Production Flow Metrics

What is It

Distinctive production operational metrics to test, describe, and measure processes flows.

When

- To perform a **production test.**
- To **understand the true yield** (defect rate impact) in a process study.

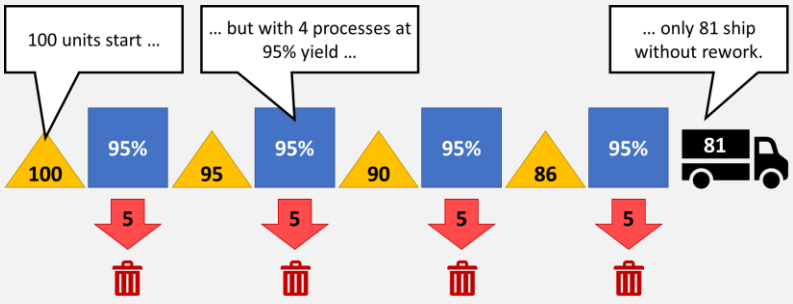
Goals

- Enhance operational effectiveness.
- Capture the rework effect on the process. The effect of poor quality.
- Provide valuable improvement insights.

How

$$FTY = \frac{\text{Number of Parts that passed with no failures}}{\text{Total Number of Parts processed}}$$

$$RTY = FTY_{\text{Station 1}} \times FTY_{\text{Station 2}} \times FTY_{\text{Station 3}}$$



Hints

- RTY can help give a more complete picture of **how poor quality affects the day-to-day operation.**
- An average RTY also is helpful but **may be misleading**. Adding or removing steps to the flow could have a significant impact, either positively or negatively, on the overall average.

Example

PathStone Group — Rolled Throughput Yield - DPMO

Opportunities	2
Defects	237
Units	1,225

DPMO	Sigma
697,000	0.98
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308,733	2.00
66,803	3.00
6,210	4.00
233	5.00
3	6.00

DPMO	96,735
% Defects	10
% Yield	90
Sigma	3
Zst	1
DPMU	193,469
Cp	0.93

Process Step	Defects	Units	Opportunities per Unit	Total Opportunities	Defects Per Unit	First Pass Yield	Defects Per Opportunity	Defects Per Million Opportunities (DPMO)	Throughput Yield	Rolled Throughput Yield
1	32	3,434	1	3,434	0.009	**99.1%**	0.009	9,319	99.1%	**99.1%**
2	15	4,345	1	4,345	0.003	**99.7%**	0.003	3,452	99.7%	**98.7%**
3	23	3,322	1	3,322	0.007	**99.3%**	0.007	6,924	99.3%	**98.0%**