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Henderson®

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CYCLE TIME MANAGEMENT INC. BUSINESS ASSESSMENT

Henderson Recreation Equipment

INTRODUCTION

Purpose of the Report

The purpose of this report is to document the results of the Lean Assessment conducted at Henderson Recreation Equipment by Cycle Time Management Inc. (CTM).

Scope of the REPORT

Recommendations defined in this report are a combination of requirements directly determined by CTM and requirements as defined by Henderson personnel during the interview process.

Objectives of the Report

1. To provide a gap analysis between the existing Henderson corporate structure and a Lean Enterprise structure.
2. To determine Henderson's current culture and readiness for significant change.
3. Provide a specific cycle time improvement projection and related benefit analysis for Henderson's manufacturing processes.
4. Act as a communication tool between Henderson and CTM.
5. Act as input to the Planning and Implementation phases at Henderson.
6. State in a detailed manner the initial steps required in beginning the transition to a lean enterprise.
7. Outline longer-term requirements to support implementing lean at Henderson.

Company Background

The story of Henderson Recreation Equipment began over 40 years ago in small-town Ontario, Canada. Gordon Henderson, company patriarch, was a new father to the first of his three boys. His days were spent hard at work as plant manager for the Paris Playgrounds, while his nights were spent dreaming of a playground business of his own. In 1971 Henderson's dream was realized when he began building playground equipment in the big green workshop behind his family home in Oakland, Ontario. Business started out small, producing park amenities and select play items that were uniquely his own—products like Henderson Teeters, Panda Bear Swings and Woodchuck Burrows that recognized the importance of creativity and novelty in children's playground equipment. By the late 1970s, business was booming and a larger facility was essential to continuing their work. As they continued to grow, Henderson Recreation Equipment learned about the importance of lean. They requested CTM's assistance to optimize production and warehouse operations via lean techniques, focus on value added activities, maximize profitability and expand its market penetration, especially in the United States.

At the time, the company represented a conventional manufacturing structure where components were produced in a repetitive process. Operations consisted of a single shift that was seasonal in nature. The number of employees varied between a low of 40 and a high of 70. We conducted a thorough business assessment to determine all areas in which Henderson could improve, which is outlined in detail in this case study. CTM's Lean Assessment approach of key

employee interviews, financial review, facility visit and a lean manufacturing evaluation to determining lean implementation requirements has been very effective for our customers.

Once lean techniques were implemented, Henderson experienced an outstanding growth in productivity, profitability and market share. Today, Henderson Recreation Equipment is a leader in its industry, serving a large share of the Canadian and US markets.

LEAN ASSESSMENT

Introduction

CTM has found its Lean Assessment approach of key employee interviews, financial review, facility visit and a lean manufacturing evaluation to determining lean implementation requirements very effective for our customers.

This information not only gives us an understanding of the level of Henderson's knowledge, but the data gathered is an investment for all of us and will be built into future lean activities.

Also, Henderson Recreation Equipment gets an opportunity to obtain feedback on how it is perceived from an outside source, which provides an impartial look at how Henderson is operating against benchmarks for similar industries.

Further, Henderson's management team gets an opportunity to get information on how the company is perceived by all levels in the company.

Objectives of the Lean Assessment

1. Gain a better insight to the "as is position" on:
 - Operating practices and performance levels
 - Present and future projects
 - Issues and concerns
2. Determine management's strategy and tactics.
3. Build a rapport with a broad section of the management team.
4. Determine whether people really understand what is required and expected of them during the implementation toward lean.
5. Gather information that will help to customize our lean implementation recommendations for Henderson.

EMPLOYEE INTERVIEWS

Henderson Employees Interviewed

The following Henderson Recreation Equipment employees were selected to ensure that a good cross section of Henderson functions would be represented. This was done to help give CTM a holistic view of the their organizational structure.

Name	Function
Jim Graham	President
Bill White	Controller
Bob Harris	Director Operations
George Brown	Director Design Products
Henry Jones	Director Sales and Marketing
Anna Smith	Purchasing Manager
Jill James	Office Manager
Nick Johnson	Quality Manager
John Able	Sales Manager
Wendy Greer	Inside Sales

Introduction

The following Henderson employees were selected to ensure that a good cross section of Henderson functions would be represented. This was done to help give CTM a holistic view of the Henderson organizational structure.

