



# Silverton Specialty Tooling Case Study

KEY PERFORMANCE INDICATOR ANALYSIS AND  
DASHBOARD VISUALIZATION

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The purpose of the Silverton Specialty Tooling review and assessment was twofold. It was intended to show not only what happened but why and how it happened. Based on this evaluation, key performance and behavioral metrics could be established.

## **BACKGROUND**

Silverton Specialty Tooling produces a piece of machine tooling that is in high demand—and has been for many years—and for which the Company has had little competition. The Company established its brand two decades ago and has relied as much on name recognition as on the tooling itself. While the tooling is well made, the market today is such that being well-made is no longer the only factor that incentivizes customers to buy.

Especially in the machine tooling sector, competition from other countries must be considered because foreign products are not only far less expensive, they are also of relatively high quality. Knock-offs are common, and it is possible to duplicate even the most intricate, specialized tooling. For their part, customers are often willing to trade off any customer service at all for a lesser price. In the case of the Silverton tooling, there are three primary competitors—two of them in China. No user-friendly documentation on this product exists in either English or Chinese.

An abrupt decrease in sales revenue began in 2015 and continued into 2016. This was the basis for this review and analysis: To determine what happened and, just as importantly, why it happened.

Sales revenue, which was the benchmark in this situation, revealed the problem—just not how it became a problem. With the exception of two relatively flat years, 2011 and 2012, revenue gradually increased during the period from 2010 and 2014. Then, in 2015, sales revenue began to decrease and by 2016 was 20% below the 2014 level. Silverton decided that it would be wise to find out what had happened so that they could reverse this trend.

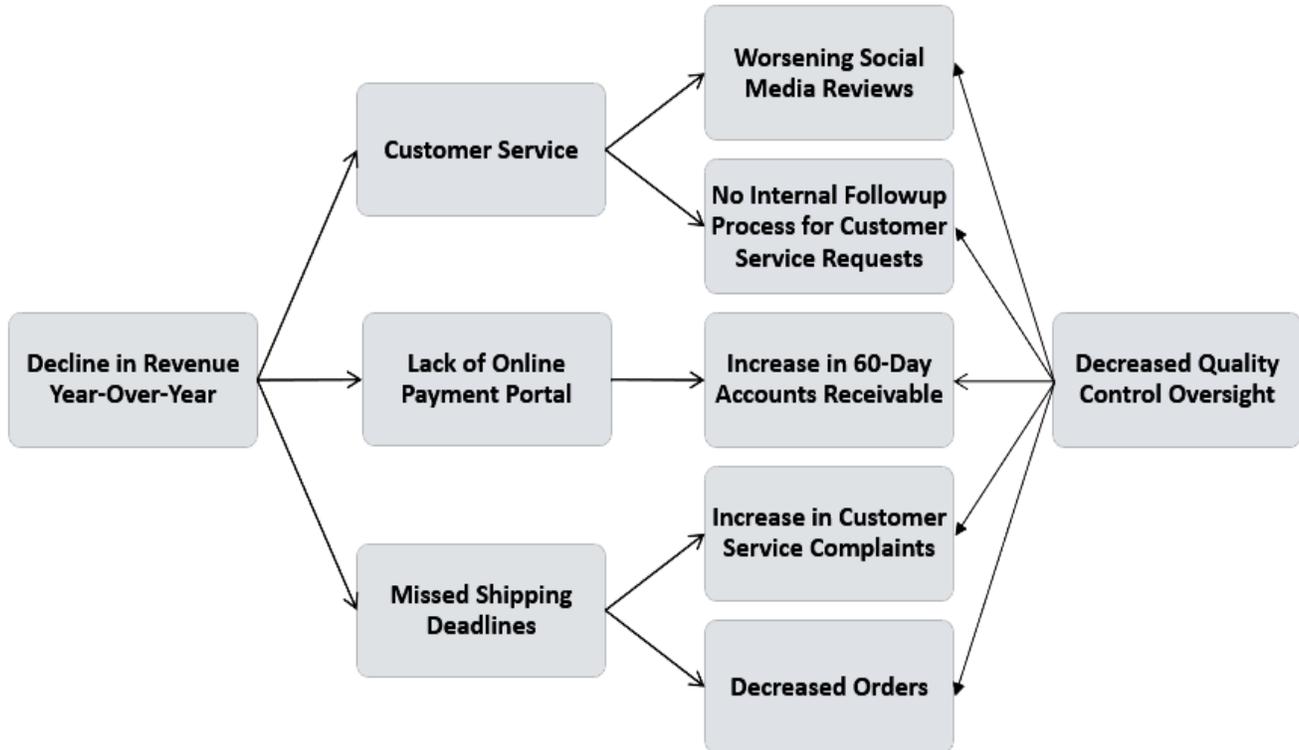
The Company kept track of the competition and any new players that entered the market arena. There appeared to be no connection between the drop in sales and increased competition because new competitors had entered the market while Company revenue was increasing year-over-year.

