Management Tools For Quality Control

**1. Flowchart**

Most of us are familiar with flowcharts. You have seen flowcharts of reporting relationships in **organizational structures**.

Flowcharts are also used to document work process flows.This tool is used when trying to determine where the bottlenecks or breakdowns are in work processes.Flow-charting the steps of a process provides a picture of what the process looks like and can shed light on issues within the process.

Flowcharts are also used to show changes in a process when improvements are made or to show a new workflow process.This example provides a picture so those checking children in will know the steps each takes depending on whether it is their first time or a child who has been there before.

Example Flowchart
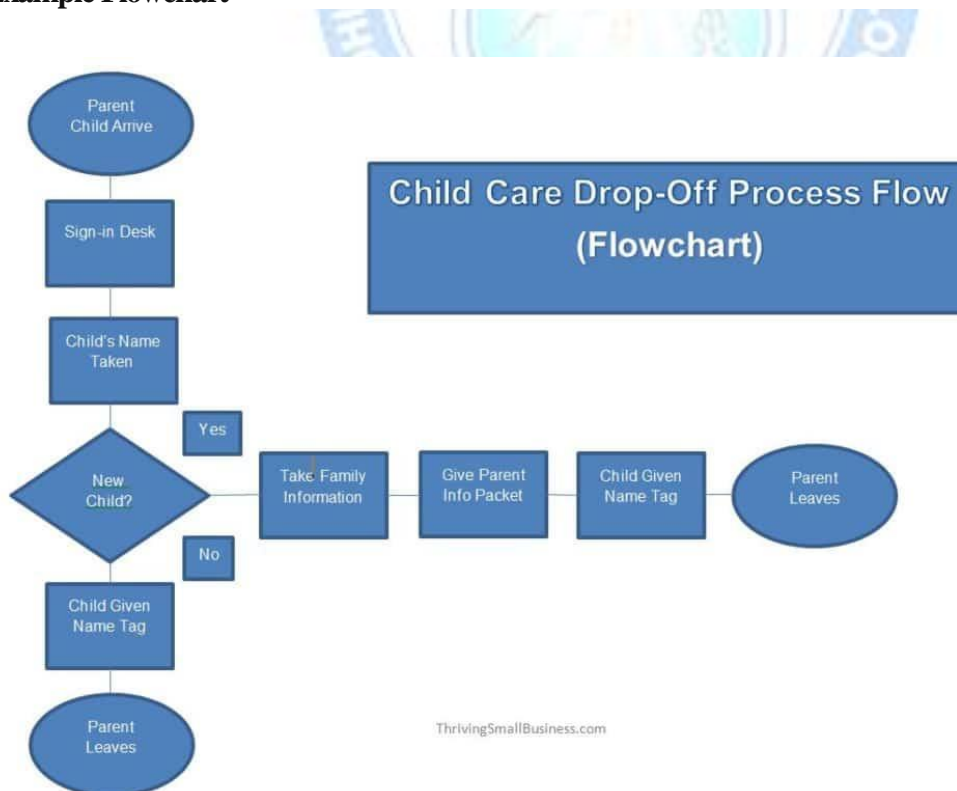
2. Check Sheet

BA4204- OPERATIONS MANAGEMENT

A check sheet is a basic quality tool that is used to collect data. A check sheet might be used to track the number of times a certain incident happens.

As an example, a **human resource department** may track the number of questions by employees, per category, per day.In this particular check sheet the tool shows the total number of questions received by the human resources department.

This information helps that department identify opportunities to proactively share information with employees in an effort to reduce the numbers of questions asked.

Example Check Sheet

Human Resource Questions						
	Monday	Tuesday	Wednesday	Thursday	Friday	Total
Health Insurance	///// //	///// /////	////	///// /	///// ///	35
Disability Insurance	///	////	/	///// /	//	16
Sick Time	/////	///// ///	///	////	/////	25
Paid Time Off	///// /////	///// /////	///// ////	///// ////	///// ///	47
Tuition Reimbursement	///	//	////	///	////	16
Payroll Error	//	/	///	/	//	9
Total	30	35	25	29	29	148

3. Cause and Effect (fish bone) Diagram

A cause and effect diagram, also known as a fish-bone diagram shows the many possible causes of a problem.

To use this tool, you need to first identify the problem you are trying to solve and simply write it in the box (head of the fish) to the right.

Next, you will list the major causes of the problem on the spine of the fish.

Causes are typically separated into categories of people, process, materials and equipment.

Causes are then identified through brainstorming with a group familiar with the problem.

Once all of the possible causes are identified, they can be used to develop an improvement plan to help resolve the identified problem.

Example Cause and Effect (Fish Bone) Diagram

WHY VOLUNTEERS DON'T SHOW UP
For Scheduled Shift

CAUSE 1:
Forgot
- Confused Weeks
- Did Not Put On Calendar
- Busy At Work

CAUSE 2
Did Not Receive Schedule
- Address Change
- Not Mailed In Time
- Can't Get Mail

