

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Aged Base Data 1 (AD1)"	"base contracts 1 (BC1)"	"Base Data 1 (BD1)"	"base data 1 decomposition rate a (BDR1a)"	"base data 1 decomposition rate b (BDR1b)"	"base data 1 decomposition rate c (BDR1c)"	"base data 1 production employees (BEP1)"	"base data 1 production rate (BDPR1)"	"base data 1 production workstations (BWP1)"	"base employees 1 (BE1)"	"base workstations 1 (BW1)"	"change in contracts 1(dC1)"
1	0	519	100.9869	0	0	0	778	99.98686	778	778	778	286.6268
2	0	519	200.9737	0	0	0	778	99.98686	778			207.9648
3	0	519	300.9606	0	0	0	778	99.98686	778			131.2806
4	0	519	400.9474	0	0	0	778	99.98686	778			78.67624
5	0	519	500.9343	0	0	0	778	99.98686	778			46.06702
6	0	519	600.9212	0	0	0	778	99.98686	778			26.66296
7	0	519	700.9081	0	0	0	778	99.98686	778			15.33801
8	0	519	800.895	0	0	0	778	99.98686	778			8.793762
9	0	519	900.8818	0	0	0	778	99.98686	778			5.03241
10	0	519	1000.869	0	0	0	778	99.98686	778			2.876831
11	0	519	1100.856	0	0	0	778	99.98686	778			1.643616
12	0	519	1200.842	24.01685	0	0	778	99.98686	778			0.93866
13	24.01685	519	1276.812	25.53625	0	0	778	99.98686	778			56.33026
14	49.55309	519	1351.263	27.02526	0	0	778	99.98686	778			35.30737
15	76.57835	519	1424.224	28.48449	0	0	778	99.98686	778			24.32391
16	105.0628	519	1495.727	29.91454	0	0	778	99.98686	778			18.60852
17	134.9774	519	1565.799	31.31598	0	0	778	99.98686	778			15.6662
18	166.2934	519	1634.47	32.6894	0	0	778	99.98686	778			14.16901
19	198.9828	519	1701.767	34.03535	0	0	778	99.98686	778			13.41754
20	233.0181	519	1767.719	35.35438	0	0	778	99.98686	778			13.04755
21	268.3725	519	1832.351	36.64703	0	0	778	99.98686	778			12.87073
22	305.0195	519	1895.691	37.91383	0	0	778	99.98686	778			12.79077
23	342.9333	519	1957.764	39.15528	0	0	778	99.98686	778			12.75861
24	382.0886	519	2018.596	40.37191	40.37191	0	778	99.98686	778			12.75
25	462.8324	519	2037.839	40.75677	40.75677	0	778	99.98686	778			25.78778
26	544.3459	519	2056.312	41.12624	41.12624	0	778	99.98686	778			12.89392
27	626.5984	519	2074.047	41.48093	41.48093	0	778	99.98686	778			6.44696
28	709.5603	519	2091.072	41.82143	41.82143	0	778	99.98686	778			3.223511
29	793.2032	519	2107.416	42.14831	42.14831	0	778	99.98686	778			1.611755
30	877.4998	519	2123.106	42.46211	42.46211	0	778	99.98686	778			0.805908

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31	962.4241	519	2138.168	42.76337	42.76337	0	778	99.98686	778			0.402954
32	1047.951	519	2152.629	43.05257	43.05257	0	778	99.98686	778			0.201477
33	1134.056	519	2166.51	43.3302	43.3302	0	778	99.98686	778			0.100708
34	1220.716	519	2179.837	43.59673	43.59673	0	778	99.98686	778			0.050293
35	1307.91	519	2192.63	43.8526	43.8526	0	778	99.98686	778			0.025269
36	1395.615	519	2204.912	44.09824	44.09824	0	778	99.98686	778			0.012634
37	1483.812	519	2216.702	44.33404	44.33404	0	778	99.98686	778			0.006226
38	1572.48	519	2228.021	44.56042	44.56042	0	778	99.98686	778			-77.5522
39	1661.6	519	2238.887	44.77774	44.77774	0	778	99.98686	778			-62.0244
40	1751.156	519	2249.318	44.98637	44.98637	0	778	99.98686	778			-18.2228
41	1841.129	519	2259.333	45.18665	45.18665	0	778	99.98686	778			3.507202
