

Primer



September 1996

© 1996 Ford Motor Company. All Rights Reserved

FOREWORD

Objective...

The objective of this primer is to tell you *what a Quality Operating System (QOS) is*, not to tell you *how to implement* a QOS.

Target Audience....

The target audience for this primer is anyone who will come in contact with the QOS methodology.

This could be someone who will participate in developing a QOS, or someone in an organization implementing a QOS.

Desired Outcomes....

After reviewing the QOS Primer, you should:

- understand the QOS wheel.
- understand QOS terms.
- understand the benefits of a QOS.
- know where to go for QOS training, materials, and support.

TABLE OF CONTENTS

[Introduction](#)

[Identifying Customers and Their Expectations](#)

[Identifying Key Processes](#)

[Selecting Measurables](#)

[Tracking Trends of Measurables](#)

[Predicting Downstream Performance](#)

[Constant Employee Awareness](#)

[Continual Process Improvement](#)

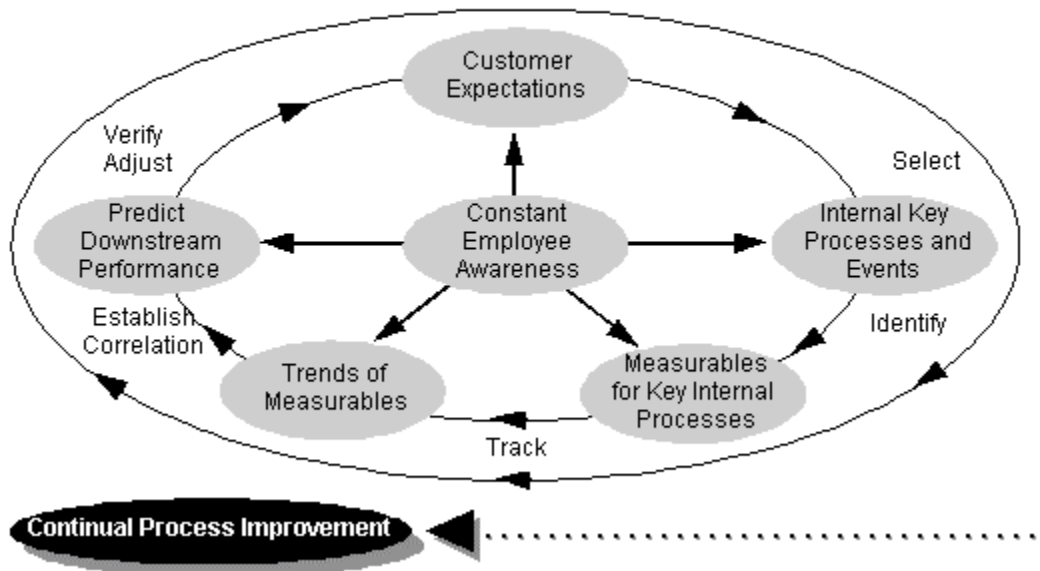
APPENDIX

[Glossary of Terms](#)

IDENTIFYING CUSTOMERS AND THEIR EXPECTATIONS

The first step of the QOS wheel focuses on identifying your customers and their expectations.

Quality Operating System.....



Who Are Your Customers?

Your customers are the direct and indirect beneficiaries of the output of your process. The output of your process is a product or service.

Are There Different Types of Customers?

There are two types of customers, **internal** and **external**.

Internal Customers include:

- employees downstream in your process.
- managers, owners, or stockholders.

External Customers include:

- end-customers or consumers of your products or services.
- dealers, governments, and other outside agencies.

Internal and external customers have expectations of your product or service.

What Are Customer Expectations?

Customer expectations are the customer defined attributes of your product or service you must meet or exceed to achieve customer satisfaction.

Are There Different Types of Customer Expectations?

There are two types of customer expectations, ***expressed*** and ***implied***.

Expressed Customer Expectations are:

- written, e.g., terms of a contract.
- spoken, e.g., voice of the customer.

Implied Customer Expectations are:

- too difficult for the customer to clearly communicate.
- not written or spoken, but very basic to the product or service, e.g., the customer expects wheels on a car.

How Are Customer Expectations Identified?

Here are several methods to help identify your customer expectations.

- market research
- focus groups
- satisfaction surveys
- warranty records
- news media
- contractual agreements
- phone calls
- site visits
- informal discussions
- competitive benchmarking

Do Customer Expectations Change Over Time?

Customer expectations change over time due to enhancements to products or services by competitors, technological innovations, or improved performance of your process.

It is important to periodically update your knowledge of customer expectations. The same methods used to identify your customer expectations can be used to update them.

To summarize, let's look at a simple example to help you better understand ***identifying your customers and their expectations***.

Example: Pat's Weight

Pat had not been feeling well lately, often feeling low on energy and experiencing shortness of breath. Pat's Doctor advised Pat to lose weight. Pat wondered, "How can I monitor and control my weight loss process?"

Pat works for a Ford Q1 supplier and is familiar with the QOS methodology. Pat thought, "Hey, I can use the QOS methodology to monitor my quest for weight loss!"

Pat's first action was to identify customers. The internal customer is Pat. Pat is the manager of the processes that deliver weight loss. The external customer is also Pat. Pat is the primary beneficiary of the processes that deliver weight loss.

Please note, in your QOS the internal and external customers are not likely to be the same.

Pat's second action was to identify customer expectations. Pat's primary expectation was to ***lose weight***. Pat's secondary expectations were to ***feel more energetic*** and ***reduce shortness of breath***.

Customer(s)

Pat

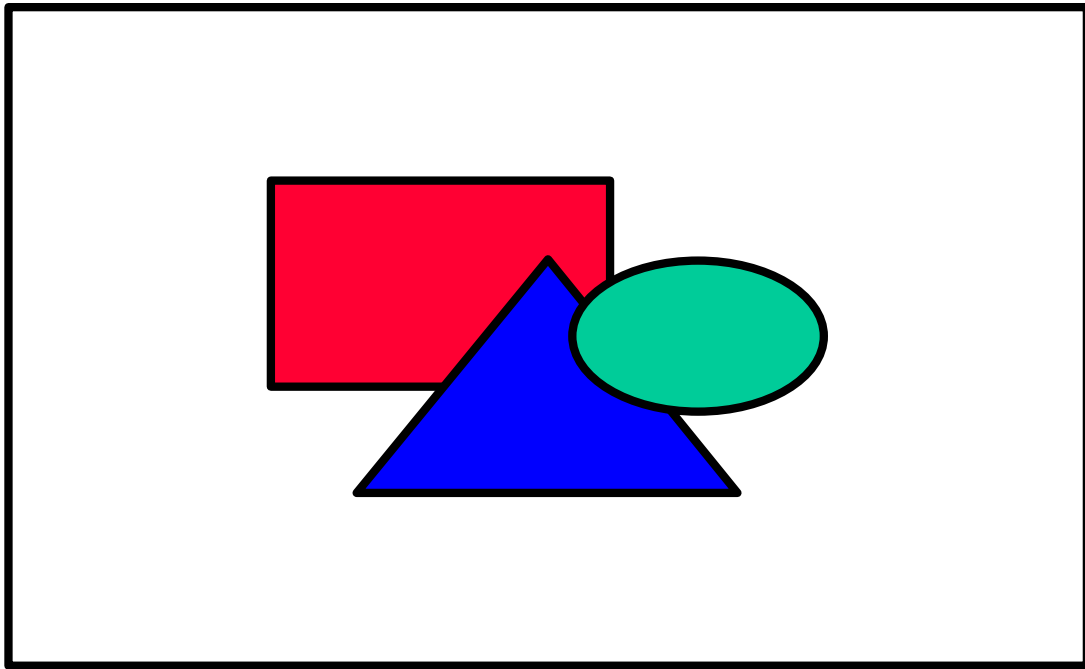
Customer Expectations

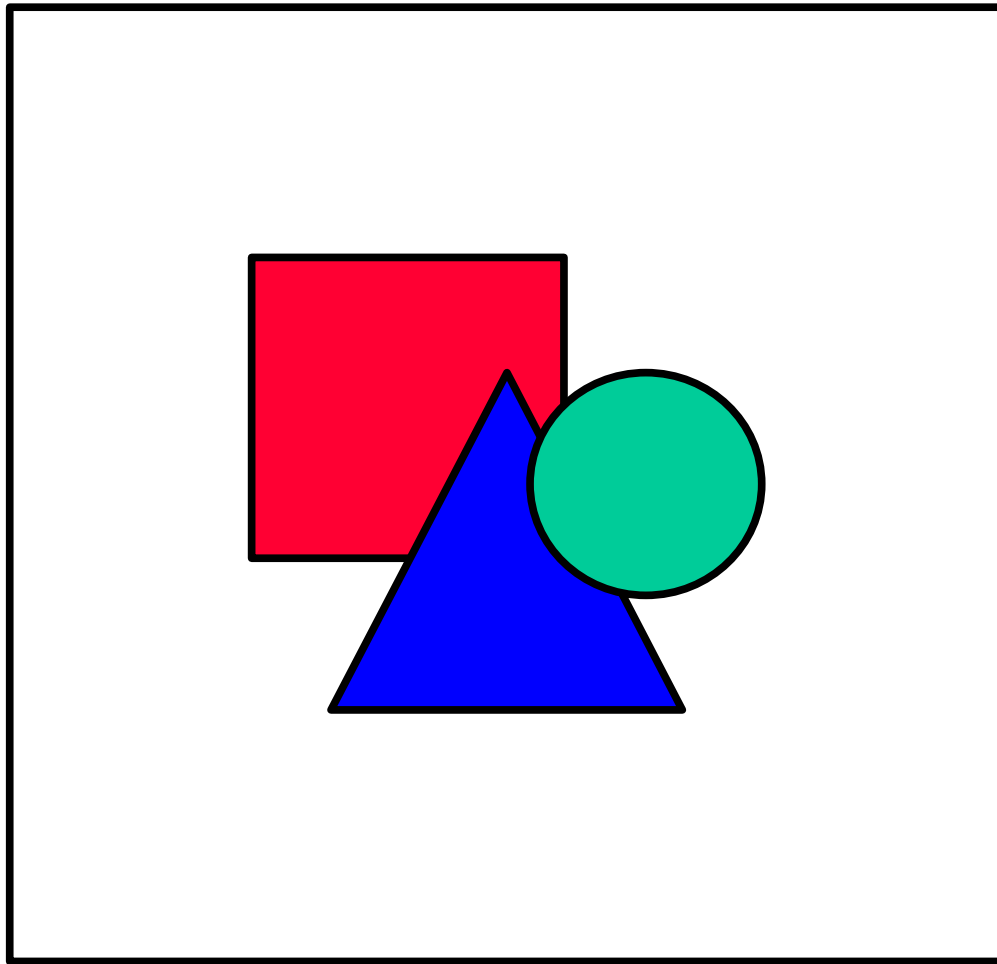
- lose weight
- feel more energetic
- reduce shortness of breath

Now, let's move to the second step of the QOS wheel, **Identifying Key Processes**.