- A problem positional analysis was generated from the information gathered throughout the series of interviews with the Henderson's employees.
- The top 10 problems raised by the employees through the interview process have been identified in Section 4.3 and are discussed in Section 4.4.
- A lean readiness analysis was conducted, using the above information and observations made by CTM throughout the interview process.
- This readiness analysis has been organized into a strengths / weaknesses / opportunities / threats (SWOT) format.
- Conclusions on Henderson's present position and potential to evolve toward a lean enterprise operation have been generated from this analysis.
- CTM has developed recommendations for Henderson from these conclusions.

Note:

This prioritization approach is useful to focus on problems at a global level and, in this regard, this process is valid.

These are presently perceived problem areas and may not be the same priority for everyone in the organization, but are an average cross section of the perception of the problem areas.

Also, these are problems as perceived now and may be in the process of being resolved or have already been resolved.

We were aware in certain instances of effort already being directed to resolve these problems, however, it is an indication of the present view that the organization has of itself.

Problem Positional Analysis

The categories used in this analysis are intended to define the type of problems affecting a lean implementation and provide the present Henderson position as expression by the employees interviewed.

“The scores represent the customer perception of the problems.”

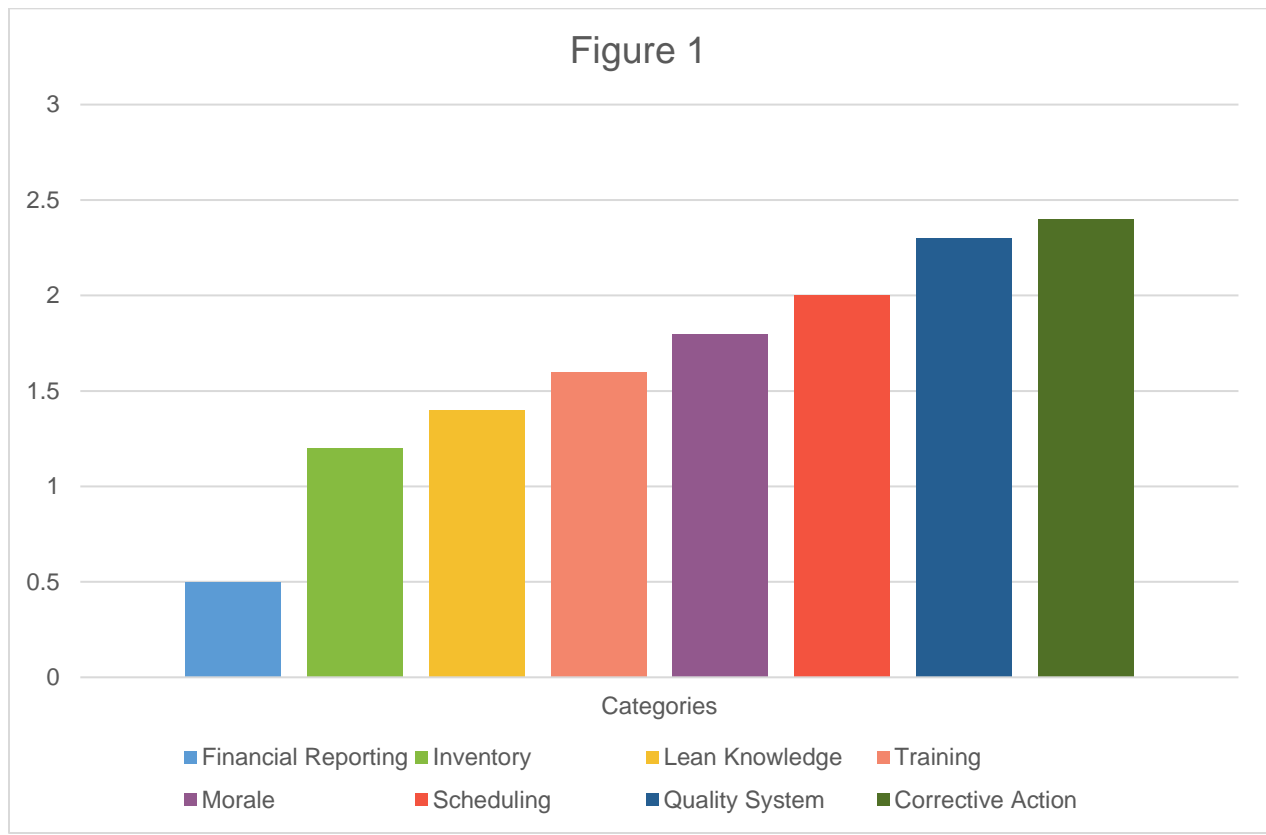
The categories are self-explanatory and relate to problems associated with how the organization is managed, processes are operated, how well the people in the organization work together in a participative manner, and if there are the correct decision making and planning systems.