42	1931.502	519	2268.946	45.37892	45.37892	0	778	99.98686	778			14.12311
43	2022.26	519	2278.175	45.5635	45.5635	0	778	99.98686	778			19.20642
44	2113.387	519	2287.035	45.7407	45.7407	0	778	99.98686	778			21.60486
45	2204.868	519	2295.54	45.9108	45.9108	0	778	99.98686	778			22.73151
46	2296.69	519	2303.706	46.07411	46.07411	0	778	99.98686	778			23.26855
47	2388.838	519	2311.544	46.23088	46.23088	0	778	99.98686	778			23.5379
48	2481.3	519	2319.069	46.38139	46.38139	12.05916	778	99.98686	778			14.91302
49	2586.122	519	2314.234	46.28469	46.28469	12.03402	778	99.98686	778			7.456543
50	2690.725	519	2309.618	46.19236	46.19236	12.01001	778	99.98686	778			3.728271
51	2795.12	519	2305.21	46.1042	46.1042	11.98709	778	99.98686	778			1.864136
52	2899.315	519	2301.001	46.02002	46.02002	11.96521	778	99.98686	778			0.932129
53	3003.321	519	2296.983	45.93966	45.93966	11.94431	778	99.98686	778			0.466003
54	3107.145	519	2293.146	45.86292	45.86292	11.92436	778	99.98686	778			0.232971
55	3210.795	519	2289.483	45.78966	45.78966	11.90531	778	99.98686	778			0.116577
56	3314.279	519	2285.985	45.7197	45.7197	11.88712	778	99.98686	778			0.058289
57	3417.606	519	2282.646	45.65291	45.65291	11.86976	778	99.98686	778			0.029175
58	3520.781	519	2279.457	45.58913	45.58913	11.85318	778	99.98686	778			0.014587
59	3623.813	519	2276.412	45.52824	45.52824	11.83734	778	99.98686	778			0.007385
60	3726.707	519	2273.505	45.4701	45.4701	11.82223	778	99.98686	778			-4.63824

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61	3829.469	519	2270.729	45.41459	45.41459	11.80779	778	99.98686	778			-51.6248
62	3932.106	519	2268.079	45.36159	45.36159	11.79401	778	99.98686	778			-8.20496
63	4034.623	519	2265.549	45.31098	45.31098	11.78086	778	99.98686	778			11.60229
64	4137.026	519	2263.133	45.26266	45.26266	11.76829	778	99.98686	778			20.25
65	4239.319	519	2260.826	45.21653	45.21653	11.7563	778	99.98686	778			16.31146
66	4341.509	519	2258.624	45.17248	45.17248	11.74485	778	99.98686	778			8.155762
67	4443.599	519	2256.521	45.13042	45.13042	11.73391	778	99.98686	778			4.077942
68	4545.593	519	2254.513	45.09026	45.09026	11.72347	778	99.98686	778			2.03894
69	4647.497	519	2252.596	45.05192	45.05192	11.7135	778	99.98686	778			1.01947
70	4749.314	519	2250.765	45.01531	45.01531	11.70398	778	99.98686	778			0.509766
71	4851.049	519	2249.018	44.98035	44.98035	11.69489	778	99.98686	778			0.254944
72	4952.705	519	2247.349	44.94698	44.94698	11.68621	778	99.98686	778			0.127441
73	5054.285	519	2245.756	44.91511	44.91511	11.67793	778	99.98686	778			0.063782
74	5155.793	519	2244.234	44.88469	44.88469	11.67002	778	99.98686	778			0.031799
75	5257.232	519	2242.782	44.85563	44.85563	11.66247	778	99.98686	778			0.015991
76	5358.606	519	2241.395	44.8279	44.8279	11.65525	778	99.98686	778			0.007935
77	5459.917	519	2240.071	44.80141	44.80141	11.64837	778	99.98686	778			0.004028
78	5561.168	519	2238.806	44.77612	44.77612	11.64179	778	99.98686	778			0.001953
79	5662.362	519	2237.599	44.75198	44.75198	11.63551	778	99.98686	778			0.001038
80	5763.501	519	2236.446	44.72892	44.72892	11.62952	778	99.98686	778			0.000488
81	5864.589	519	2235.346	44.70691	44.70691	11.6238	778	99.98686	778			0.000244
82	5965.626	519	2234.295	44.6859	44.6859	11.61833	778	99.98686	778			6.1E-05