IDENTIFYING KEY PROCESSES

The second step of the QOS wheel focuses on selecting your key processes.





What Are Key Processes?

A key process highly impacts your ability to deliver one or more customer expectations.

A key process may be a complete process or a subprocess. Key processes are not limited to manufacturing. They can be found in any area, at any level of your business. Here are some examples of key processes.

Manufacturing

- machining
- training
- assembly
- preventive maintenance

Service

- sales
- recruiting
- accounts receivable
- customer service/support

How Are Key Processes Identified?

Key processes are identified by looking at each customer expectation, and identifying the process or processes having the greatest impact on meeting that customer expectation.

Now, let's look at Pat's QOS to help you better understand the **key processes** step of the QOS wheel.

Example: Pat's Weight

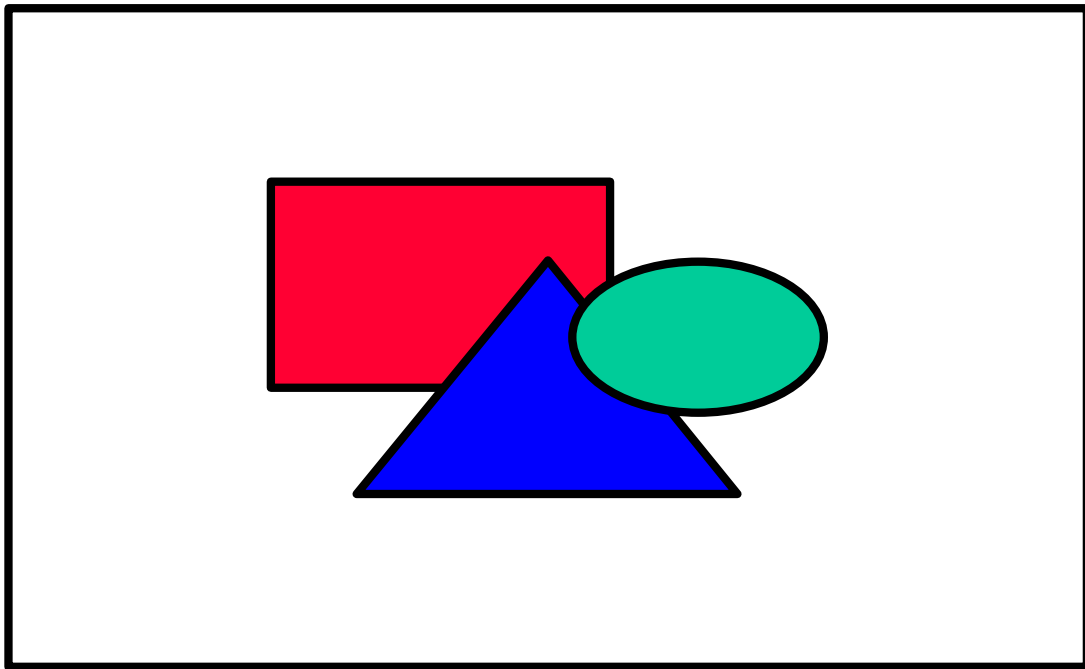
Remember, key process are identified by looking at each customer expectation. Let's focus on Pat's primary customer expectation, **lose weight**. Pat's Doctor warned Pat not to rely on "quick fixes," such as fad diets. Fad diets may yield short term results, but do not sustain weight loss over time. Pat's Doctor said in order to lose weight, Pat must eat better and exercise. Taking the Doctor's advice, Pat identified the two key processes critical to losing weight as **diet** and **exercise**.

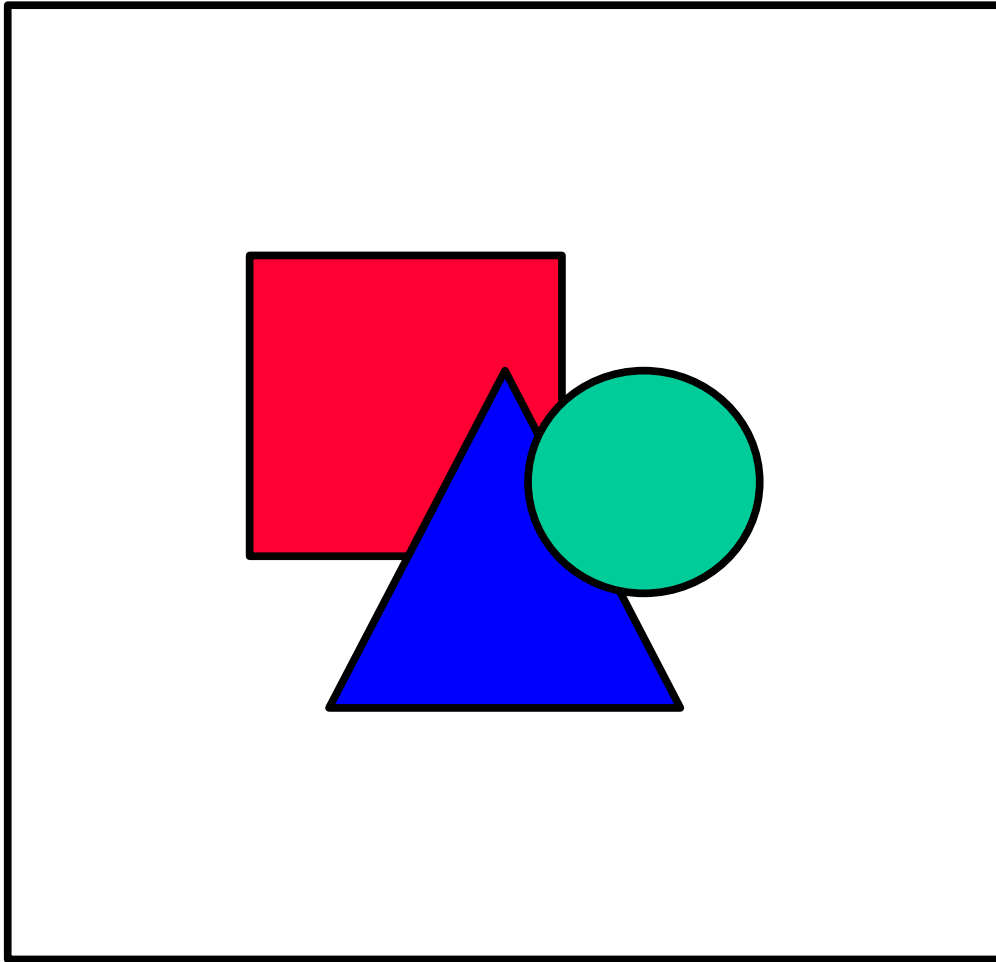
Customer Expectation	Key Processes
lose weight	<ul style="list-style-type: none">• diet• exercise

Now, let's move to the third step of the QOS wheel, **selecting measurables**.

SELECTING MEASURABLES

The third step of the QOS wheel focuses on selecting measurables and goals.





What Are Measurables?

Measurables are quantifiable indicators of how your processes are performing, or how effectively you are meeting your customer expectations. Measurables are:

- often expressed graphically using numbers or percentages.
- tracked over time.
- compared to a goal or objective.

Are There Different Types of Measurables?

There are two types of measurables, ***process*** and ***result***.

Process Measurables:

- tell you how well your key processes are performing.
- predict the performance of result measurables.

Result Measurables:

- tell you how well you have met your customer expectations.

- external customer expectations, e.g., customer satisfaction and on-time delivery.
- internal customer expectations, e.g., strategic goals and objectives.
- show improvement only after the key processes are improved.

How Are Process Measurables Identified?

Process measurables are best identified by employees connected to your key processes. They look at events in each key process, and use brainstorming or a similar technique to identify potential measurables.

For example, if **training** is a key process, then employees connected to the training process (trainees, trainers, and human resources) may agree that the **percentage of employees trained** is a potential process measurable.

How Are Result Measurables Identified?

Result measurables are identified by reviewing your customer expectations. Result measurables are direct measures of external and internal customer expectations for cost, quality, and delivery of your product or service.

For example, if your internal customer expectations (strategic goals and objectives) say you will reduce variable cost by 5%, reduce customer rejects to 0.5%, and achieve on-time delivery of 100%, then **variable cost**, **percent customer rejects**, and **percent on-time delivery** are potential result measurables.

After you identify a list of potential measurables, the next action is to select the measurables to include in your QOS.

How Are Measurables Selected?

Before you add a measurable to your QOS make sure the measurable is:

of obvious value. . .

The measurable is of obvious importance to managing your business.

actionable. . .

The measurable will help choose a course of action.

accessible. . .

The measurable data is easily accessible.

understandable. . .

Each measurable must be clearly communicated. Explain each measurable in simple, easily

understood terms.

agreed upon. . .

Involving employees connected to the process in determining the process measurables ensures a focused, team effort.

predictive. . .

Properly chosen process measurables should predict future performance of your result measurables.

Once you have selected your measurables, you must set goals for each measurable.

How Are Goals Set?

Goals must be set for each measurable. Benchmarking studies, industry standards, statistical process control, and stretch objectives may be used to set goals for process and result measurables. Often, goals for result measurables are strategic business imperatives or contractual agreements with customers, e.g., 95% customer satisfaction or zero quality rejects, respectively.

