



Global Supplier Quality Performance Monitoring Scorecard



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1. Define

Problem:

- Supplier Monitoring is currently performed through the supplier audit program on a global scale, but supplier audit scores do not correlate to the supplier's quality.
- Because not all KPIs are monitored on a global level, the new Global Supplier Quality team cannot effectively monitor the performance of the suppliers on a global scale and determine which suppliers need increased monitoring and improvement projects.
- There is no way to assess the supplier improvement or decline in quality of the suppliers on a yearly basis on a global scale

Goal:

Create a new supplier quality performance Scorecard, which utilizes defined Quality KPI and weights, each one based on risk, in order to score and rank each supplier with the final goal of identifying which monitoring process (either improvement project, audit, or no actions) will be utilized to assess and improve the supplier quality and regulatory compliance expectations.

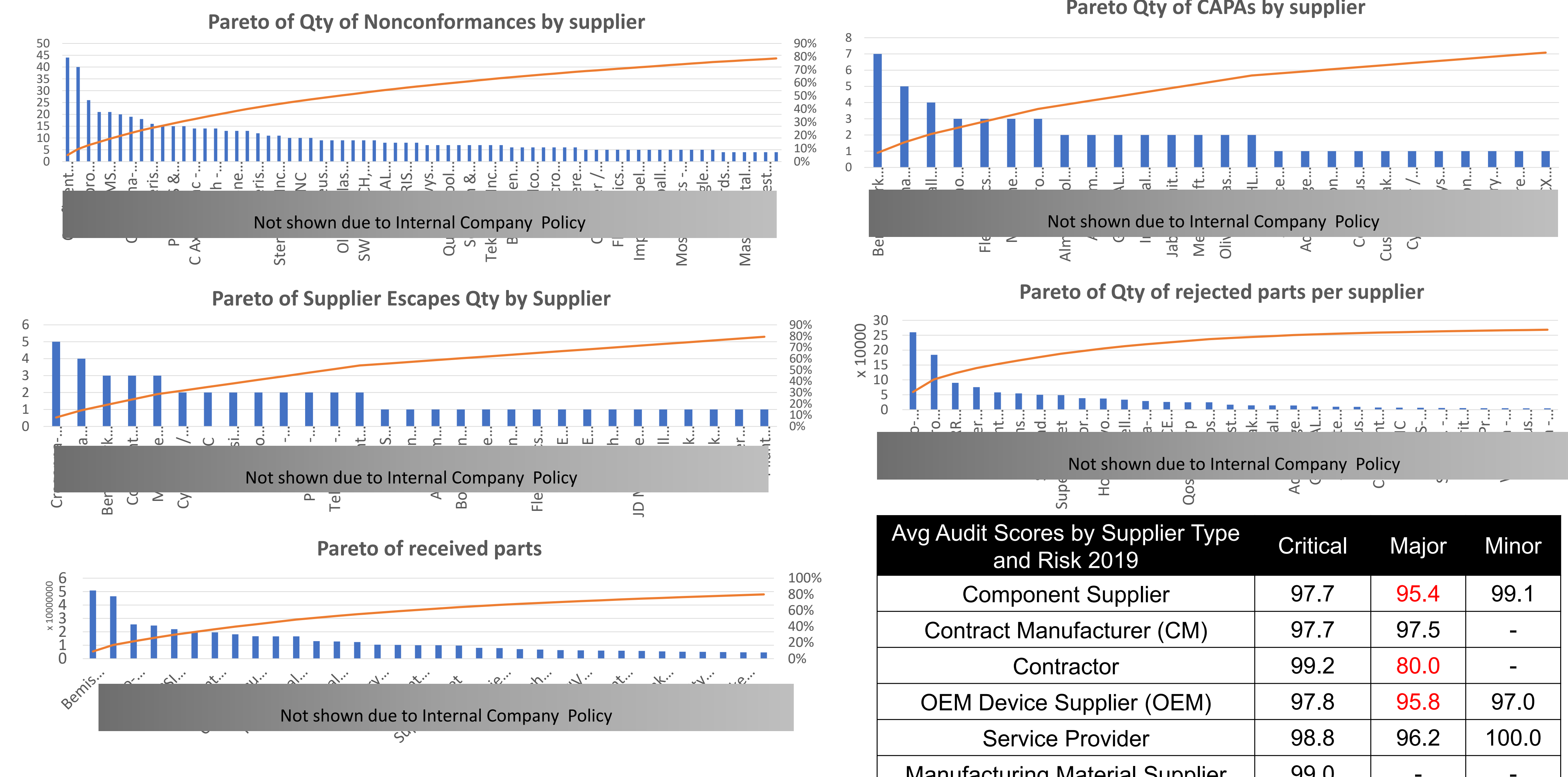
2. Measure

Current Process

- Global Supplier Monitoring is performed through Supplier Audit, for which the frequency is a function of the Supplier Type and Risk.