A loyal core customer base of three large companies had ensured that as their sales grew, so did Silverton's sales. This led, however, to a certain degree of complacency about

# Silverton Specialty Tooling Case Study

quality control, customer service and delivery. In 2015, one of the three companies ordered about half as much as usual and that likely was the major contributor to the decrease in sales revenue. The Company had a substantial number of one-off sales but there was no attempt made to court this segment because of the sales from the three companies. Some of the one-off sales were from companies that might order in larger quantities but there was only a half-hearted effort to get this business.

At this point, the first step in the analysis was to map what happened in 2015 and 2016 in an effort to try to establish why it happened. Information-gathering was an Agile process handled mostly by Company personnel since they, too, wanted to understand what these events.



## Goals

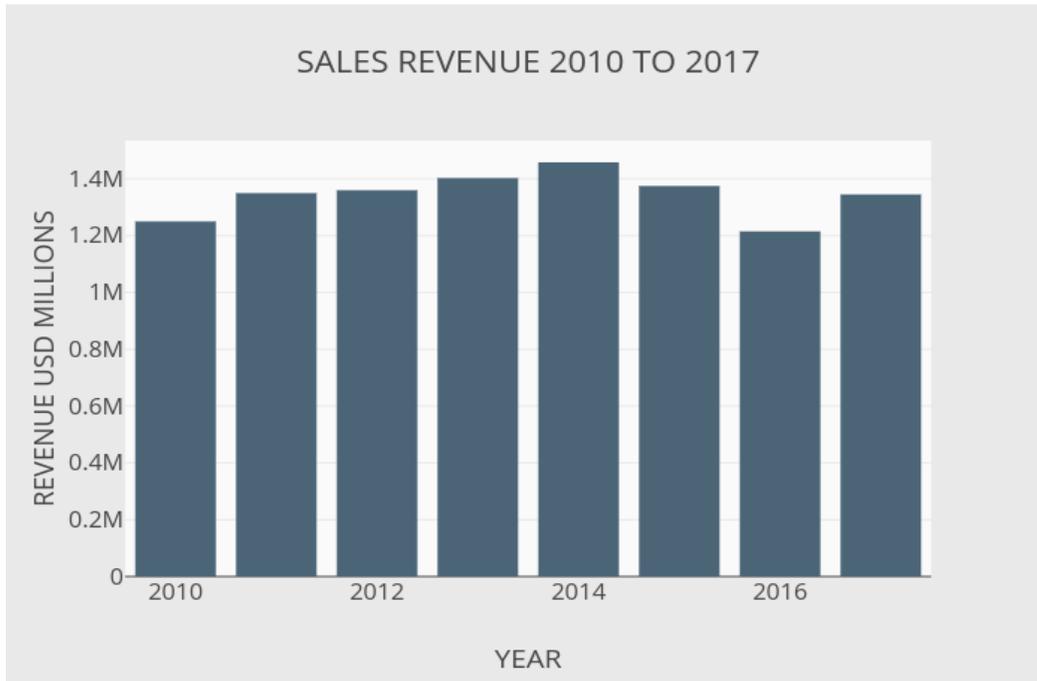
At the outset, the two goals identified were:

1. To reverse the trend of declining sales revenue.
2. To learn what behaviors and processes contributed to the situation; and, to change any behaviors or processes that prevent the Company from reversing the declining sales revenue trend.

# Silverton Specialty Tooling Case Study

## INFORMATION-GATHERING OPERATING PERFORMANCE FACTORS

This part of the assessment was fairly straightforward since it involved a quantitative review of factors such as the Company's financial history with changes in sales revenue, number of orders and order aging.



# Silverton Specialty Tooling Case Study

## EMPLOYEE PERFORMANCE FACTORS

The following framework was used in part while gathering information about Company operations and the behavior of the employees that worked there. These are some of the benchmark requirements against which current employee performance was measured.

### 1.0 Customer Service

- 1.1 Position descriptions exist that are clearly understood by employees.
- 1.2 Each employee understands the necessity for and working toward a client-centric customer service policy.
- 1.3 Each employee responds effectively to customer inquiries because they understand how the product is made, how it works and how it is used. They also understand how the Company operates—in particular, from the customer's point of view.
- 1.4 Each employee understands who or what Company resources are available if they do not have all the information they need to effectively answer customer inquiries.
- 1.5 Each person who is the initial contact with a customer responds quickly to their inquiries or locates someone who can.