Setting goals is often a difficult task. It is important to make sure your goals are:

aggressive, yet attainable. . .

Goals should stretch employees to work faster and smarter; however, goals that appear unattainable are often demoralizing.

agreed upon. . .

Involving stakeholders in setting goals ensures a focused, team effort in attaining the goals.

clearly benefiting your business. . .

Too often goals are set without considering resource constraints (people, time, and money).

flexible. . .

To further continual improvement, goals will change over time. Goals may change due to improved internal performance, competition, or customer requirements.

Now, let's look at Pat's QOS to help you better understand the ***selecting measurables*** step of the QOS wheel.

Example: Pat's Weight

What are the measurables for Pat's weight problem? What are good process measurables? What are good result measurables?

To identify process measurables, Pat looked at the key processes. Pat wondered, "How can I measure ***diet*** and ***exercise***?" Pat and Pat's Doctor agreed that good choices for process

measurables were to measure the ***number of calories consumed*** and the ***number of minutes exercised***.

Key Processes	Process Measurables
<ul style="list-style-type: none">• diet• exercise	<ul style="list-style-type: none">• number of calories consumed• number of minutes exercised

To identify result measurables, Pat looked at the primary customer expectation. Pat wondered, "How can I measure the customer expectation, ***lose weight?***" Pat and Pat's Doctor agreed that a good choice for a result measurable is to measure ***Pat's weight***.

Customer Expectations	Result Measurables
<ul style="list-style-type: none">• lose weight	<ul style="list-style-type: none">• Pat's weight

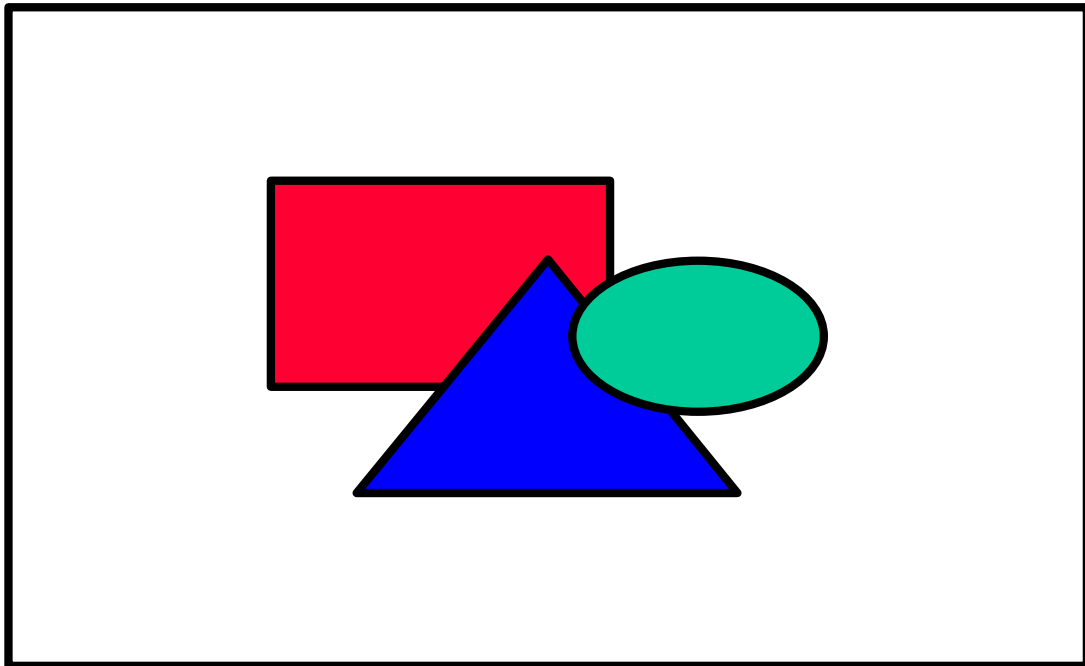
The next step is to set goals for each measurable. Pat's Doctor suggested a goal for ***Pat's weight*** is ***175 lbs.*** To reach ***175 lbs.***, Pat and Pat's Doctor agreed the goal for the ***number of calories consumed*** is to consume ***less than 2,500 calories per day***, and the goal for the ***number of minutes exercised*** is to exercise an ***average of 30 minutes per day***.

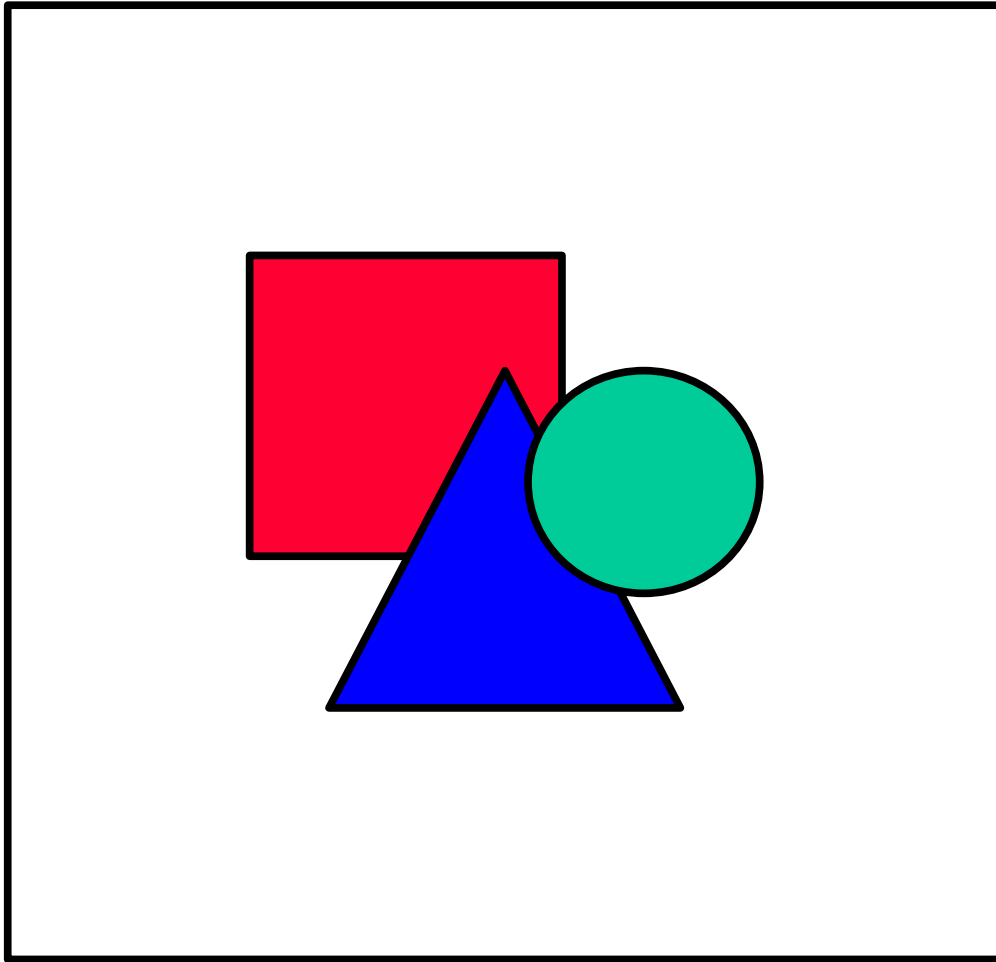
Measurable	Goal
<ul style="list-style-type: none">• Pat's weight• number of calories consumed• number of minutes exercised	<ul style="list-style-type: none">• 175 lbs.• less than 2,500 calories per day• average of 30 minutes per day

Now, let's move to the fourth step of the QOS wheel, ***tracking trends of measurables***.

TRACKING TRENDS OF MEASURABLES

The fourth step of the QOS wheel focuses on establishing your QOS team. Your QOS team reviews the trends of measurables versus goals. When your measurables fail to meet a goal or indicate an adverse trend, your QOS team applies structured problem solving.





Who Is on the QOS Team?

At a minimum the QOS team must consist of a QOS chairperson and measurable champions.

It is imperative the QOS chairperson is a member of management. The QOS chairperson is responsible for scheduling and leading the on-going QOS review meetings, as well as preparing meeting agendas and minutes.

Measurable champions are responsible for leading problem solving teams outside of the QOS review meetings, and preparing the appropriate QOS tools for presenting at the QOS review meetings. The QOS tools (trend chart and goal, prioritization tool, problem solving tool, and data over time tool) and their definitions are shown on page 22.

How Frequently Does the QOS Team Meet?

It is recommended you hold your QOS review meetings monthly. Measurable champions meet with their problem solving teams outside the QOS review meetings as often as required.

What Is Discussed at a QOS Review Meeting?