- Quality metrics are recorded and maintained for individual site purposes, to identify trends potential CAPA escalations.
- There is no tool to score supplier quality performance on a global scale

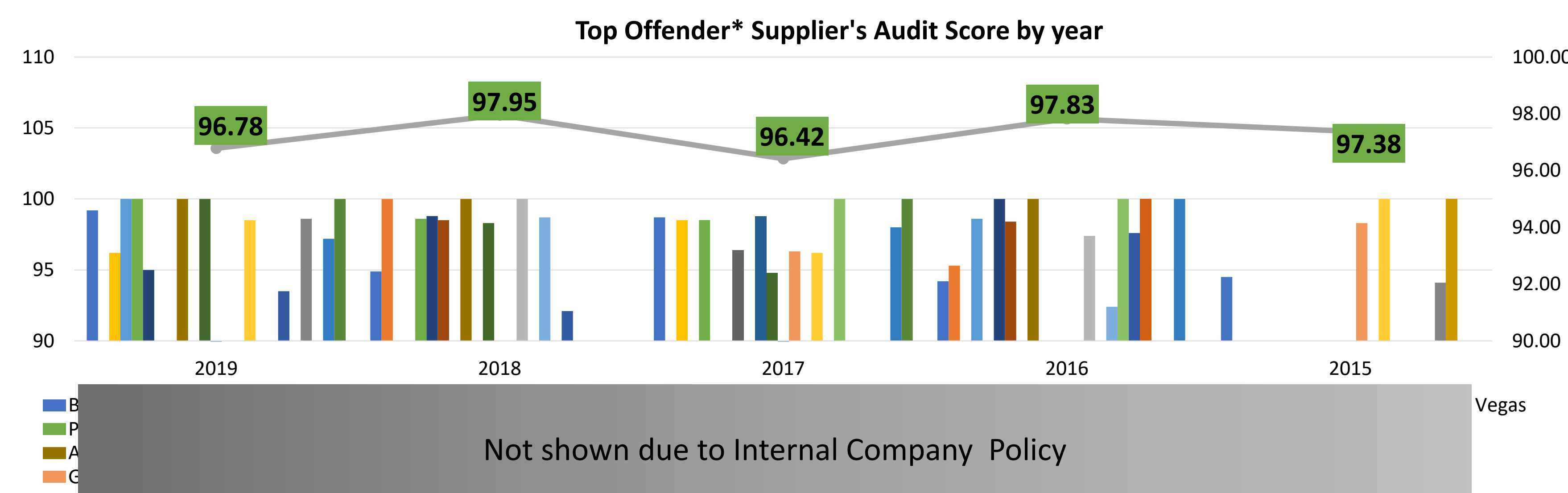
KPI	Current Monitoring level	Future
Nonconformance investigations	Site level	Global level
CAPA investigations (Corrective Action/Preventive Action)	Site level	Global level
Escapes (Complaints or confirmed escapes)	Site level	Global level
Defects per million (DPM=parts rejected/parts received *1000000)	Site level/Global level	Global level
Supplier Audit Score	Global level	Global level

KPIs 2019



Avg Audit Scores by Supplier Type and Risk 2019	Critical	Major	Minor
Component Supplier	97.7	95.4	99.1
Contract Manufacturer (CM)	97.7	97.5	-
Contractor	99.2	80.0	-
OEM Device Supplier (OEM)	97.8	95.8	97.0
Service Provider	98.8	96.2	100.0
Manufacturing Material Supplier	99.0	-	-

3. Analyze



*Note: Each supplier in the Top 10 offenders for each KPI was pooled together and their audit scores were averaged each year since 2015. As per current company standard, audit scores ≥ 96 are considered "good standing"