### Actions Required

Based on the results of the customer service review, the following actions were recommended:

- Position descriptions that clearly define customer-centric job standards need to be developed for and understood by all customer service personnel.
- All customer service employees need to participate in learning sessions to acquaint themselves with Silverton tooling, how it is made, how it is shipped, and what resources exist for questions that have questions about it.
- Computer-based information needs to be at hand with customer invoice details and order status.
- Company personnel who can act as resources for questions need to be identified.
- Supervisors need to ensure that these goals are met by monitoring employee performance, gathering customer feedback and developing strategies for meeting customer service goals.

### 2.0 Manufacturing and Quality Control

Quality control involved two parts of the operation—manufacturing and quality control for the finished product. Both were equally important.

# Silverton Specialty Tooling Case Study

## 2.1 Manufacturing

- A. Demonstrated ability to read machining blueprints, AutoCAD.
- B. Demonstrated ability to run and program a CNC machine.
- C. Demonstrated ability to run a manual mill and lathe.
- D. Demonstrated ability to produce tooling within acceptable tolerances.
- E. Ability to determine how much material is required for machining projects.
- F. Adaptability to changing assignments.

## 2.2 Quality Control

- A. Demonstrated ability to read machining blueprints, AutoCAD.
- B. Demonstrated ability to assess whether or not tooling is produced to specification, with certified material and within acceptable tolerances.
- C. Communication and computer skills to keep detailed records on each part with notes on material acquisition history.
- D. Ability to make recommendations about process changes to improve quality.

### Actions Required

This section applied to both functions.

- All employees involved in manufacturing and quality control understand machine shop blueprints, tooling specifications, material specifications, Material Data Sheet content, and acceptable tolerance deviations.
- There needs to be method for tracing which employee makes which part.
- All employees need to be well-acquainted with what the tooling looks like finished and within acceptable tolerances.
- All employees need to know how the tooling is used and what happens if the tooling isn't machined properly.
- Position descriptions need to include how the employee is responsible for meeting product standards when the product is manufactured and when it is checked.
- Manufacturing employees need to demonstrate the ability to run CNC machines independently and the ability to work independently from blueprints.
- All employees need to be encouraged to note production deficiencies and to make recommendations for improvements or new methods of doing things.
- In particular with Manufacturing and Quality Control, supervisors need to be actively involved in monitoring how the product is made and how it operates, ensuring that it is to specification and free from defect.

# Silverton Specialty Tooling Case Study

## 3.0 Shipping Department

1. Knowledge of shipping requirements and policies of the three carriers used by the Company: UPS, Fedex and the USPS.
2. Ability to record accurately shipment information and information about package contents.
3. Ability to identify tooling parts in order to pull them from inventory.
4. Ability to assume responsibility for package contents being correct.
5. Ability to determine and adhere to the shipping option—e.g., expedited—chosen by the customer.
6. Ability to package correctly the tooling so that the package arrives intact and the part is undamaged.

### Actions Required

- As in other areas, shipping personnel need to have a thorough understanding of the product and how it is used.
- The requirement for observing shipment deadlines except when the product is backordered or discontinued needs to be part of the job description.
- Handheld computer terminals are necessary to record shipping information including package contents and shipping time. Use of these devices needs to be mandatory.
- Each employee in the Shipping area needs to know how to use the handheld computer terminal to enter information into the UPS, Fedex or USPS system.
- Based on information relayed by the handheld computer terminals, shipping bottlenecks need to be identified and resolved.

## 4.0 Website Development

1. In-depth knowledge of UI and UX website design.
2. Knowledge of PHP, HTML and CSS with ability to code website.
3. Ability to maintain and update website.
4. Ability to reinvent the website to be a sticky website.
5. Ability to monitor website analytics—including social media—for use as metrics.

### Actions Required

- A secure payment portal with feedback options needs to be developed to facilitate online customer payment.

# Silverton Specialty Tooling Case Study

- Social media needs to be used effectively—and where appropriate—to heighten Company visibility.
- A website analytics program needs to be designed to enable the Company to track these metrics as part of its overall goal of making the operation customer-centric.
- A content-rich blog needs to be started to keep customers current with Company operations and to provide industry news, information and resources.

## 5.0 IT Department

This function may be a remote contract position; that has yet to be determined.