83	6066.617	519	2233.292	44.66583	44.66583	11.61312	778	99.98686	778			6.1E-05
84	6167.562	519	2232.334	44.64668	44.64668	11.60814	778	99.98686	778			6.1E-05
85	6268.463	519	2231.419	44.62838	44.62838	11.60338	778	99.98686	778			6.1E-05
86	6369.323	519	2230.546	44.61092	44.61092	11.59884	778	99.98686	778			6.1E-05
87	6470.144	519	2229.712	44.59424	44.59424	11.5945	778	99.98686	778			6.1E-05
88	6570.927	519	2228.916	44.57832	44.57832	11.59036	778	99.98686	778			6.1E-05
89	6671.674	519	2228.156	44.56311	44.56311	11.58641	778	99.98686	778			6.1E-05
90	6772.387	519	2227.43	44.5486	44.5486	11.58264	778	99.98686	778			6.1E-05

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91	6873.066	519	2226.737	44.53474	44.53474	11.57903	778	99.98686	778			6.1E-05
92	6973.715	519	2226.075	44.52151	44.52151	11.57559	778	99.98686	778			6.1E-05
93	7074.333	519	2225.444	44.50887	44.50887	11.57231	778	99.98686	778			6.1E-05
94	7174.923	519	2224.84	44.49681	44.49681	11.56917	778	99.98686	778			6.1E-05
95	7275.486	519	2224.264	44.48529	44.48529	11.56617	778	99.98686	778			6.1E-05
96	7376.023	519	2223.715	44.47429	44.47429	11.56332	778	99.98686	778			6.1E-05
97	7476.535	519	2223.189	44.46379	44.46379	11.56059	778	99.98686	778			6.1E-05
98	7577.023	519	2222.688	44.45376	44.45376	11.55798	778	99.98686	778			6.1E-05
99	7677.488	519	2222.209	44.44419	44.44419	11.55549	778	99.98686	778			6.1E-05
100	7777.932	519	2221.752	44.43505	44.43505	11.55311	778	99.98686	778			6.1E-05
101	7878.355	519	2221.316	44.42632	44.42632	11.55084	778	99.98686	778			6.1E-05
102	7978.759	519	2220.899	44.41799	44.41799	11.54868	778	99.98686	778			6.1E-05
103	8079.144	519	2220.502	44.41003	44.41003	11.54661	778	99.98686	778			6.1E-05
104	8179.51	519	2220.122	44.40244	44.40244	11.54463	778	99.98686	778			6.1E-05
105	8279.859	519	2219.759	44.39518	44.39518	11.54275	778	99.98686	778			6.1E-05
106	8380.192	519	2219.413	44.38826	44.38826	11.54095	778	99.98686	778			6.1E-05
107	8480.51	519	2219.083	44.38165	44.38165	11.53923	778	99.98686	778			6.1E-05
108	8580.813	519	2218.767	44.37534	44.37534	11.53759	778	99.98686	778			6.1E-05
109	8681.101	519	2218.465	44.3693	44.3693	11.53602	778	99.98686	778			6.1E-05
110	8781.375	519	2218.177	44.36355	44.36355	11.53452	778	99.98686	778			6.1E-05
111	8881.637	519	2217.903	44.35806	44.35806	11.53309	778	99.98686	778			6.1E-05
112	8981.886	519	2217.64	44.35281	44.35281	11.53173	778	99.98686	778			6.1E-05
113	9082.123	519	2217.39	44.3478	44.3478	11.53043	778	99.98686	778			6.1E-05
114	9182.349	519	2217.151	44.34301	44.34301	11.52918	778	99.98686	778			6.1E-05
115	9282.563	519	2216.922	44.33845	44.33845	11.528	778	99.98686	778			6.1E-05
116	9382.769	519	2216.704	44.33409	44.33409	11.52686	778	99.98686	778			6.1E-05
117	9482.964	519	2216.496	44.32992	44.32992	11.52578	778	99.98686	778			6.1E-05
118	9583.149	519	2216.297	44.32595	44.32595	11.52475	778	99.98686	778			6.1E-05
119	9683.326	519	2216.108	44.32215	44.32215	11.52376	778	99.98686	778			6.1E-05
120	9783.494	519	2215.927	44.31853	44.31853	11.52282	778	99.98686	778			6.1E-05

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121	9883.654	519	2215.753	44.31507	44.31507	11.52192	778	99.98686	778			6.1E-05