Top 10 Supplier Offenders for each KPI- 2019						
Rank	Top Supplier-Qty of Parts	Top Qty NCs	Top Qty of CAPAs	Top Qty of Product Escapes	Top Qty Part Rejections	Worst Audit Scores
1	Supplier #1	Supplier #11	Supplier #20	Supplier #16	Supplier #3	Supplier #39
2	Supplier #2	Supplier #12	Supplier #21	Supplier #21	Supplier #4	Supplier #40
3	Supplier #3	Supplier #4	Supplier #22	Supplier #20	Supplier #31	Supplier #41
4	Supplier #4	Supplier #13	Supplier #19	Supplier #11	Supplier #32	Supplier #42
5	Supplier #5	Supplier #14	Supplier #23	Supplier #23	Supplier #33	Supplier #43
6	Supplier #6	Supplier #15	Supplier #24	Supplier #27	Supplier #34	Supplier #44
7	Supplier #7	Supplier #16	Supplier #4	Supplier #28	Supplier #35	Supplier #45
8	Supplier #8	Supplier #17	Supplier #25	Supplier #29	Supplier #36	Supplier #46
9	Supplier #9	Supplier #18	Supplier #26	Supplier #49	Supplier #37	Supplier #47
10	Supplier #10	Supplier #19	Supplier #2	Supplier #30	Supplier #38	Supplier #48

Observations:

- A total of 31 suppliers compose the top 10 offenders for all Quality KPIs.
- None of the 31 suppliers correlate to the top 10 worst audit scores.
- The supplier that is repeated the most (Supplier #4, has an audit score of 100%).
- Only 6/31 suppliers have less than 96% (minimum acceptable) in their audit scores.
- The average audit score for all top offender suppliers is 97.6%.
- The average audit score for the top offender suppliers for Audit Scores (worst audit scores) is 70.5%.

4. Improve

Factor Weights

Supplier Type and Risk	Score
CM Critical	10
CM Major	8
CM Minor	6
Component Sup Critical	6
Component Sup Major	5
Component Supp Minor	4
Consultant Critical	7
Consultant Major	5
Consultant Minor	1
Contractor Critical	8
Contractor Major	6
Contractor Minor	4
Man. Material Critical	6
Man. Material Major	4
Man. Material Minor	3
OEM Critical	10
OEM Major	8
OEM Minor	7
Service Provider Critical	9
Service Provider Major	7
Service Provider Minor	4

Category	Weight
Supplier Type and Risk	20%
Supplier Audit Score	13%
NCs	13%
CAPA	13%
Escapes	15%
Qty parts Rejected	10%
Qty Parts Received	16%

*Note: Prioritization Matrices were utilized with a team of Supplier Quality Engineers and Supplier Controls to decide upon the weights