Each measurable champion takes a turn presenting to the QOS team. A flowchart of a measurable champion's presentation is detailed on page 23, and can be summarized as follows:

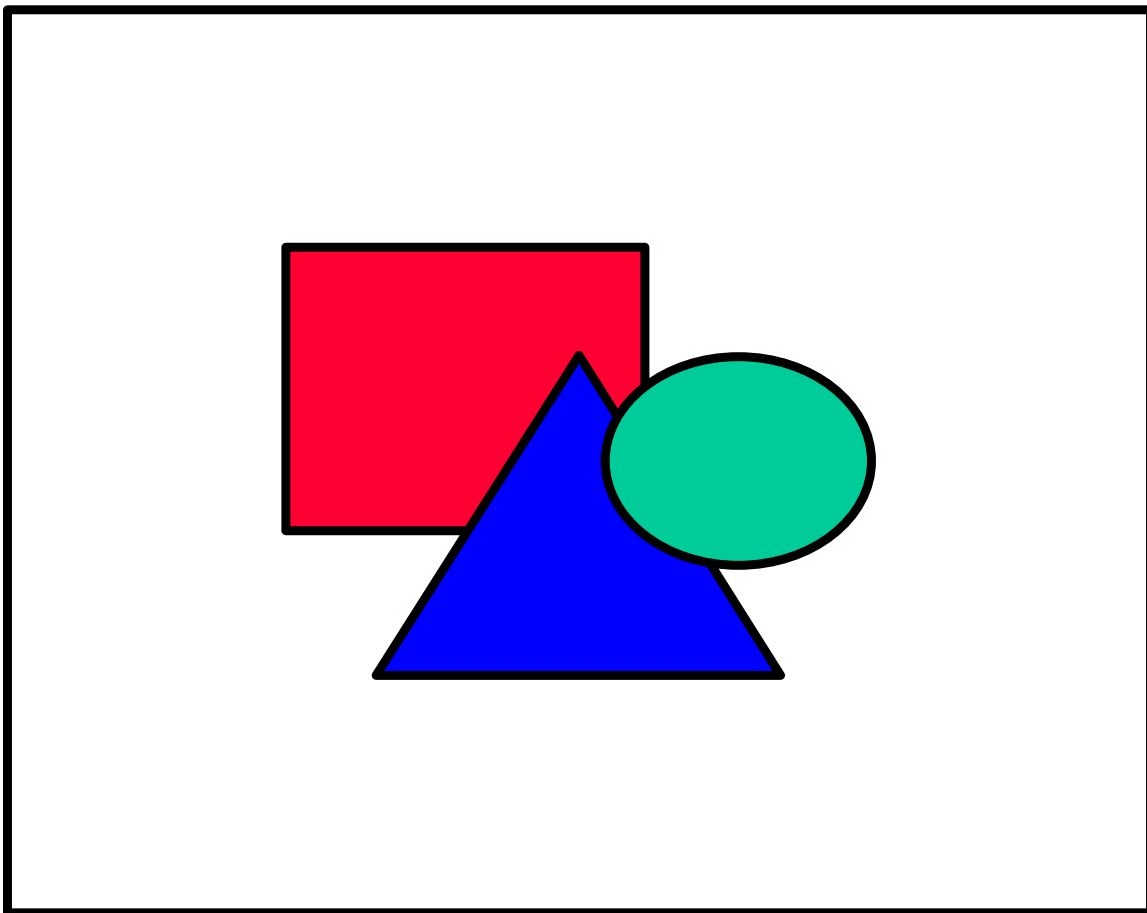
The measurable champion begins by reviewing the trend chart and goal. If the trend is adverse to the goal or not meeting the goal, the measurable champion will review the prioritization tool, problem solving tool, and data over time tool. If the trend meets the goal, the measurable champion may choose to discuss additional improvement opportunities.

By implementing and reviewing the QOS tools you will:

- track your progress toward meeting your goals.
- identify potential areas for continual process improvement.
- identify specific improvement actions.
- verify the success of improvement actions.

Now, let's take a look at a QOS review meeting for Pat's QOS (page 24).

QOS Tools



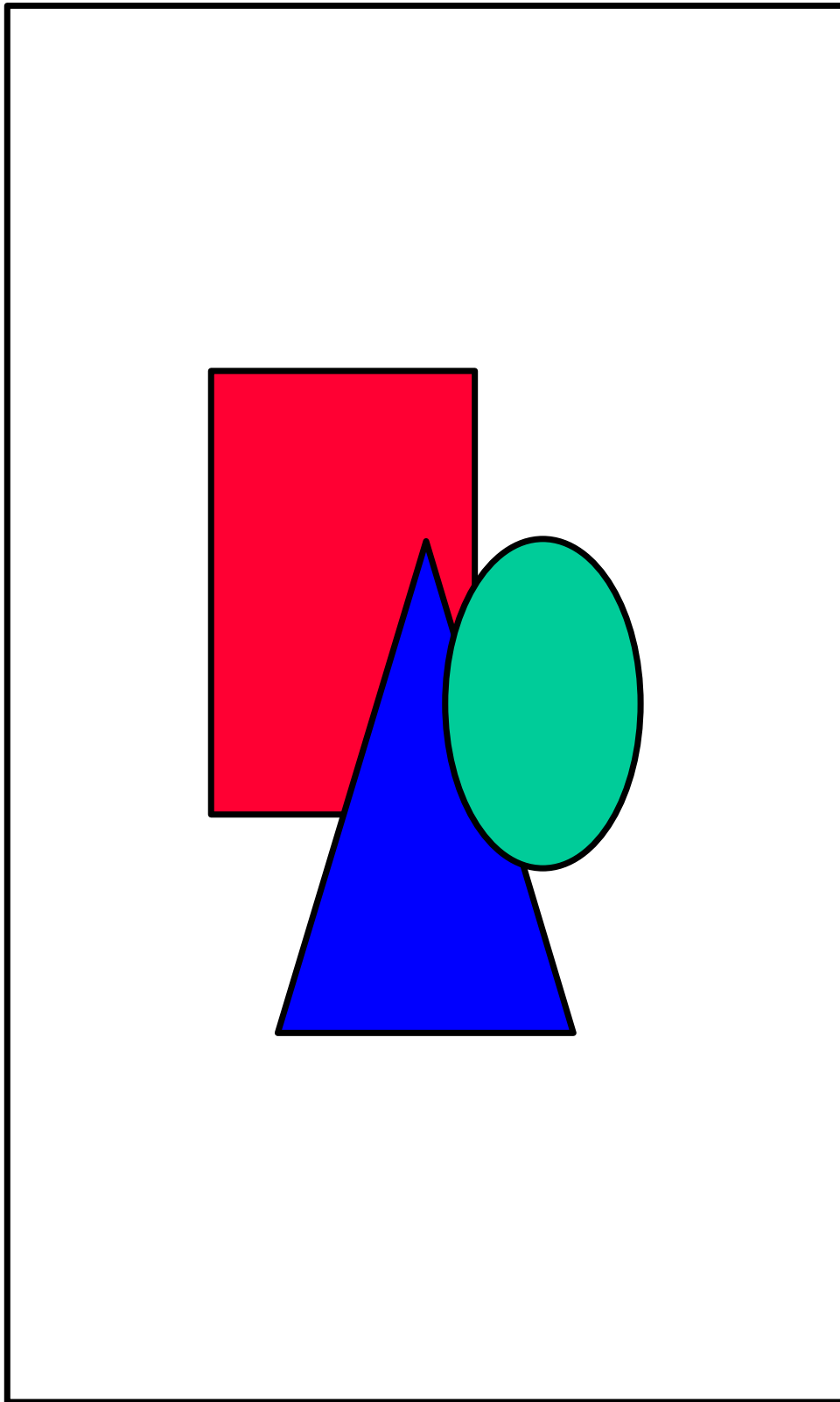
Trend Chart and Goal displays the performance of a measurable over time in comparison to a goal line.

Prioritization Tool displays data grouped by symptom or cause allowing for the identification and prioritization of problems, e.g., pareto chart or pie chart.

Problem Solving Tool helps eliminate or alleviate problems. The tool helps identify root causes and preventive and corrective actions, e.g., TOPS, 8-D, 5-D.

Data Over Time Tool logs instances or occurrences of events over time by symptom or cause, e.g., Paynter chart.

Measurable Champion's Presentation

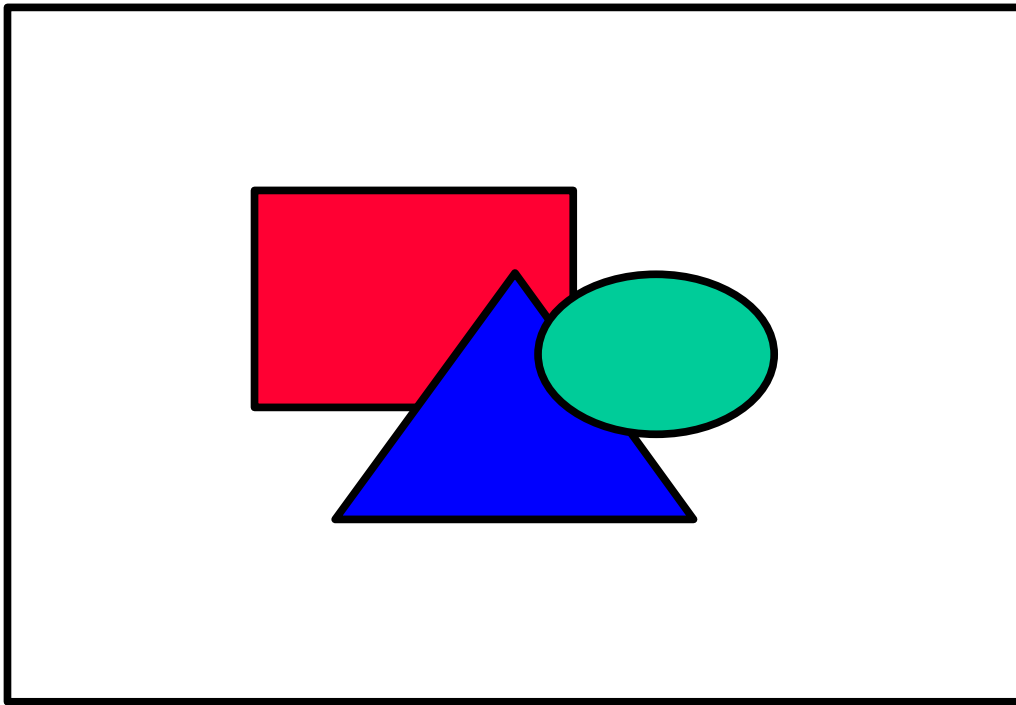


Example: Pat's Weight

The QOS team consists of Pat and Pat's Doctor. They agreed to schedule monthly appointments to monitor Pat's progress. Pat brought in the QOS tools for review at the monthly appointments.

