Cumulative Cause Map™

Printer Failure Example

This page provides a basic and more detailed Cumulative Cause Map for common printer failures. It shows how information can be captured on recurring equipment failures. This approach applies the same way to safety incidents (hand injuries) and other operational issues.
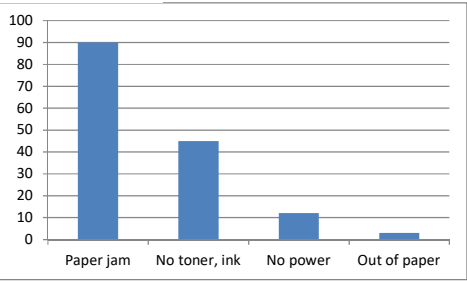
The bar chart (pareto chart), data table and Cumulative Cause Map are complementary tools. The cause-and-effect anlaysis provides an organized structure to thoroughly dig into an issue to provide a more complete explanation.

Data Table

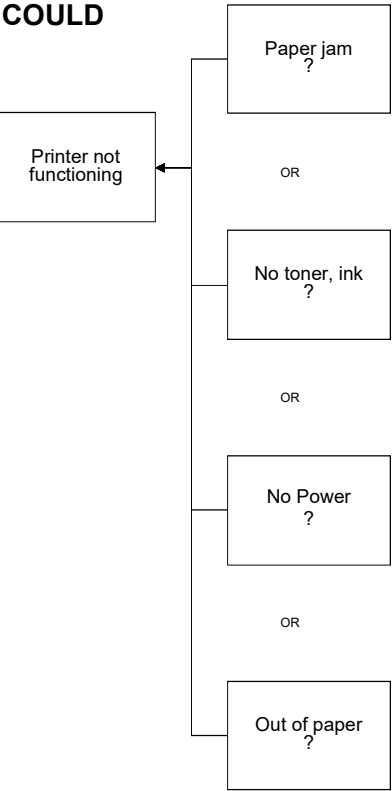| Paper jam	90	← Main Cause
No toner, ink	45	
No power	12	
Out of paper	3	
	150	

The term "Main Cause" only applies to a population of incidents. There is no main cause or root cause to a single incident, because all of the causes are requried. In a population of incidents the main cause is the "failure mode' that occurs most frequently or results in the biggest impact (see chart).
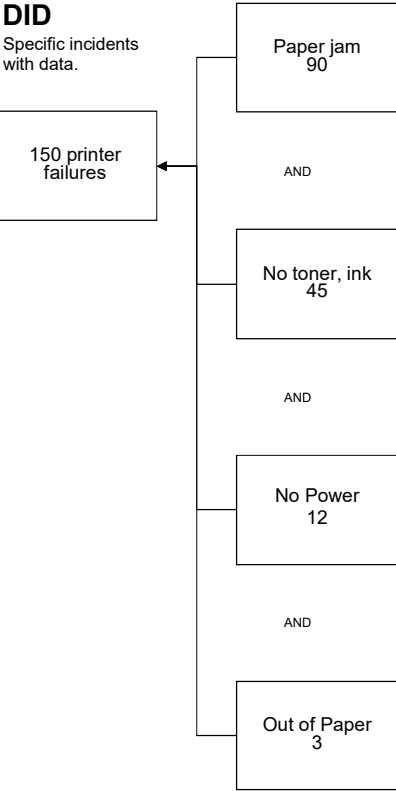
Bar Chart