1. Ability to write compelling copy for machinists, purchasing agents and Company supervisors or managers as the intended audience.
2. Ability to lay out effectively documentation with machine tooling diagrams and other graphics.
3. Willingness to develop in-depth knowledge about the product.
4. Ability to produce webinars and instructional videos.

### Actions Required

- A product operating manual is needed.
- A product maintenance manual is needed.
- Instructional videos are required on how the product is made, how it is used and how to maintain it.
- Webinars are required to provide product and industry updates to existing or potential customers.

## **SUPERVISORY AND MANAGEMENT PERFORMANCE FACTORS**

The following is expected of all supervisors.

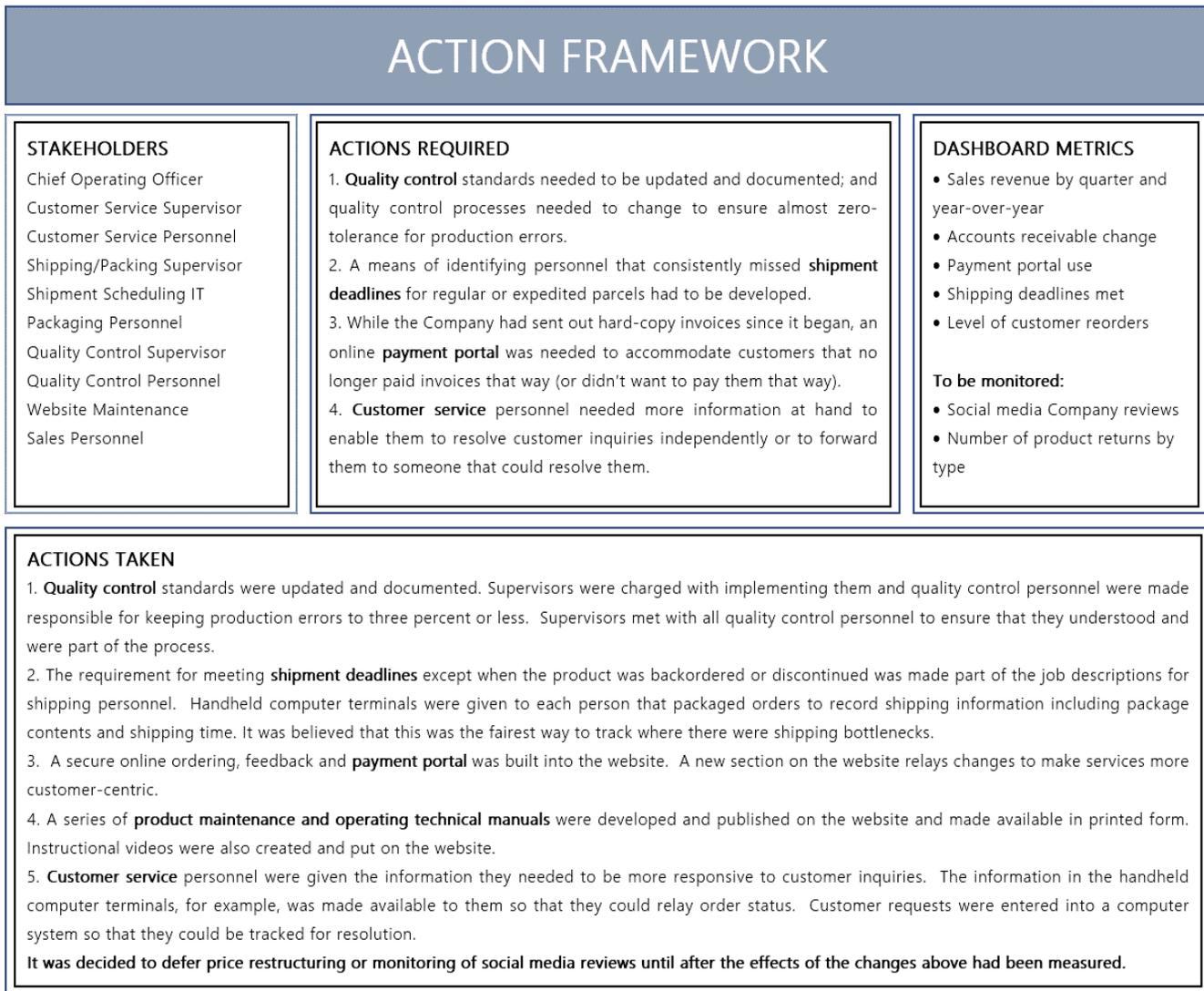
- Relays performance expectations in the context of overall Company goals; monitors performance; assures that employees are performing as expected.
- Develops and adjusts priorities when appropriate.
- Plans and organizes workloads and timelines to ensure work is completed as required.
- Develops and implements metrics to measure results using key performance indicators (quality, quantity, cost, timeliness, and frequency of completion of assigned tasks).