- Sick Child
- Sick Volunteer
- Car Won't Start

- Rude Employee
- Conflict
- Don't Understand Role

CAUSE 3:
Sick/Family Emergency

CAUSE 4:
Issue With Volunteer Role

EFFECT:
Volunteer Doesn't Show Up For Scheduled Shift

4. Pareto Chart

A Pareto chart is a bar graph of data showing the largest number of frequencies to the smallest.
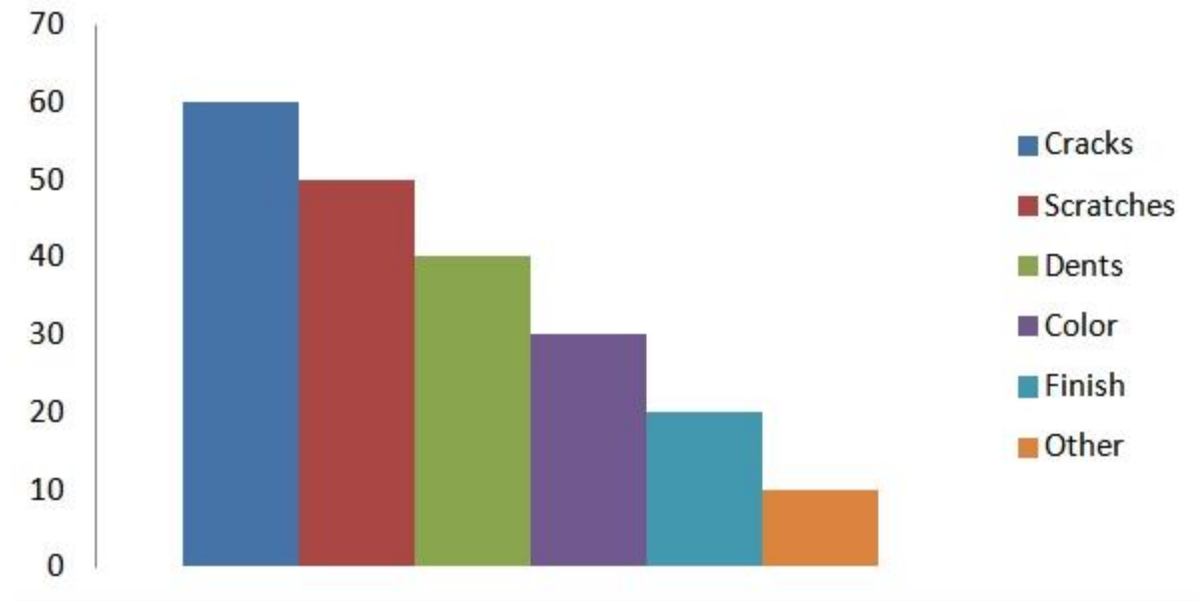
In this example, we are looking at the number of product defects in each of the listed categories.

When you look at the number of defects from the largest to the smallest occurrences, it is easy to see how to prioritize improvements efforts.

The most significant problems stand out and can be targeted first.

Example Pareto Chart

Number of Product Defects

5. Control Charts

Control charts or run charts are used to plot data points over time and give a picture of the movement of that data.

These charts demonstrate when data is consistent or when there are high or low outliers in the occurrences of data.

It focuses on monitoring performance over time by looking at the variation in data points.

And it distinguishes between **common cause and special cause variations**. The Dow Jones Industrial Average is a good example of a control chart.

Example Control (Run) Charts

Weekly Attendance
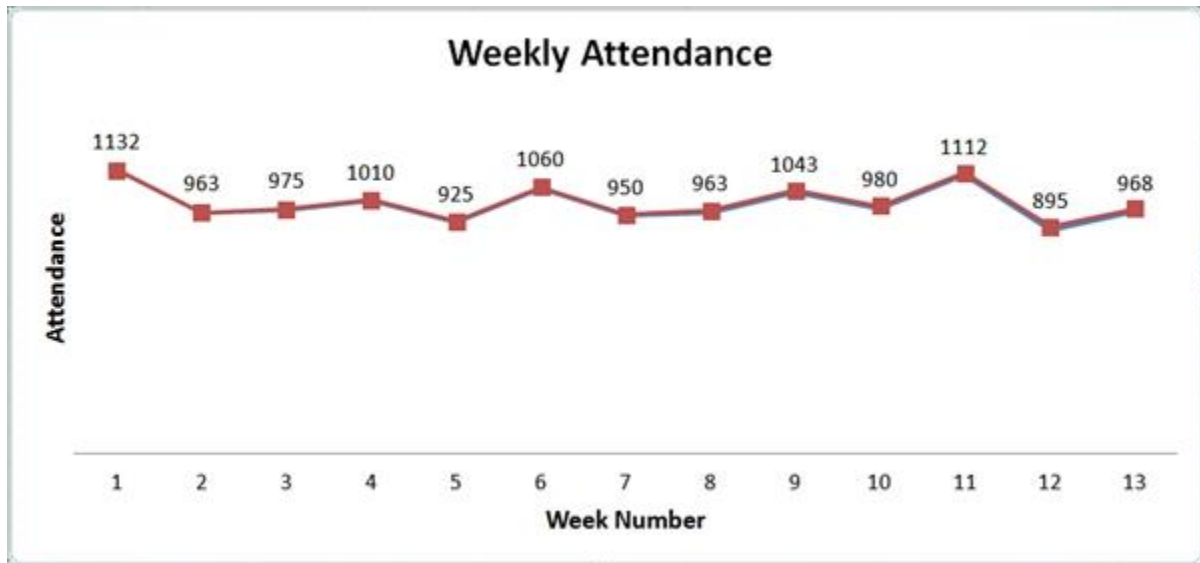
6. Histograms

Histograms are bar chart pictures of data that shows patterns that fall within typical process conditions.

Changes in a process should trigger new collection of data.

A minimum of 50-75 data points should be gathered to ensure an adequate number of data points have been collected.

The patterns that are detected demonstrate an analysis that helps understand variation.

In this example, it shows that the receptionist received the most phone calls about contribution statements for that period.

Example Histogram

Receptionist Phone Calls

Legend:
- Service Times
- Website Address
- Office Hours
- Contribution Statements
- Counseling
- Benevolence
- Volunteering
- Job Applicants