their routing schedule for incoming goods and to create a payable. They are now developing a capability to make payments by EDI.

5.6.5 Future Changes in Systems

- ▶ Most firms attributed part of their success to their systems function but almost without exception felt that they were operating well behind the state-of-the-art both in hardware and software. Many of the firms had plans for substantial change in this area. To get an appreciation for future change, participants were asked to describe their Systems function in five years time. Examples of their replies were:
 - ▶ The Systems function will be completely integrated with Production.

- ▶ Access to information will be available everywhere throughout the company.
- ▶ Fax and Internet access will be available to all users.
- ▶ They will be using bar coding extensively to track work in the plant and to control inventory.
- ▶ They will have direct order entry where the incoming order initiates a production order.
- ▶ Customer Service will be able to track individual orders in production on-line in real time.
- ▶ Cell teams will be able to pick their own orders.
- ▶ All orders will be received by EDI.
- ▶ They will keep a perpetual inventory as well as bills of material for all products.
- ▶ They will use EDI for purchasing.
- ▶ All supervisors will have PC's.
- ▶ Dealers will be able to access information in areas like fabric inventory, electronically.
- ▶ They will have a PC on every desk.

5.7 Human Resources

5.7.1 Training Programs

- ▶ Four firms did not have any formal training program for office staff or plant employees.
- ▶ Fifteen firms provided internal seminar type training covering quality management, problem solving, safety, English for French speaking employees, leadership for managers, interpretation of the collective agreement, discipline, motivation, etc.
- ▶ Ten firms provide access to off-site training in addition to internal training. This is usually limited to management personnel. Three of these firms leave the initiative to the individual to find a course that is related to their job. The cost is then covered by the company. The remaining seven arrange for the external courses and then send members of their staff.
- ▶ Three firms have an in-house new hire indoctrination program. One of these also operates a "buddy" system for all new hires.
- ▶ The majority of the firms provide cross training for production employees.
- ▶ Virtually all firms provide some form of training for their reps and where practical arrange to have their retailers' sales people visit the plant to see product being manufactured.

- ▶ The sales representatives are expected to provide training for retail sales personnel on the retail sales floor. Training is also provided for retailers during the furniture markets.

5.7.2 Benefits Programs

- ▶ All participants provide their employees with a benefit program.
- ▶ All participants provided health and life insurance and paid vacation.
- ▶ Four participants provided an employee pension plan. In one case the plan only covered management.
- ▶ The following benefits were also provided by some of the participants on a co-op basis:
 - ▶ One participant offered Accidental Death Insurance.
 - ▶ Three participants offered Long Term Disability Insurance.
 - ▶ Nine participants offered Dental Insurance.
 - ▶ Four participants offered a voluntary RRSP Program which the firm matched after five years.
 - ▶ Nine participants provided some form of Profit Sharing Plan.

SECTION 6.0

BEST OPERATING PRACTICES

Introduction

As explained in the introduction to Section 1, the objective of this study was to establish a comprehensive set of global performance benchmarks at the corporate level for the Canadian household furniture industry. In the process of collecting this information and to provide a background for the quantitative data, extensive information was gathered on the operating practices being used in the industry. This information is presented in detail in Section 5.

In this section we have, where possible, identified what in our experience appears to be the "best practices". In some cases these will be composites of what a number of firms are already doing. The objective of this section is thus to highlight the most effective operating practices seen among the twenty four furniture manufacturers.

In the event that you see a practice that you would like to adopt, the next logical step would be to initiate a process level benchmarking study involving a number of firms who are reputed to be operating at the state-of-the-art in the particular area of interest. Together you would identify the parameters to be documented and measured by each participant and this information would then be shared among the participants.

6.1 New Product Development

- ▶ Look to the market for new product initiatives.
- ▶ Develop relationships with both your retailers and your sales representatives whereby they are motivated to look for and bring new product ideas to you.
- ▶ Involve your sales representatives and your customers in the design approval process.
- ▶ Put newly designed products into production if you have received substantial support from your sales representatives and one or more of your customers or if you have received adequate orders for the product in advance or production.

6.2 Automation in Manufacturing

- ▶ There are essentially three reasons for automating a production operation, to increase capacity, to improve quality and to reduce cost.
- ▶ Capacity is increased if automation can decrease the setup time and/or decrease the processing time.
- ▶ Decreasing the setup time can result from an automated machine centre doing multiple machining operations for each setup.

- ▶ Decreasing the machining time may result from multiple machining operations being done at the same work station rather than by different work stations. This may also result from the use of CNC driven equipment.
- ▶ Opportunities to combine machining operations into one machine centre should be developed with machine tool manufacturers.
- ▶ The introduction of automated machine centres should be part of an overall long term strategic plan with at least a five year time horizon.

6.3 Use of Production Cells

- ▶ The market is demanding shorter delivery times in the range of one week or less. It is not possible with conventional batch manufacturing to achieve production cycle times of less than three to four weeks.
- ▶ The production cell is being used by both upholstery and wooden furniture manufacturers to enable them to increase their manufacturing flexibility and thereby meet the market's demand for shorter deliveries.
- ▶ Upholstery manufacturers in most cases assign certain styles to each of their cells. This allows the operators to focus on the manufacturing peculiarities of a small range of product and thus increase their productivity. It also allows the cell to select the orders to process and thereby to meet short delivery requirements.
- ▶ Wooden furniture manufacturers have applied cell manufacturing to specific operations such as assembly where each cell is set up to handle a defined range of products.
- ▶ By cross training operators within a cell, they have complete flexibility to meet changing demand.
- ▶ The opportunity to apply cell technology will to a large degree depend on the pattern of orders received. If the majority of orders are for small numbers of a broad range of product then cell technology should be considered as an option.