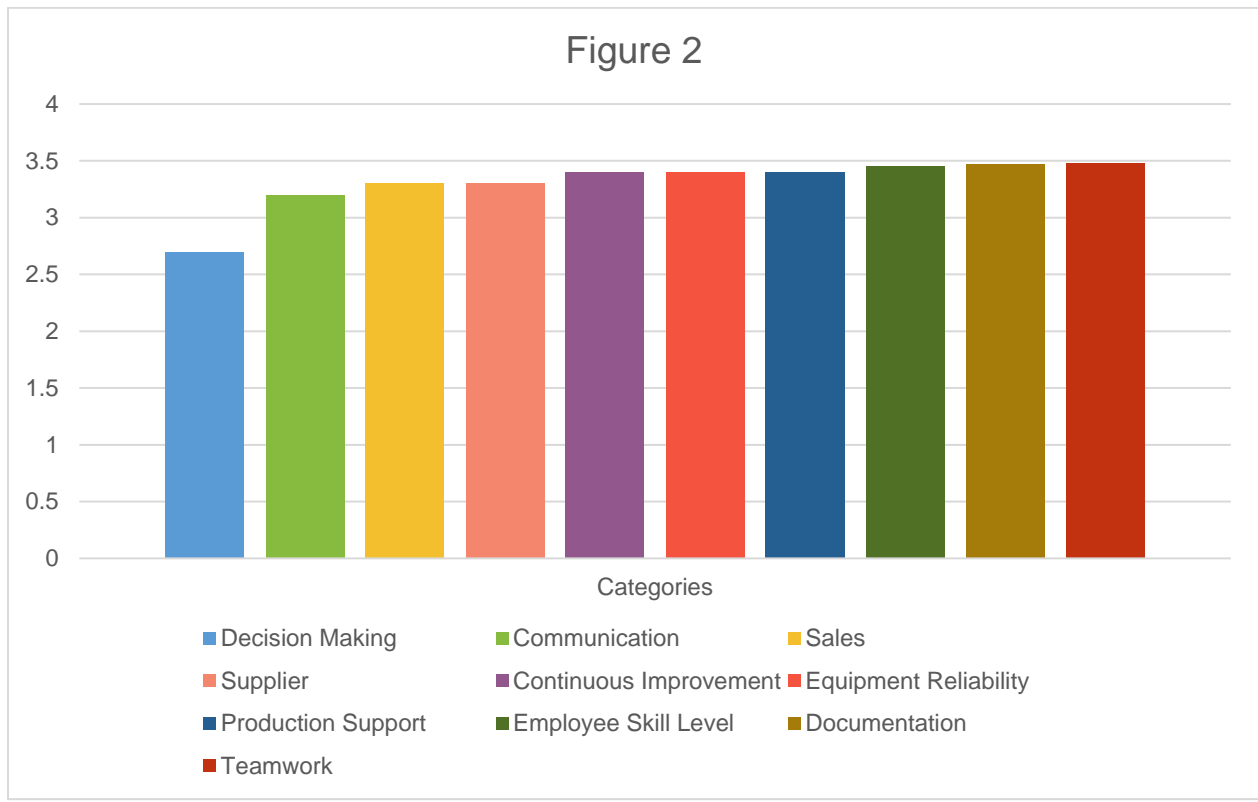
A scoring system from 0 to 5 has been used. (0 = Extremely Poor 5 = Excellent)

The allocation of these scores can be subjective and is based on some knowledge we have of common problems which effect lean implementation.

The important issue is the relative score rather than the individual score levels.

From this information we can determine the priority problem areas as an average across the organization.