122	9983.807	519	2215.588	44.31176	44.31176	11.52106	778	99.98686	778			6.1E-05
123	10083.95	519	2215.43	44.30861	44.30861	11.52024	778	99.98686	778			-619.644
124	10184.09	0	2215.28	44.3056	44.3056	11.51945	0	0	0			-377.652
125	10284.22	0	2115.149	42.30298	42.30298	10.99878	0	0	0			-188.826
126	10379.82	0	2019.544	40.39089	40.39089	10.50163	0	0	0			-94.4131
127	10471.11	0	1928.261	38.56522	38.56522	10.02696	0	0	0			-47.2065
128	10558.26	0	1841.104	36.82207	36.82207	9.573739	0	0	0			-23.6033
129	10641.48	0	1757.886	35.15771	35.15771	9.141006	0	0	0			-11.8016
130	10720.94	0	1678.429	33.56858	33.56858	8.727833	0	0	0			-5.90082
131	10796.8	0	1602.564	32.05128	32.05128	8.333335	0	0	0			-2.95041
132	10869.24	0	1530.128	30.60257	30.60257	7.956668	0	0	0			-1.4752
133	10938.4	0	1460.967	29.21933	29.21933	7.597026	0	0	0			-0.7376
134	11004.44	0	1394.931	27.89862	27.89862	7.253641	0	0	0			-0.3688
135	11067.49	0	1331.88	26.6376	26.6376	6.925776	0	0	0			-0.1844
136	11127.69	0	1271.679	25.43358	25.43358	6.612731	0	0	0			-0.0922
137	11185.17	0	1214.199	24.28398	24.28398	6.313836	0	0	0			-0.0461
138	11240.05	0	1159.317	23.18635	23.18635	6.02845	0	0	0			-0.02305
139	11292.45	0	1106.916	22.13832	22.13832	5.755965	0	0	0			-0.01153
140	11342.48	0	1056.884	21.13767	21.13767	5.495795	0	0	0			-0.00576
141	11390.26	0	1009.113	20.18225	20.18225	5.247386	0	0	0			-0.00288
142	11435.87	0	963.5007	19.27001	19.27001	5.010203	0	0	0			-0.00144
143	11479.42	0	919.9504	18.39901	18.39901	4.783742	0	0	0			-0.00072
144	11521	0	878.3687	17.56737	17.56737	4.567517	0	0	0			-0.00036
145	11560.7	0	838.6664	16.77333	16.77333	4.361065	0	0	0			-0.00018
146	11598.61	0	800.7587	16.01517	16.01517	4.163945	0	0	0			-9E-05
147	11634.8	0	764.5644	15.29129	15.29129	3.975735	0	0	0			-4.5E-05
148	11669.36	0	730.0061	14.60012	14.60012	3.796032	0	0	0			-2.3E-05
149	11702.36	0	697.0098	13.9402	13.9402	3.624451	0	0	0			-1.1E-05
150	11733.86	0	665.505	13.3101	13.3101	3.460626	0	0	0			-5.6E-06

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151	11763.95	0	635.4242	12.70848	12.70848	3.304206	0	0	0			-2.8E-06
152	11792.67	0	606.703	12.13406	12.13406	3.154856	0	0	0			-1.4E-06
153	11820.09	0	579.28	11.5856	11.5856	3.012256	0	0	0			-7E-07
154	11846.27	0	553.0966	11.06193	11.06193	2.876102	0	0	0			-3.5E-07
155	11871.27	0	528.0966	10.56193	10.56193	2.746102	0	0	0			-1.8E-07
156	11895.14	0	504.2267	10.08453	10.08453	2.621979	0	0	0			-8.8E-08
157	11917.93	0	481.4356	9.628712	9.628712	2.503465	0	0	0			-4.4E-08
158	11939.69	0	459.6747	9.193494	9.193494	2.390309	0	0	0			-2.2E-08
159	11960.47	0	438.8974	8.777948	8.777948	2.282267	0	0	0			-1.1E-08
160	11980.31	0	419.0593	8.381186	8.381186	2.179108	0	0	0			-5.5E-09

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IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
1	54.86331	54.86331	2	0.07273	269.4303	148989.7	14000	1095698	8000	2000	4.8546	0
2	26.12738	26.12738			556.0571	74865.51		268293.8			36.82748	0
3	13.50031	13.50031			764.022	49993.26		138812.8			94.03578	0
4	7.29981	7.29981			895.3026	37526.11		89198.24			168.4596	0
5	4.044052	4.044052			973.9788	30035.87		63905.46			253.5114	0
6	2.270167	2.270167			1020.046	25038.22		48963.88			344.8694	0