2019 Supplier Performance Monitoring Scorecard																						
Name of Supplier	Supplier Type (g)	Risk Class	Score	Supplier Type & Risk Score (20%)	Supplier Audit Score	Adj. Rating	Supplier Audit Score (13%)	NCs	Adj. Rating	NCs Score	CAPA	Adj. Rating	Escapes	Adj. Rating	Qty parts	Rejected	Qty Parts	Received	Total Index Score			
Contract Manufacturer (CM)	Critical	10	98.4	9.84	0.02	5	1.1	0.15	4	5.7	0.74	1	10	1.50	184410	2.1	0.21	24052035	4.9	0.78	4.81	
Contract Manufacturer (CM)	Critical	10	2.00	100	10	0.00	13	3.0	0.38	3	4.3	0.56	2	10	1.50	0	0.00	70997	0.0	0.00	5.18	
Contract Manufacturer (CM)	Critical	10	2.00	99.1	9.91	0.01	13	3.0	0.38	3	4.3	0.56	3	10	1.50	0	0.00	63817	0.0	0.00	4.45	
Contract Manufacturer (CM)	Critical	10	2.00	100	10	0.00	5	1.1	0.15	4	5.7	0.74	1	10	1.50	303	0.0	0.00	39465	0.0	0.00	4.39
Contract Manufacturer (CM)	Critical	10	2.00	98.4	9.84	0.02	5	1.1	0.15	4	5.7	0.74	1	10	1.50	0	0.00	343781	0.1	0.01	4.54	
OEM Device Supplier (OEM)	Minor	7	1.40	94.1	9.41	0.08	10	2.3	0.30	5	7.1	0.93	4	10	1.50	125	0.0	0.00	72720	0.0	0.00	4.20
Contract Manufacturer (CM)	Critical	10	2.00	97.5	9.75	0.03	21	4.8	0.62	0	0.00	0.00	1	10	1.50	0	0.00	23211	0.0	0.00	4.15	
Contract Manufacturer (CM)	Critical	10	2.00	100	10	0.00	14	3.2	0.41	1	1.4	0.19	1	10	1.50	1353	0.1	0.01	1001499	0.2	0.03	4.14
Contract Manufacturer (CM)	Critical	10	2.00	94.9	9.49	0.07	2	0.5	0.06	0	0.00	0.00	0	0	0.00	260010	10.0	1.00	2542663	5.0	0.80	3.90
Contract Manufacturer (CM)	Critical	10	2.00	100	10	0.00	13	3.0	0.38	0	0.00	0.00	2	10	1.50	3769	0.1	0.01	323684	0.1	0.01	3.91
Component Supplier	Major	5	1.00	100	10	0.00	44	10.0	1.30	0	0.00	0.00	3	10	1.50	7045	0.3	0.03	199429	0.1	0.01	3.83
Component Supplier	Critical	7	1.40	100	10	0.00	9	2.0	0.27	2	2.9	0.37	1	10	1.50	0	0.00	8032315	1.6	0.25	3.79	
OEM Device Supplier (OEM)	Critical	10	2.00	100	10	0.00	2	0.5	0.06	0	0.00	0.00	1	10	1.50	0	0.00	58345	0.0	0.00	3.75	
Service Provider	Critical	9	1.80	93.7	9.37	0.08	11	2.5	0.33	0	0.00	0.00	1	10	1.50	0	0.00	0	0.0	0.00	3.70	
Service Provider	Critical	9	1.80	98.9	9.89	0.01	12	2.7	0.35	0	0.00	0.00	1	10	1.50	0	0.00	18313	0.0	0.00	3.67	
Contract Manufacturer (CM)	Major	8	1.60	97.2	9.72	0.04	5	1.1	0.15	2	2.9	0.37	1	10	1.50	0	0.00	215	0.0	0.00	3.66	
Contract Manufacturer (CM)	Critical	10	2.00	98.5	9.85	0.02	4	0.9	0.12	0	0.00	0.00	2	10	1.50	331	0.0	0.00	3325	0.0	0.00	3.64
Contract Manufacturer (CM)	Critical	10	2.00	94.4	9.44	0.07	2	0.5	0.06	0	0.00	0.00	1	10	1.50	2	0.0	0.00	29400	0.0	0.00	3.63
Contract Manufacturer (CM)	Major	8	1.60	86.4	8.64	0.18	5	1.1	0.15	0	0.00	0.00	1	10	1.50	827	0.0	0.00	50045	0.0	0.00	3.43
Contract Manufacturer (CM)	Major	8	1.60	100	10	0.00	9	2.0	0.27	0	0.00	0.00	1	10	1.50	583	0.0	0.00	840608	0.2	0.03	3.39
Contractor	Critical	8	1.60	98.1	9.81	0.02	8	1.8	0.24	0	0.00	0.00	2	10	1.50	10	0.0	0.00	70939	0.0	0.00	3.36