Note:

Several of the questions were answered with an N/A. This does not indicate that on an individual basis that there is a problem or concern. What it does indicate is that at a corporate level management personnel may not have the information required to function as a focused pro-active management team driving company goals and objectives

The Top 10 Problems (Scores)

We have taken these problem areas, which affect a lean implementation and, for the benefit of this report, have formed our comments on the top 10 problems identified. (All scores below 2.5).

1. Financial Reporting (0.5)

- Need to define financial system targets that add value to the business.
- Disconnect between sales forecasting and production / warehousing planning and scheduling.
- Standard costing must be upgraded.
- Inability to determine profitability on individual items

2. Inventory (1.2)

- Lacking an inventory tracking system for all to see what is on-hand.
- Need to adopt demand-pull system and reduce lot sizes in order to reduce inventory.
- Inventory turns must be dramatically increased to free up working capital.
- Purchasing too slow on occasion.

3. Lean Manufacturing Knowledge (1.3)

- Basically little lean manufacturing knowledge throughout the organization.
- Shop Floor basically satisfied with current level of knowledge but is not aware of improvement potential and how to go about it.

4. Training (1.7)

- No Training plan or budget in place.
- New hires given limited or no training.
- Many functions are learned in a trial and error manner.

5. Morale (2.0)

- Plant morale is low due to lack of management commitment to fix problems.
- Morale is viewed as being at its lowest ever.

6. Scheduling (2.2)

- Traditional scheduling system in place.
- Components often not ready on time.
- Scheduling is not communicated to all departments on a timely basis.

7. Quality System (2.3)

- No quality control procedures / action plans in plants.
- Lack of follow up on problems.
- Problems are not clearly defined, with assignment of responsibility and associated accountability.
- Quality control action methodology is basically not used on a day-to-day basis but only during audits.

8. Corrective Action (2.3)

- Not taken seriously by everyone.
- Slow to respond.
- Lack of follow up on problems.
- Once fixed problems seem to reappear.
- Lack of root cause analysis.

9. Production Efficiency (2.5)

- Too many errors, reworks.
- Very poor housekeeping hampers production.
- People standing around not doing anything – not knowing what to do.
- Always rushing in busy season.

10. Customer Satisfaction (2.5)

- Has slipped in the last several years.
- Emphasis and importance of responding quickly has fallen.

Lean Readiness Analysis

From the interviews, the following Lean Readiness Analysis was developed.

Strengths

- Management team wants to make changes but clearly is in need of a continuous improvement vehicle.
- Excellent product quality acceptance by marketplace.
- Adequate plant equipment (in general).
- Work force is stable and skilled in their job functions but has a narrow focus.
- Recognize importance of manufacturing per customer firm demand or realistic forecasts.
- President has excellent personal industry knowledge and focus.

Weaknesses

- Market growth has stagnated.
- Silo departmental mentality.
- Middle management morale is poor due to lack of accountability to go with responsibility.
- Production planning system is very rudimentary and capacity planning non-existent.
- Organizational improvements needed in such areas as Continuous Improvement Champion, Inventory Control and Manufacturing.
- Financial reporting system requires improved reporting and analysis capabilities.
- Minimally profitable, must improve considerably by improving production throughput, inventory reduction and increased sales.
- Excellent individual capabilities in management, but not being harnessed as per cross-functional company requirements.
- Essentially little training emphasis.
- Poor proactive system for measuring customer satisfaction and reacting accordingly to issues raised.

Opportunities

- Improve throughput by adopting lean manufacturing techniques.
- Profitable sales growth through reduction of manufacturing costs, product rationalization and concentrated sales and marketing effort.
- Harness energy of 40 - 70 employees in a continuous improvement culture.
- Create realistic baselines and entitlements to improve performance further.
- Fully utilize continuous improvement vehicle to maintain / grow lead over competition.
- Dramatic reduction in inventories to increase working capital.
- Better shop floor control.
- Manufacturing capacity available on 2nd and 3rd shifts.

Threats

- Management needs to accept a new paradigm and be prepared to change the existing culture.
- Some resistance to implementation of new systems and how to transition accountability.
- Lean principles and concepts, if improperly implemented could be viewed as just another flavour of the month program.
- Lean could be perceived as a cost reduction plan encouraging layoffs.
- Complacency exists with respect to current procedures as a result of general lack of knowledge of what can be achieved.
- Senior management needs to give up control and empower staff.

LEAN ASSESMENT FINDINGS

Introduction

Product acceptance by customers has been excellent.