Trend Charts and Goals

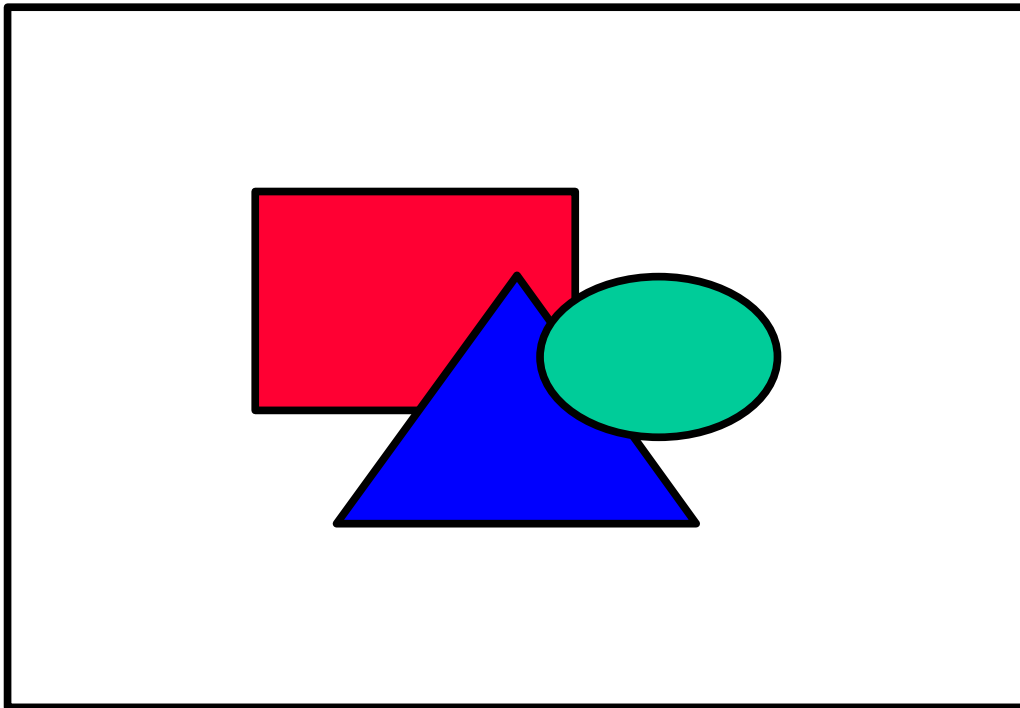
The first step Pat and Pat's Doctor took was to look at the trend charts and goals of Pat's measurables. Here is the trend chart and goal for the result measurable ***Pat's weight***:



Movement of your trend away from your goal, or lack of progress toward your goal, signals problems. The trend shows Pat is not making progress in reaching the goal of ***175 lbs.***

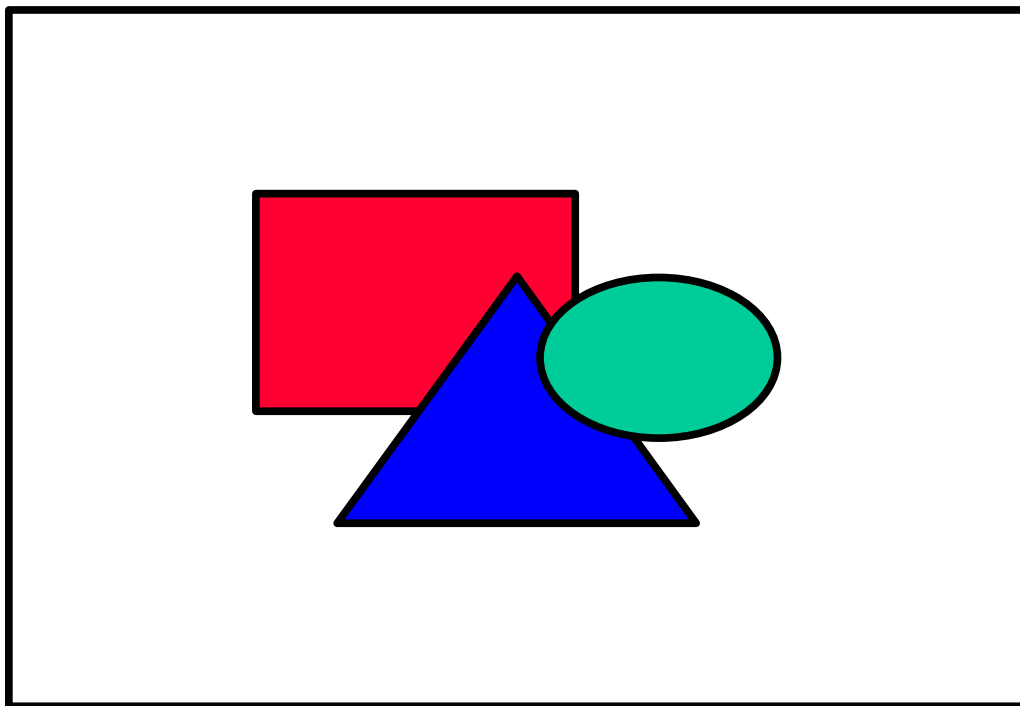
Just as jumping on a scale everyday will not improve Pat's weight, reviewing result measurables will not improve your business. To improve your result measurables, you must first improve your key processes. In Pat's case, to improve ***Pat's weight***, Pat must first improve the key processes, ***diet*** and ***exercise***.

Let's look at the key process, ***diet***. Here is the trend chart and goal for the ***diet*** process measurable, ***number of calories consumed***:



The trend shows Pat's **diet** process is in control and is consistently meeting the goal of consuming **less than 2,500 calories per day**. Immediate action is not necessary; however, Pat should continue to monitor the *diet* process and look for opportunities for improvement.

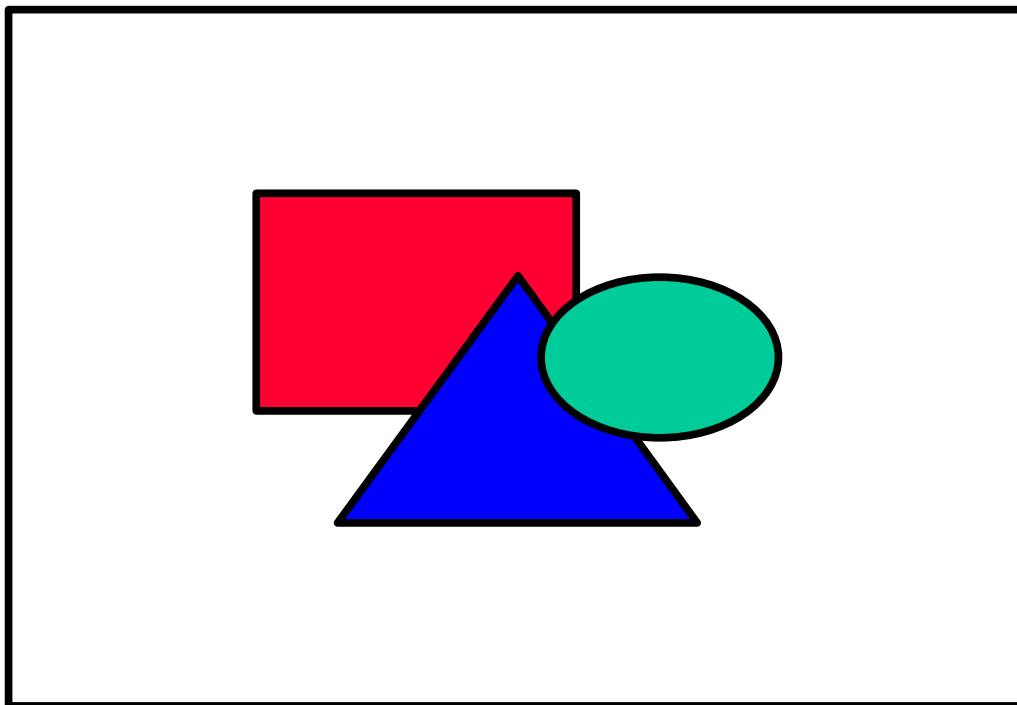
Now, let's look at the key process, **exercise**. Here is the trend chart and goal for the **exercise** process measurable, **number of minutes exercised**:



The trend shows Pat has been falling short of the **exercise** process goal of exercising an **average of 30 minutes per day**. Poor performance in a process measurable usually predicts poor performance in a result measurable. In other words, if Pat does not gain control of the **exercise** process, **Pat's weight** is not likely to improve.

Prioritization Tool

The next step Pat and Pat's Doctor took was to look at a prioritization tool. Pat chose to use a pareto chart. Here is the pareto chart showing the reasons Pat did not meet the goal of exercising an ***average of 30 minutes per day***.



The pareto chart shows the highest frequency reasons Pat did not meet the goal of exercising an ***average of 30 minutes per day*** were:

- watching TV programs.
- major projects at work.

Watching television and working long hours are the areas Pat must look to identify the root cause(s) for not meeting the goal of exercising an ***average of 30 minutes per day***. By finding and eliminating the root cause(s) behind the highest frequency reasons, Pat will enact continual improvement.

Problem Solving Tool

The next step Pat and Pat's Doctor took was to look at the efforts of their problem solving team. In the normal course of business, the problem solving team consists of a cross-functional team representing stakeholders in the process. In this example, Pat and Pat's Doctor comprise the problem solving team.

At the prior month's QOS review meeting, the problem solving team was assigned to look into increasing the number of minutes Pat exercises per day. They chose to use the Ford 8-D Team Oriented Problem Solving process. Here is their 8-D summary report:

Problem	Identify Team	Containment Action and	Root Cause Description and	Problem Quantification and	Permanent Corrective Action and	Preventive	Congratulate
---------	---------------	------------------------	----------------------------	----------------------------	---------------------------------	------------	--------------

Description		Timing	Verification	Corrective Action	Timing	Action	Team
Insufficient number of minutes exercise per day.	1) Pat. 2) Pat's Doctor.	No interim action. Concentrate on permanent corrective action.	1) Pat prefers watching television to exercising; 2) Pat's new job is cutting into free time	1) Television takes up 60% of Pat's free time; 2) Free time reduced by 30% due to new job.		Purchase an exercise bicycle and exercise while watching TV. First 30 minutes of television per day must be watched while on exercise bike.	Complete.

The 8-D summary report identifies the following root causes:

- | # | <u>Pareto</u> | <u>Root Cause</u> |
|----|------------------------|--|
| 1. | Watch TV Programs | Pat prefers watching favorite television programs to exercising. |
| 2. | Major Projects at Work | Pat's new job is limiting the time available for exercise. |

The team agreed to first address the #1 root cause, Pat prefers watching favorite television programs to exercising. The #2 root cause, Pat's new job is limiting the time available for exercise, will be addressed at a later date.