# Silverton Specialty Tooling Case Study

- Monitors processes, progress, and results to achieve organizational goals; designs feedback loops into work.

## Company Action Framework

The Company's action framework reflects the overall goals and is the overarching guide for these processes. The framework below shows the steps for creating it. Stakeholders were first identified and then the actions required. The actions taken and the dashboard metrics used to monitor them were then developed.



From this, the dashboard was developed. The metrics shown on this dashboard were derived from data to date. The Company will update these going forward to monitor their progress toward attaining their goals.

# Silverton Specialty Tooling Case Study

## Silverton Specialty Tooling

### KPBI™ METRICS

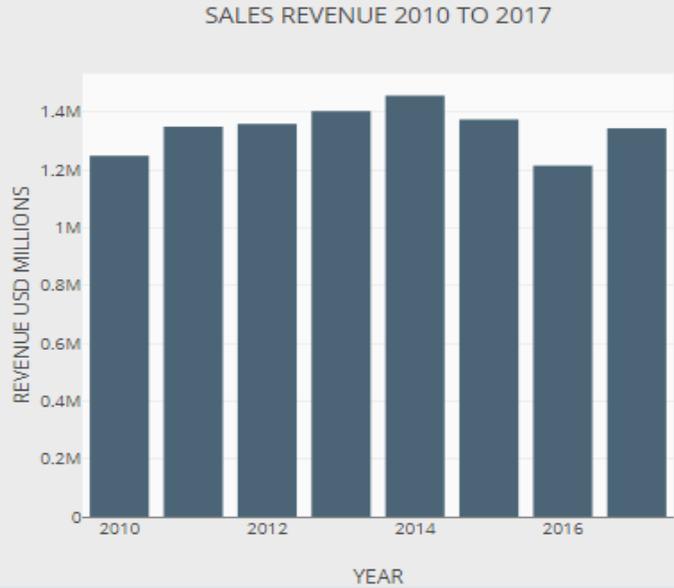
#### PERFORMANCE METRICS AT YEAR-END 2017

- Quarterly revenue trended upward during 2017 to an increase of 20% over 2016
- The number of 60-day accounts receivable decreased in direct proportion to an increase in use of the online payment portal
- Shipping deadlines were met on average 17% more of the time in 2017 than in 2016
- The number of repeat orders increased in 2017 over 2016 by 41%.

#### BEHAVIORAL METRICS AT YEAR-END 2017

- An internal policy for following up on customer requests or complaints was instituted and a method for recording them was established. It

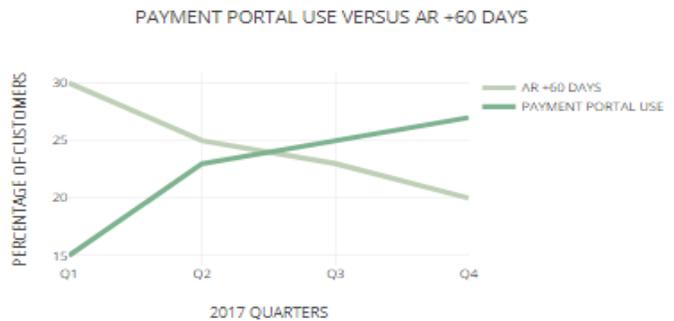
### SALES REVENUE



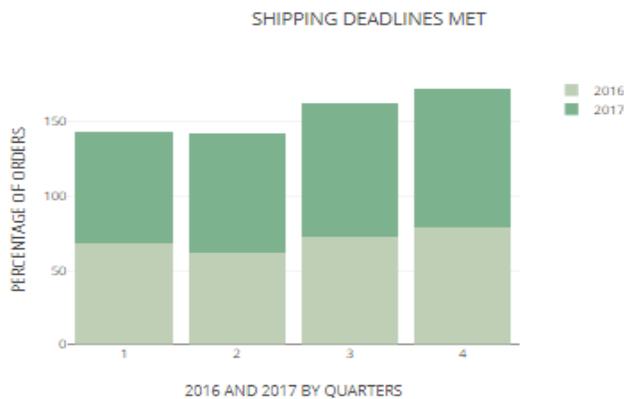
### QUARTERLY SALES REVENUE



### ACCOUNTS RECEIVABLE +60 DAYS INCREASE/DECREASE



### SHIPPING DEADLINES



### CUSTOMER REORDERS



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We can provide you with an assessment like this one or provide you with what you need to do it yourself—just ask us.

## CONTACT US

AT

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