6.4 Producing to Order or Inventory

- ▶ In the past, producing to inventory was the conventional approach to meeting requests for shorter delivery. It was also costly in that working capital was tied up and often older stock had to be sold below market to clear it out. Some firms are still manufacturing to inventory but in most cases the product that goes to inventory is the difference between an economic production batch and the orders on hand for a particular product.

- ▶ To enable some of the firms who produce batch lots to meet shorter deliveries, they produce components of their fast moving products for inventory and draw them down to meet orders. This gives them the economy of batch production and the ability to meet short deliveries.
- ▶ If you have one or more lines that are fast movers, it might be of value to explore manufacturing the necessary components for inventory and assembling the product on demand using production cells.

6.5 Tracking Labour Productivity

- ▶ Labour costs represent up to 40% of the cost of the product. It is important therefore to track labour cost preferably at the operation level where changes can be made in operating practices if required.
- ▶ The simplest way of tracking labour cost is to have each operator clock on and off a work order. This can be done manually or by using a bar code scanner. Ideally, each operator would have a terminal at their work station which would report labour productivity in real time.

6.6 Tracking Material Wastage

- ▶ Material costs can represent in the order of ^{54%}74.6% of the cost of the product. Increasing the yield by 10% thus represents a saving of 5% in the product cost.
- ▶ The major material components are lumber, particle-board and medium density fibre-board (MDF), upholstery fabric, leather and foam.
- ▶ Many firms are tracking their yield on lumber as this is relatively easy to calculate based on standards for each product.
- ▶ Equipment is now available to measure the surface area of upholstery fabric and hides. The yield can then be calculated by referring to standards for each product produced.

6.7 Quality Management

- ▶ Quality was ranked as the most important competitive factor by Canadian manufacturers and the second most important by Canadian retailers. Managing quality thus should be one of the most important functions of a furniture manufacturer.
- ▶ The ISO quality management program is by far the most accepted in the market. Eleven of the twenty Canadian manufacturers are already certified and one Canadian and one US

firm are in the process of applying for certification.

- ▶ With its proven track record, a firm would have to have very sound reasons for not introducing an ISO program.
- ▶ The short term benefits to be expected from a quality management program are lower manufacturing costs due to less re-work, better material utilization and less after sales costs for remedial work associated with manufacturing defects.
- ▶ The longer term benefits are increased sales because of better product quality.

6.8 Sales Support

- ▶ Retailers see the sale of furniture as being a joint responsibility with the manufacturers. To improve their efficiency retailers must be made aware of the strengths of your product and therefore how best to present it to their retail customers.
- ▶ Most manufacturers provide some form of training for their retailers' sales staff. This is usually done by sales representatives on the sales floor. The quality of the training therefore depends very much on the knowledge of the sales representatives and their commitment to your products.
- ▶ Manufacturers must rethink how best to convey to their retailers' sales staff the advantages their products offer over the competition. This could involve regular training sessions at central locations or preferably in the plant. It could involve the use of training videos and remote computer based training. It could also involve rethinking the literature and support material that is provided to the retailers.
- ▶ This is seen to be a critical area. The firms who develop a fresh approach will in all likelihood enjoy the best sales growth.

6.9 Market Research

- ▶ Both the manufacturers and the retailers agree to the need for and the importance of the information gathered by means of formalized market research. Unfortunately neither group have put much effort into this area.
- ▶ Market research should focus on uncovering the changing demands in the market place. These include the relationship of furniture to changing lifestyles, consumer expectations and their level of satisfaction with both the product and the service they received and the tracking of trends in furniture design.

- ▶ This information is too important as an input to the planning process for it to be generated on demand by the sales representatives. All manufacturers would be well advised to rethink their information requirements and design a market research capability that would provide this information when required.

6.10 Information Technology

- ▶ The furniture industry, by and large, lags many other manufacturing sectors in its application of information technology. Hardware and software is readily available to meet every information need. The problem seems to be more with management who are still content to manage with a level of information more common in the 80's.
- ▶ Interestingly, most firms appear to have a relatively clear picture of where they would like to be in five years. They see terminals at each work station, an integration of order entry and production scheduling, full product information available at each work station, production information available in real time for Customer Service and for sales representatives, production statistics available in real time, computer control of inventory, etc.
- ▶ This would be an excellent area in which to organize a process benchmarking study as confidentiality is not a real issue and the more experience that could be brought to the table the better.

6.11 Staff Training

- ▶ Only a few firms have formal employee training programs. With the increased use of information technology, be it in the plant with CNC equipment, be it as a result of the use of CAD or with the availability of real time production and sales information, ongoing training of employees at all levels will become a necessity.
- ▶ There may be an opportunity here to organize common training programs for the industry, run by the Associations and one or more community college and/or university.

6.12 Employee Benefits

- ▶ Profit sharing or gain sharing programs provide the firm with the dual benefit of promoting loyalty to the company and increasing productivity. This is an area where every firm would be well advised to explore the opportunities offered.
- ▶ This might be an area where the Associations could play a useful role as consultants.