Many alternatives to address the #1 root cause were discussed by the problem solving team. The alternatives included: riding a bicycle to work, joining a fitness center, selling the television, etc. Finally, the team agreed on the following corrective action to eliminate the identified root cause:

- | # | <u>Corrective Action</u> |
|----|--|
| 1. | Purchase an exercise bicycle and exercise while watching television. |

Data Over Time Tool

The next step Pat and Pat's Doctor took was to use a data over time tool to verify the corrective action reduced or eliminated the root cause. Pat chose to use a Paynter chart. Here is the Paynter chart showing a detailed look at the ***number of minutes exercised*** one month after the corrective action was enacted:

Daily Exercise Log - Minutes of Exercise									
	1-Jan	8-Jan	15-Jan	22-Jan	29-Jan	5-Feb	12-Feb	19-Feb	26-Feb
Avg.	31	24	26	19	25	34	32	33	31
Mon	35	30	0	0	15	40	25	30	25
Tue	20	0	35	0	0	35	35	35	35

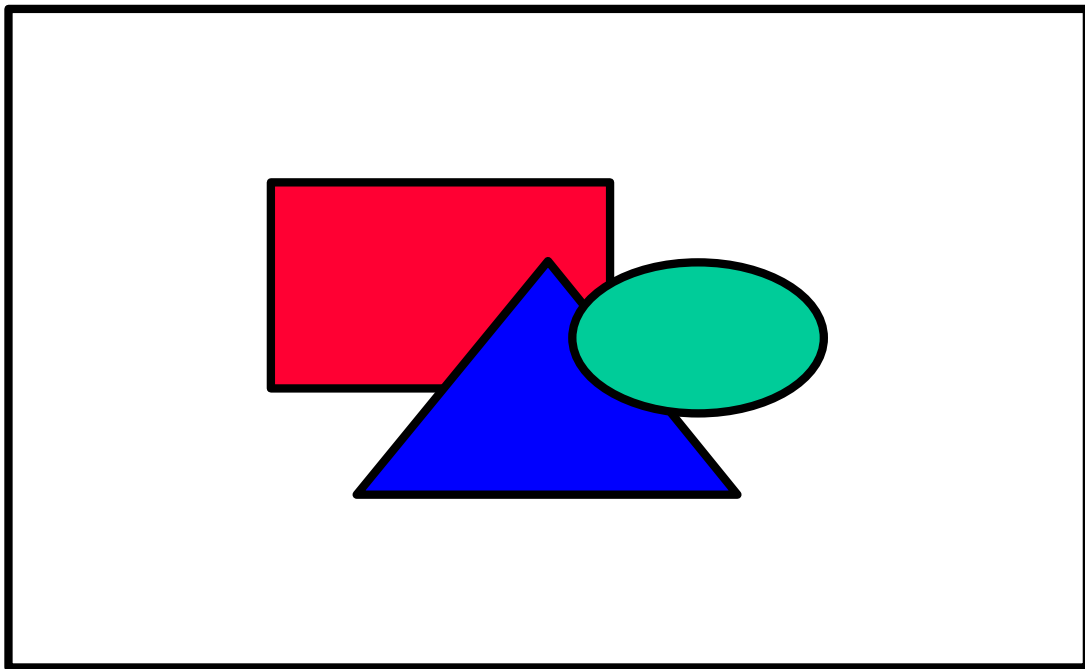
Wed	30	30	20	25	30	25	25	25	35
Thu	35	30	25	35	30	40	35	35	20
Fri	35	10	35	15	25	25	25	25	35
Sat	35	35	35	30	40	40	35	45	30
Sun	25	35	30	30	35	35	45	35	40

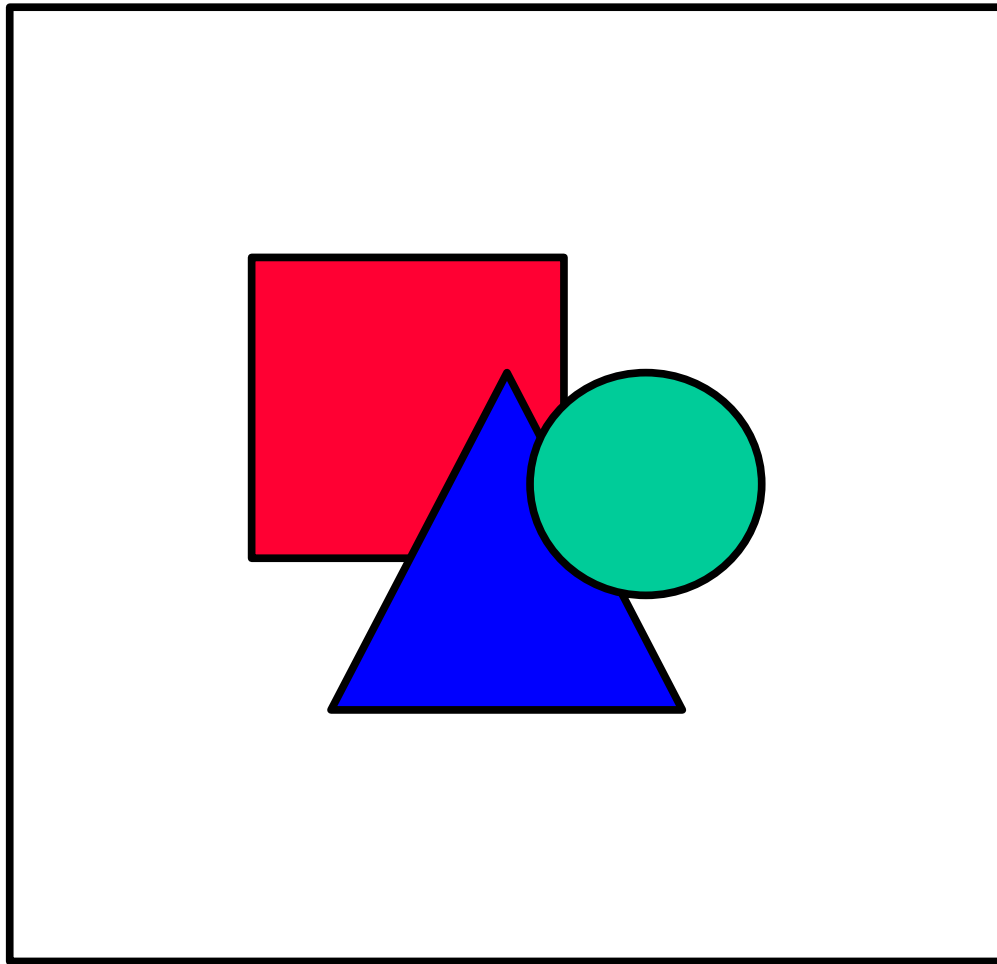
The corrective action, ***purchase an exercise bicycle and exercise while watching television***, was put into place on February 5th. As the Paynter chart shows, Pat began meeting the goal of exercising an ***average of 30 minutes per day*** on February 5th. The Paynter chart verifies the corrective action resulted in improvement in the process measurable, ***number of minutes exercised***.

Now, let's move to the fifth step of the QOS wheel, ***predicting downstream performance***.

PREDICTING DOWNSTREAM PERFORMANCE

The fifth step of the QOS wheel focuses on establishing correlation of your process measurables to your result measurables to help predict downstream performance.





Why Correlate Measurables?

The ultimate success of your QOS depends on your ability to correlate your process measurables to your result measurables. Remember, result measurables measure your ability to meet customer expectations. By ensuring a high correlation between your process and result measurables, you can predict whether or not your processes are capable of meeting your customer expectations. If your processes are not capable, adjustment or improvement of your processes is required.

How Do You Establish Correlation?

There are two methods for establishing correlation between your process and result measurables. The first method, mathematical correlation, is too difficult to explain here. You may wish to refer to a statistics textbook. We will focus on the second method, visual correlation. A high correlation between measurables can be established if the measurables consistently move together in the same direction, or in opposite directions, over time.

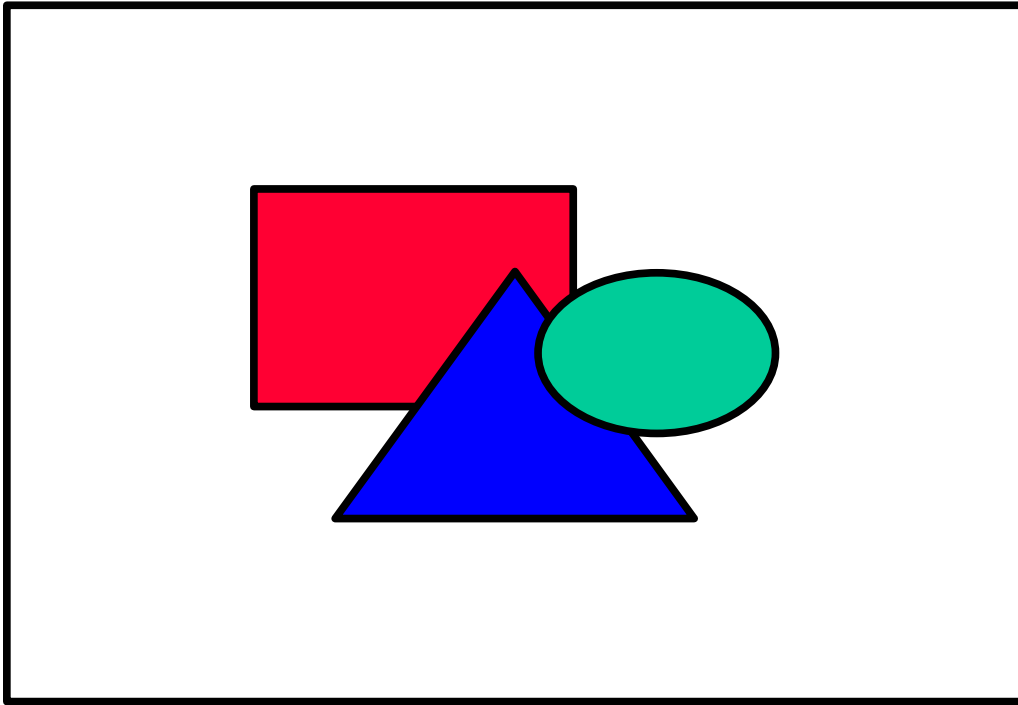
Often, improvement in the result measurable trend will lag behind improvement of the process measurable trend. Consideration for this effect must be given when establishing correlation.