Service Provider	Critical	9	1.80	100	10	0.00	2	0.5	0.06	0	0.00	0.00	1	10	1.50	0	0.00	27495	0.0	0.00	3.36	
Service Provider	Critical	9	1.80	100	10	0.00	2	0.5	0.06	0	0.00	0.00	1	10	1.50	0	0.00	0	0.0	0.00	3.36	
Contract Manufacturer (CM)	Major	8	1.60	97.6	9.76	0.03	5	1.1	0.15	0	0.00	0.00	2	10	1.50	1300	0.0	0.00	1743667	0.3	0.05	3.34
Contract Manufacturer (CM)	Major	8	1.60	98.2	9.82	0.02	7	1.6	0.21	0	0.00	0.00	2	10	1.50	0	0.00	0	0.0	0.00	3.33	
Contractor	Critical	8	1.60	100	10	0.00	7	1.6	0.21	0	0.00	0.00	1	10	1.50	0	0.00	8610049	0.0	0.00	3.31	
Component Supplier	Critical	7	1.40	93.5	9.35	0.08	3	0.7	0.09	0	0.00	0.00	1	10	1.50	14400	0.6	0.06	5412999	1.1	0.17	3.30
Contract Manufacturer (CM)	Major	8	1.60	91.8	9.18	0.11	1	0.2	0.03	0	0.00	0.00	1	10	1.50	175	0.0	0.00	9036	0.0	0.00	3.24
Component Supplier	Critical	7	1.40	96.2	9.62	0.05	2	0.5	0.06	1	1.4	0.19	1	10	1.50	260	0.0	0.00	32377	0.0	0.00	3.20
Contract Manufacturer (CM)	Critical	10	2.00	100	10	0.00	40	9.1	1.18	0	0.00	0.00	0	0	0.00	792	0.0	0.00	44412	0.0	0.00	3.19
Component Supplier	Major	5	1.00	100	10	0.00	8	1.8	0.24	2	2.9	0.37	0	0	0.00	10583	0.4	0.04	4648416	9.2	1.46	3.11
Component Supplier	Critical	7	1.40	97.6	9.76	0.03	0	0.0	0.00	0	0.00	0.00	0	0	0.00	4000	0.2	0.02	5080369	10.0	1.60	3.11
Component Supplier	Major	5	1.00	97.3	9.73	0.04	19	4.3	0.56	0	0.00	0.00	5	10	1.50	3310	0.1	0.01	423249	0.8	0.13	3.11
Component Supplier	Critical	7	1.40	98.8	9.88	0.02	3	0.7	0.09	0	0.00	0.00	1	10	1.50	144	0.0	0.00	3295224	0.6	0.10	3.11
Component Supplier	Major	5	1.00	90.9	9.09	0.12	5	1.1	0.15	1	1.4	0.19	2	10	1.50	98	0.0	0.00	710	0.0	0.00	2.95
Component Supplier	Major	5	1.00	100	10	0.00	14	3.2	0.41	0	0.00	0.00	1	10	1.50	4663	0.2	0.02	440938	0.1	0.01	2.95
Component Supplier	Major	5	1.00	96.3	9.63	0.05	6	1.4	0.18	0	0.00	0.00	1	10	1.50	2603	0.1	0.01	423249	0.8	0.13	2.88
Component Supplier	Major	5	1.00	90.4	9.04	0.12	6	1.4	0.18	0	0.00	0.00	1	10	1.50	0	0.00	2432388	0.5	0.08	2.88	
Component Supplier	Major	5	1.00	98.4	9.84	0.02	3	0.7	0.09	0	0.00	0.00	1	10	1.50	960	0.0	0.00	7865967	1.5	0.25	2.86
Component Supplier	Major	5	1.00	98.5	9.85	0.02	10	2.3	0.30	0	0.00	0.00	2	10	1.50	1616	0.3	0.03	95234	0.0	0.00	2.84
Component Supplier	Major	5	1.00	96.9	9.69	0.05	6	1.4	0.18	0	0.00	0.00	1	10	1.50	2607	1.0	0.10	213663	0.0	0.01	2.83
Component Supplier	Major	5	1.00	91.1	9.11	0.12	6	1.4	0.18	0	0.00	0.00	1	10	1.50	0	0.00	116852	0.0	0.00	2.80	
Component Supplier	Major	5	1.00	98	9.8	0.03	2	0.5	0.06	1	1.4	0.19	1	10	1.50	1132	0.0	0.00	70174	0.0	0.00	2.78
Component Supplier	Major	5	1.00	100	10	0.00	8	1.8	0.24	0	0.00	0.00	1	10	1.50	5769	0.2	0.02	395413	0.1	0.01	2.77
Component Supplier	Major	5	1.00	96.9	9.69	0.04	5	1.1	0.15	0	0.00	0.00	1	10	1.50	2194	0.1	0.01	2336630	0.5	0.07	2.77

*Note: Each of the KPIs analyzed determined the suppliers which conglomerate to make up 80% of the total amount of units in the KPI. These suppliers Qtyts are marked in Red for each KPI for