7	1.283752	1.283752			1046.709	21466.44		39286.37			439.9013	0
8	0.728933	0.728933			1062.047	18786.48		32603.23			537.054	0
9	0.414856	0.414856			1070.841	16701.41		27761.1			635.425	0
10	0.23642	0.23642			1075.873	15032.94		24118.24			734.4938	0
11	0.134832	0.134832			1078.75	13667.55		21292.75			833.9619	0
12	0.076925	0.076925			1080.394	12529.54		19045.19			933.6581	18.67316
13	3.825002	3.825002			1081.332	11784.03		17535.88			1014.812	20.29623
14	2.293757	2.293757			1137.663	11134.77		16871.97			1103.753	22.07506
15	1.527664	1.527664			1172.97	10564.35		16001.38			1196.13	23.92259
16	1.13592	1.13592			1197.294	10059.32		15109.31			1290.3	25.806
17	0.932098	0.932098			1215.902	9609.151		14268.36			1385.402	27.70804
18	0.822922	0.822922			1231.569	9205.431		13501.84			1480.988	29.61975
19	0.761368	0.761368			1245.738	8841.396		12812.22			1576.827	31.53654
20	0.723765	0.723765			1259.155	8511.534		12193.99			1672.801	33.45602
21	0.698222	0.698222			1272.203	8211.307		11639.2			1768.851	35.37703
22	0.678802	0.678802			1285.073	7936.946		11139.83			1864.947	37.29894
23	0.662562	0.662562			1297.864	7685.297		10688.56			1961.073	39.22147
24	0.648056	0.648056			1310.623	7453.696		10279.05			2057.223	41.14445
25	13.63642	13.63642			1323.373	7383.312		10098.86			2112.247	42.24493
26	25.90685	25.90685			1349.161	7316.982		10064.53			2168.871	43.37741
27	39.52418	39.52418			1362.055	7254.417		9997.927			2227.287	44.54575
28	54.35303	54.35303			1368.501	7195.354		9942.867			2288.45	45.769
29	69.63102	69.63102			1371.725	7139.551		9916.237			2353.959	47.07917
30	83.76677	83.76677			1373.337	7086.788		9918.998			2425.778	48.51556

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
31	94.42495	94.42495			1374.143	7036.864		9940.307			2505.983	50.11966
32	99.01461	99.01461			1374.546	6989.594		9959.838			2596.441	51.92882
33	95.47454	95.47454			1374.747	6944.809		9951.422			2698.418	53.96836
34	83.03418	83.03418			1374.848	6902.352		9888.884			2812.173	56.24345
35	62.61821	62.61821			1374.898	6862.079		9752.675			2936.661	58.73321
36	36.75272	36.75272			1374.923	6823.855		9534.854			3069.458	61.38916
37	9.04246	9.04246			1374.936	6787.561		9240.682			3206.965	64.13929
38	-8.70954	-8.70954			1374.942	6753.078		8886.807			3344.852	66.89704
39	-7.491	-7.491			1297.39	6720.304		8237.908			3465.956	69.31911
40	-2.16215	-2.16215			1235.366	6689.138		7729.961			3571.684	71.43367
41	0.40566	0.40566			1217.143	6659.489		7446.472			3670.494	73.40989
42	1.587016	1.587016			1220.65	6631.273		7271.804			3765.969	75.31938
43	2.094075	2.094075			1234.773	6604.409		7150.203			3859.888	77.19776
44	2.284932	2.284932			1253.98	6578.824		7054.897			3953.114	79.06229
45	2.332275	2.332275			1275.584	6554.448		6973.246			4046.054	80.92108
46	2.316752	2.316752			1298.316	6531.217		6899.352			4138.895	82.7779
47	2.275045	2.275045			1321.584	6509.069		6830.465			4231.721	84.63442
48	3.043274	3.043274			1345.122	6487.947		6765.276			4324.569	86.49138
49	20.77138	20.77138			1360.035	6501.502		6713.227			4393.732	87.87463
50	38.93856	38.93856			1367.492	6514.498		6681.45			4461.341	89.22681
51	55.75527	55.75527			1371.22	6526.954		6678.016			4529.759	90.59518