Now, let's look at Pat's QOS to further understand the ***predicting downstream***

performance step of the QOS wheel.

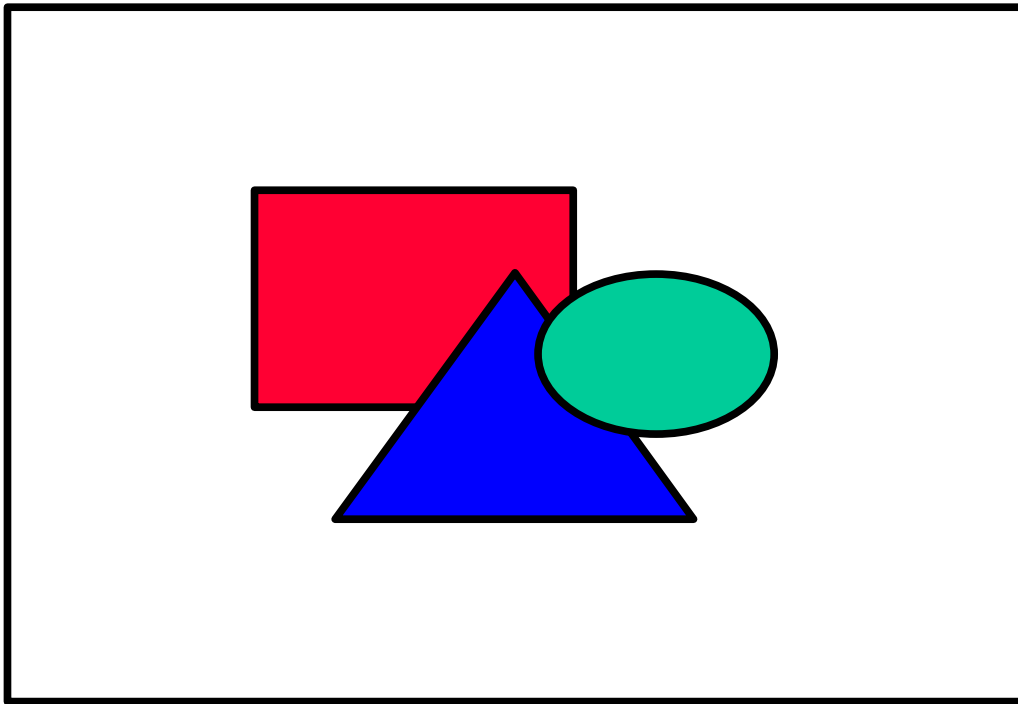
Example: Pat's Weight

To evaluate the correlation of process measurables to result measurables, let's compare the process measurable, **number of minutes exercised**, to the result measurable, **Pat's weight**, at the end of February. First, let's look at the process measurable trend:



As the chart shows, the process measurable trend for **number of minutes exercised** reflects an improvement beyond the goal of exercising an **average of 30 minutes per day** after the corrective action was implemented on February 5th.

Now, let's look at the result measurable trend:



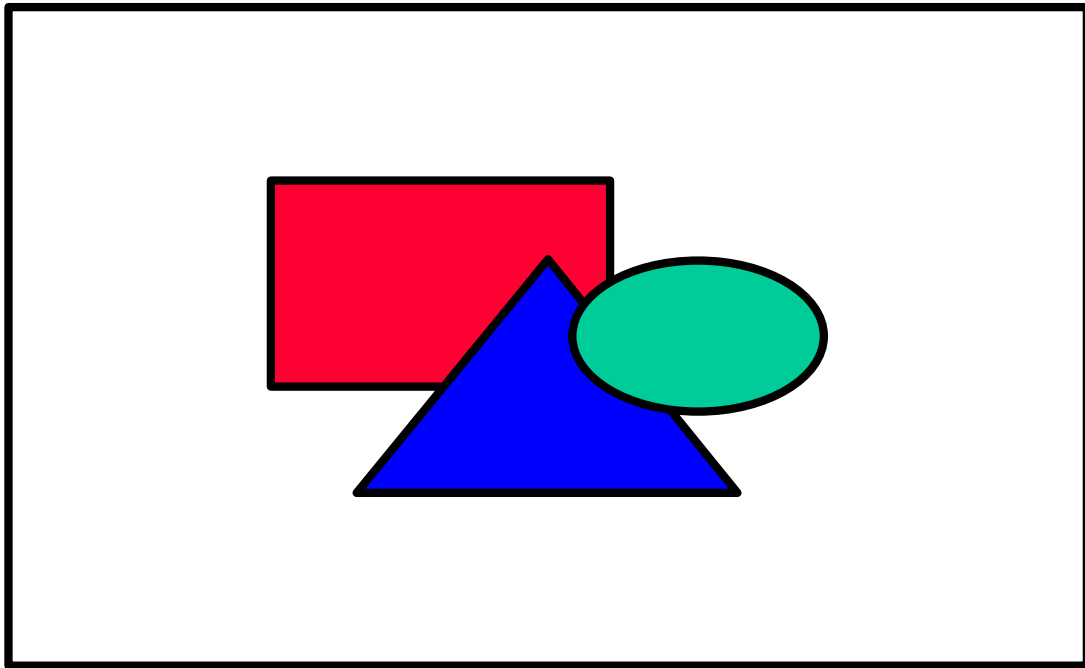
As the chart shows, the result measurable trend for ***Pat's Weight*** reflects improvement toward the goal of ***175 lbs.*** after the corrective action was implemented on February 5th.

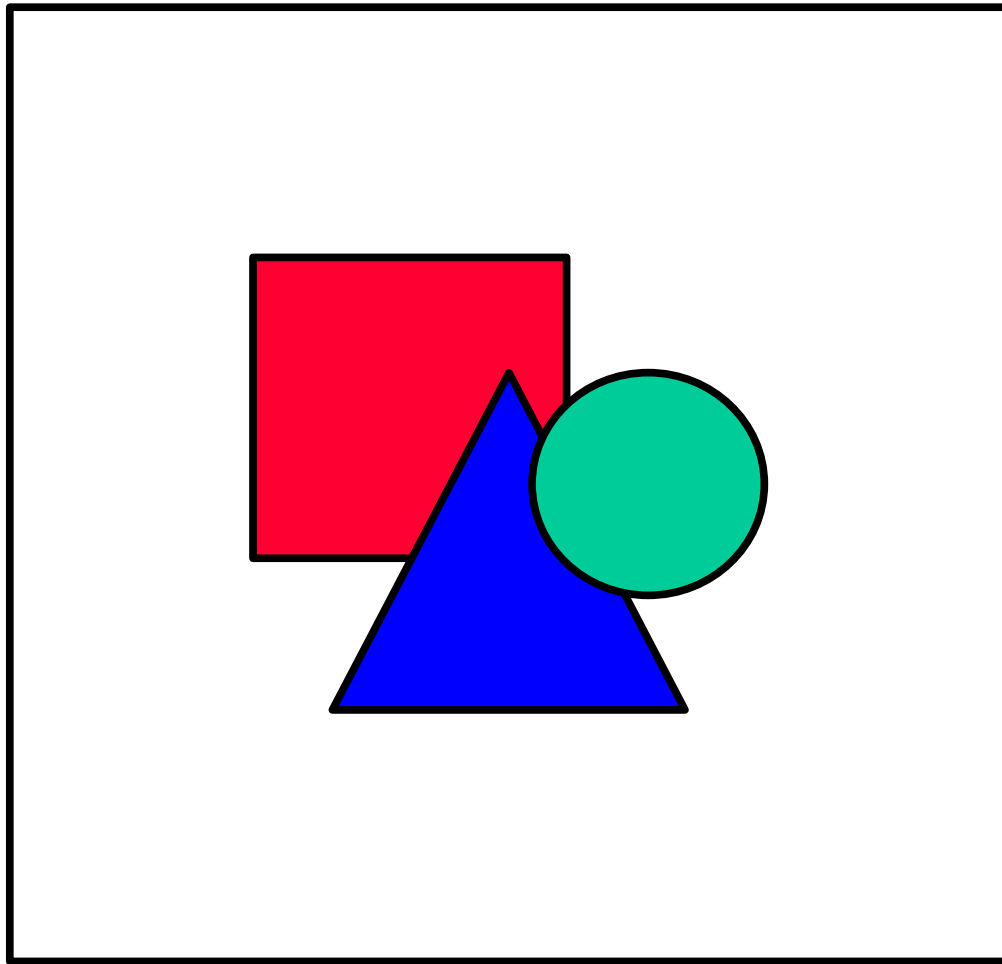
Improvement in the trend for the ***number of minutes exercised*** coincided with improvement in the trend for ***Pat's weight***. It can be concluded that the measurables are highly correlated; therefore, improvement in the ***number of minutes exercised*** allows you to predict that ***Pat's weight*** will also improve.

Now, let's move to the center of the QOS wheel, ***constant employee awareness***.

CONSTANT EMPLOYEE AWARENESS

At the center of the QOS wheel is constant employee awareness. Involvement of all employees ensures their commitment to meeting customer expectations.





How Can Employees Become Involved?

QOS is a team effort. Participation of employees at all levels will ensure the success of your QOS. All employees should be aware of the QOS measurables that impact your company's performance. In addition, management's role is to empower the problem solving teams by providing resources (people, time, and money) and removing the roadblocks to continual improvement.

To support the QOS development process, employees may:

- identify and monitor customer expectations.
- identify key processes and develop measurables.

To support the QOS implementation process, employees may:

- gather data for the measurables and supporting tools.
- become a measurable champion.
- participate on problem solving teams.
- attend the QOS review meetings.