However, product durability has been replaced by a “price/appearance/delivery” mind set in the marketplace. Henderson offers a “one-product-fits-all-solution” that is putting extreme pressure on Henderson to cut pricing on their current offerings.

Henderson’s position is further complicated by the fact that several of their competitors are large U.S. manufactures that have or are in the process of moving to lean manufacturing.

Manufacturing Benchmarking

The manufacturing operation is characterized by a traditional manufacturing process mentality where components flow through the plant in batches from department to department to maximize equipment and setup output.

Manufacturing Housekeeping Benchmarking

Housekeeping is suspect!!!

Product acceptance by customers has been excellent.

Financial Benchmarking

Based on two years of audited financial information plus the current year of un-audited financial information provided by Mr. Jim Graham, President of Henderson we compared Henderson’s performance with a peer group of companies in the Risk Management Association’s database of companies in **SIC Code: 3499 - FABRICATED METAL PRODUCTS, NEC - Sales.**

Inventory Benchmarking

Inventory is probably one of the two biggest assets on a company's balance sheet. It is an important determinant of Return on Assets (ROA) and other measures of financial performance.

Carrying stock is expensive, usually 20%-40% of the average value per year. It devours capital – capital the business may need for growth. It requires large warehouses and valuable floor space. It increases material handling.

The table above shows average turns for several industries. Such comparisons are a valuable benchmark. They help rate your firm's performance against others in the same or similar industries. Averages are not all the story. In most industries, many firms cluster around the average. A few firms are far above. Many lean manufacturers show turns of 200% - 1000% of their industry average.

Firms with outstanding inventory performance excel on other dimensions such as customer service, delivery and productivity. The above chart shows the results from one of many studies that support this contention. The study examined four similar firms in several countries. The chart shows their WIP turns and productivity in units per employee.

Since inventory is a result rather than a root cause, attempts to attack it directly will fail. Such attempts may bring temporary reductions. Or they may produce unintended results such as increased defects or increased delivery time.

Inventory turnover links directly to plant configuration and operating practice and is an important metric – the most important single measure of manufacturing performance. It captures the effects of a wide range of decisions and practices.

High turnover is thus important for at least three reasons:

- Releases cash
- Encourages superior performance
- Inventory is expensive to carry

Inventory Turns at Henderson

Inventory Turns – A high inventory turnover is an indicator of good inventory management. A low turnover may indicate overstocking, or obsolete inventory.

The average used for this comparison is 13.6 turns, which represents Fabricated Metals from Figure 8.

Conclusion: Henderson is well below the acceptable range. Inventory must be reduced.

Solution: Increase inventory turns with a goal of 10 to 14 per year. The best way to reduce inventory is to improve processes, facilities, quality, scheduling and setups (i.e. implement lean manufacturing).

Communication

Communication within Henderson is poor and the company is suffering from a departmental silo mentality.

Sales

Marginally profitable, Henderson's sales growth has been stagnant in a very competitive industry.

Product Design

A "one-product-fits-all" solution is difficult to maintain when selling to multiple market segments.

ISO

Henderson has achieved ISO 9002:2000, but it is clearly a source of overhead without contributing significant added value to the operations.

CTM Lean Survey Summary

The CTM Lean Survey is a checklist that will help Henderson to know its current status and then its on-going progress in adopting and adapting to Lean Manufacturing.

Section 1: Lean Enterprise	17%	of 100%
Section 2: Lean Management	21%	of 100%
Section 3: Customer Focus	50%	of 100%
Section 4: Employee Involvement and Teamwork	17%	of 100%
Section 5: Supplier Relations	17%	of 100%
Section 6: Quality Planning and Strategy	46%	of 100%
Section 7: Value Stream Mapping	4%	of 100%
Section 8: Cycle Time	8%	of 100%
Section 9: 5S Housekeeping	4%	of 100%
Section 10: Manufacturing Planning	21%	of 100%
Section 11: Production Scheduling	21%	of 100%
Section 12: Structured Flow	17%	of 100%
Section 13: Process Control	17%	of 100%
Section 14: Performance Measurement	17%	of 100%
Section 15: Quick Changeover	13%	of 100%
Section 16: Total Productive Maintenance	25%	of 100%
Section 17: Total Quality	29%	of 100%
Overall:	20%	of 100%