Cumulative Cause Maps - Basic
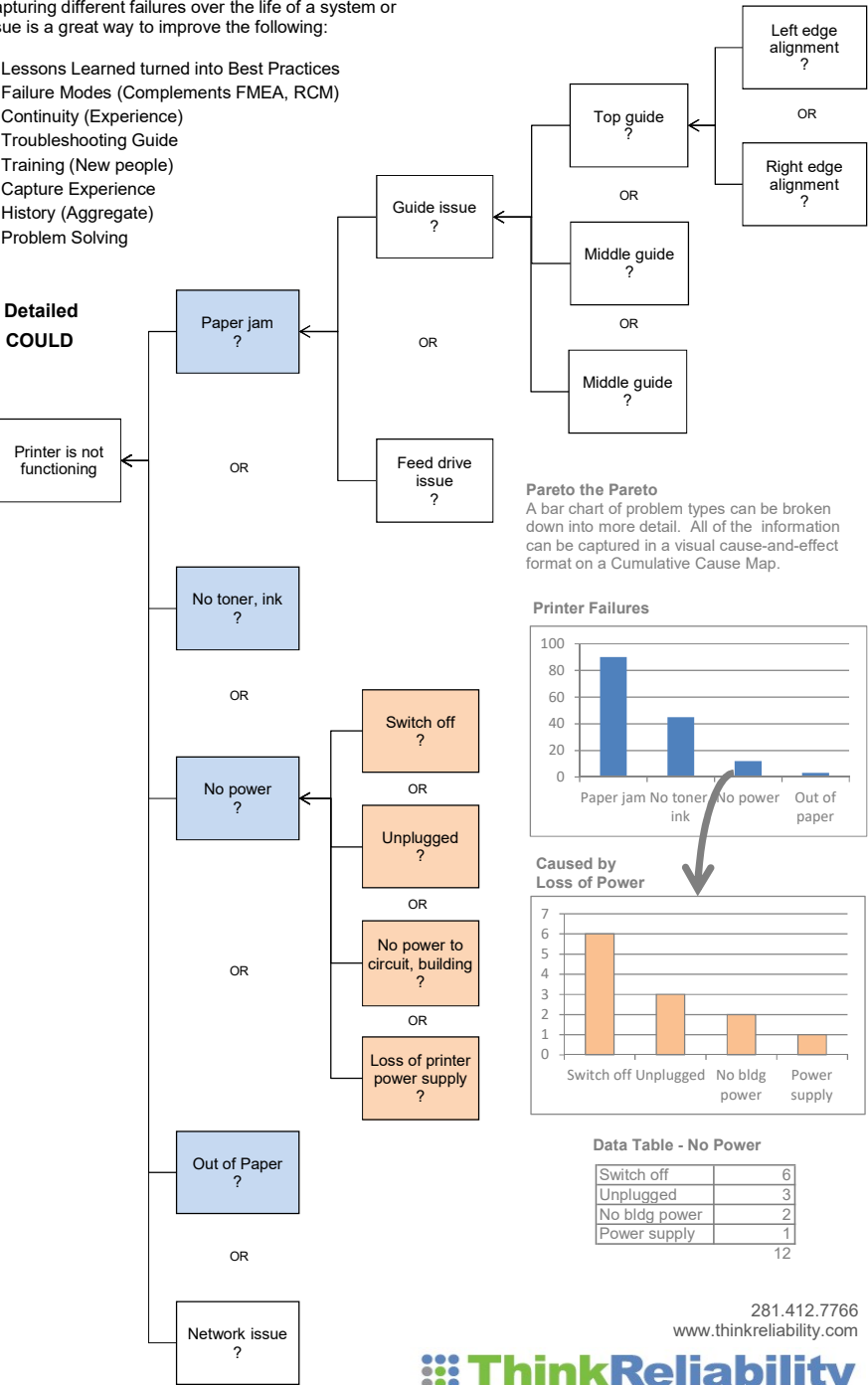
COULD

DID

Specific incidents with data.

∑ Cumulative Cause Map Benefits & Use

Capturing different failures over the life of a system or issue is a great way to improve the following:
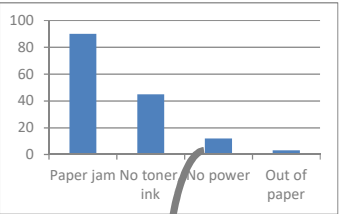
- Lessons Learned turned into Best Practices
- Failure Modes (Complements FMEA, RCM)
- Continuity (Experience)
- Troubleshooting Guide
- Training (New people)
- Capture Experience
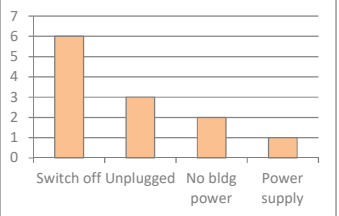- History (Aggregate)
- Problem Solving

Detailed COULD

Pareto the Pareto
A bar chart of problem types can be broken down into more detail. All of the information can be captured in a visual cause-and-effect format on a Cumulative Cause Map.

Printer Failures

Caused by Loss of Power

Data Table - No Power

Switch off	6
Unplugged	3
No bldg power	2
Power supply	1
	12

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