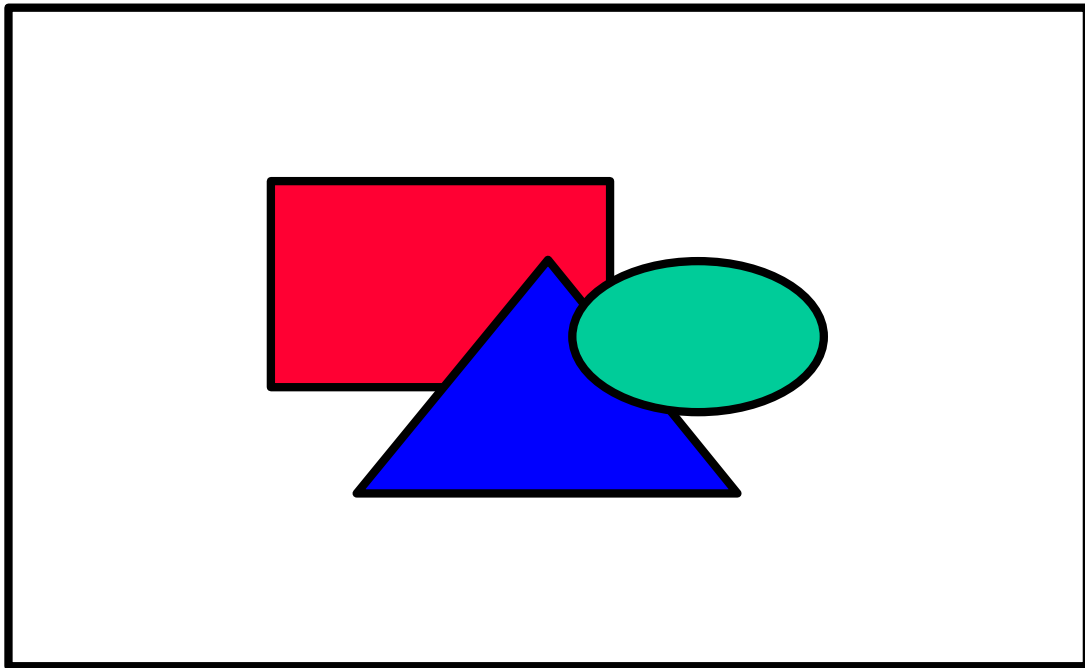
Constant employee awareness and participation in the QOS process will ensure employees

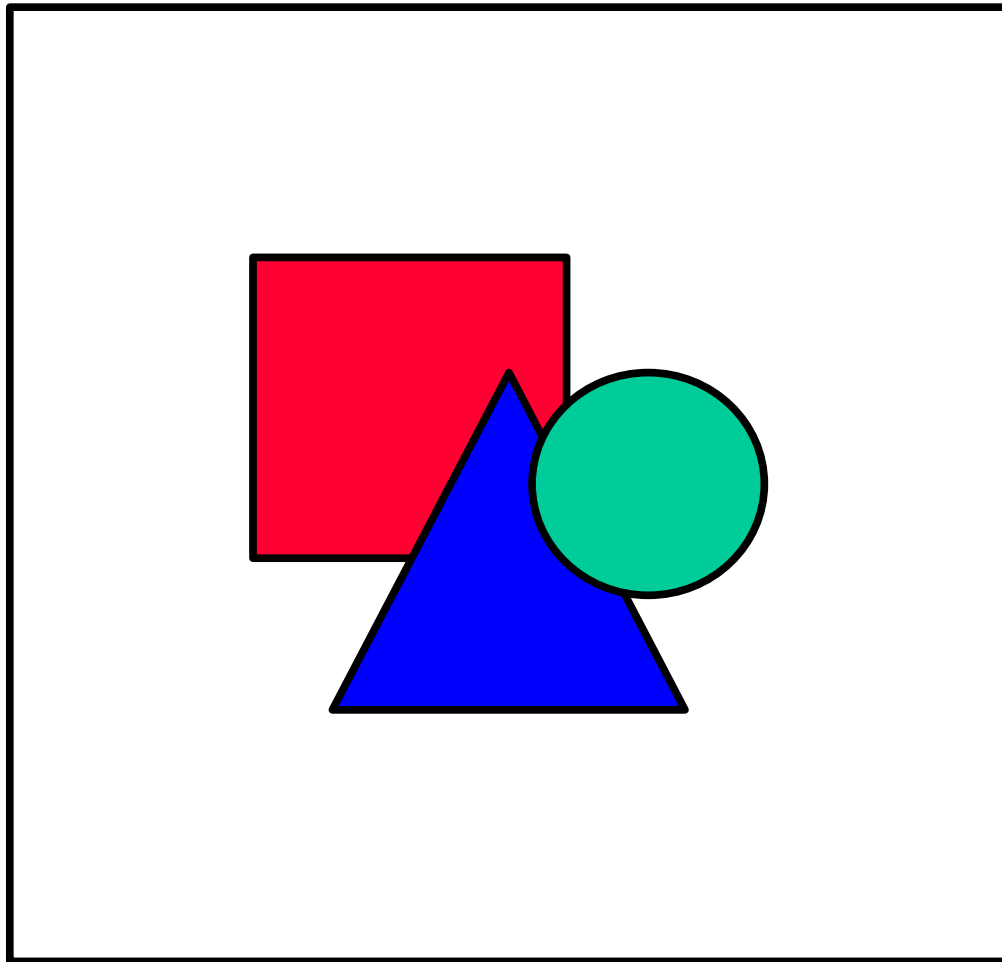
are aligned and focused on meeting your customer expectations.

Lastly, let's move to the concept surrounding the QOS wheel, *continual process improvement*.

CONTINUAL PROCESS IMPROVEMENT

Surrounding the QOS wheel is the concept of continual process improvement. By developing and implementing a QOS, you will enact a powerful tool to improve your processes and business, and increase your customers' satisfaction.





How Are Processes Improved?

QOS review meetings force you to look at and understand the ability of your key processes to deliver your customer expectations. If your key processes are not delivering your customer expectations, the QOS methodology initiates a structured problem solving process to enable you to identify and eliminate the root causes of your process inefficiencies. The corrective actions taken, and subsequently verified, lead to improved:

- processes.
- customer satisfaction.
- business results.

Conclusion

Now that you have finished the QOS Primer, you should:

- understand the QOS wheel.
- understand QOS terms.
- understand the benefits of a QOS.

Remember, the objective of this primer was to tell you ***what a QOS is, not*** to tell you ***how to implement*** a QOS. For additional information on the QOS methodology or how to implement a QOS, please refer to the [appendix](#).

GLOSSARY OF TERMS

8-D Summary Report (8-Discipline Summary Report):

A tool to document the Ford recommended eight steps of a team based problem solving process. See Team Oriented Problem Solving (TOPS).

Benchmarking:

A process to define what is required for success through comparison with competition or a best-in-class performer. The comparison results are used to develop strategies and plans for improvement.

Continual Process Improvement:

The result of incremental improvements made to a process by corrective actions identified by problem solving teams.

Correlation:

A measure of how closely two sets of data move with respect to one another. Two sets of data are considered to be highly correlated when they tend to move in the same direction (positive correlation) or opposite directions (negative correlation) over time.

Cross-Functional Team:

A team consisting of members from various functional areas, usually selected by the measurable champion.

Customer Expectations:

A customer's wants or needs. Expectations are typically related to quality, cost, and delivery of a product or service.

Data Over Time Tool:

A tool used to log instances or occurrences of events over time. The occurrences are identified by symptom or cause. Example: Paynter chart.

Expressed Customer Expectations:

Customer expectations that are either written, e.g., terms of a contract, or spoken, e.g., voice of the customer.

External Customer:

Consumers of your information, products, or services. May also include outside agencies, e.g., government or dealers.

Goals (Performance Targets, Objectives):

The level of performance you would like to achieve. Typically set by a customer expectation, benchmarking study, or best-in-class data.

Implied Customer Expectations:

Customer expectations that are neither written or spoken by the customer. They are so basic to the product they need not be mentioned, or they are too difficult for the customer to effectively communicate.

Internal Customer:

Employees downstream in your process who are impacted by your contribution to the product or service. Also includes management, board of directors and stockholders.

Key Processes:

Processes having the greatest impact on meeting one or more customer expectation.

Measurables:

See process measurables and result measurables.

Measurable Champion:

The measurable champion is responsible for tracking all indicators associated with the measurables he/she "owns," and for leading the corrective actions required to ensure progress is being made toward the measurable goal.

Pareto Chart:

A tool used to display data in bar chart form grouped by symptom or cause allowing for the identification and prioritization of problems.

Paynter Chart:

A tool used to log instances or occurrences of events over time by symptom or cause.

Prioritization Tool:

A tool used to display data grouped by symptom or cause allowing for the identification and prioritization of problems. Examples: pareto chart, pie chart, histogram.

Problem Solving Team:

A team comprised of cross-functional members who are tasked with identifying a solution to a known problem.

Problem Solving Tool:

A tool used to eliminate or alleviate problems. The tool supports the identification of root causes and preventive and corrective actions. Examples: TOPS, 8-D, 5-D.

Process Measurables:

Indicators gaging the degree to which a key process is performing. Process measurables predict result measurables. Tracking process measurables allows you to be proactive and take specific improvement actions to improve your process and, therefore, improve your result measurables.

QOS Meeting Chairperson:

The individual responsible for leading the QOS review meetings and ensuring participation of the measurable champions and the problem solving teams.

Result Measurables:

Indicators gaging how well you are achieving your customer expectations. There is usually little direct control over result measurables.

Root Cause:

The origin or source of a problem.

Statistical Process Control:

A method using statistical techniques to monitor the performance of a process over time.

Stretch Objective:

An objective set at an appropriate level to maximize employee effort to obtain the objective.

Trend Chart:

A tool displaying the performance of a measurable over time in comparison to a goal line. Through use of a trend chart to track data over time, adverse trends will alert you to problems.

Team Oriented Problem Solving (TOPS):

TOPS is a problem solving process that uses the 8-Discipline summary report to document the Ford recommended eight steps of a team based problem solving process.