52	69.47782	69.47782			1373.084	6538.893		6700.614			4601.586	92.03172
53	78.49105	78.49105			1374.016	6550.332		6740.708			4679.224	93.58447
54	81.52924	81.52924			1374.482	6561.291		6786.121			4764.536	95.29071
55	77.96481	77.96481			1374.715	6571.79		6823.237			4858.584	97.17168
56	68.0449	68.0449			1374.832	6581.845		6839.25			4961.443	99.22887
57	52.96667	52.96667			1374.89	6591.475		6824.307			5072.136	101.4427
58	34.74333	34.74333			1374.919	6600.695		6773.137			5188.717	103.7743
59	15.88529	15.88529			1374.934	6609.524		6685.786			5308.505	106.1701
60	-0.51331	-0.51331			1374.941	6617.975		6567.354			5428.439	108.5688

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
61	-6.29907	-6.29907			1370.303	6626.064		6416.882			5544.814	110.8963
62	-0.97485	-0.97485			1318.678	6633.807		6160.855			5647.703	112.954
63	1.338908	1.338908			1310.473	6641.216		6035.546			5744.312	114.8862
64	2.269063	2.269063			1322.076	6648.306		5968.594			5838.206	116.7641
65	3.419657	3.419657			1342.326	6655.088		5926.848			5930.989	118.6198
66	6.887085	6.887085			1358.637	6661.578		5880.593			6022.288	120.4458
67	13.09483	13.09483			1366.793	6667.787		5824.996			6111.194	122.2239
68	21.01318	21.01318			1370.871	6673.725		5773.961			6197.776	123.9555
69	29.53267	29.53267			1372.91	6679.405		5733.779			6282.836	125.6567
70	37.54439	37.54439			1373.929	6684.837		5706.107			6367.563	127.3512
71	44.03896	44.03896			1374.439	6690.032		5689.618			6453.258	129.0652
72	48.20964	48.20964			1374.694	6695		5681.062			6541.125	130.8225
73	49.54738	49.54738			1374.821	6699.75		5676.105			6632.085	132.6417
74	47.9118	47.9118			1374.885	6704.291		5670.095			6726.656	134.5331
75	43.55998	43.55998			1374.917	6708.633		5658.753			6824.885	136.4977
76	37.11973	37.11973			1374.932	6712.785		5638.786			6926.342	138.5268
77	29.5037	29.5037			1374.94	6716.753		5608.313			7030.184	140.6037
78	21.77616	21.77616			1374.944	6720.546		5567.071			7135.271	142.7054
79	14.99491	14.99491			1374.946	6724.172		5516.371			7240.331	144.8066
80	10.05648	10.05648			1374.948	6727.638		5458.829			7344.125	146.8825
81	7.571452	7.571452			1374.948	6730.95		5397.918			7445.627	148.9126
82	7.790568	7.790568			1374.948	6734.115		5337.461			7544.151	150.883
83	10.58708	10.58708			1374.948	6737.14		5281.087			7639.433	152.7887
84	15.49426	15.49426			1374.948	6740.032		5231.789			7731.654	154.6331
85	21.78446	21.78446			1374.948	6742.794		5191.567			7821.401	156.428
86	28.5745	28.5745			1374.948	6745.434		5161.238			7909.57	158.1914
87	34.94336	34.94336			1374.948	6747.956		5140.387			7997.24	159.9448
88	40.04919	40.04919			1374.948	6750.367		5127.482			8085.519	161.7104
89	43.23519	43.23519			1374.948	6752.67		5120.098			8175.399	163.508
90	44.11414	44.11414			1374.948	6754.87		5115.278			8267.624	165.3525

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
91	42.61967	42.61967			1374.948	6756.972		5109.935			8362.598	167.252
92	39.0155	39.0155			1374.948	6758.98		5101.278			8460.337	169.2067
93	33.85681	33.85681			1374.948	6760.899		5087.18			8560.478	171.2095
94	27.90829	27.90829			1374.948	6762.732		5066.446			8662.335	173.2467
95	22.0295	22.0295			1374.948	6764.483		5038.94			8765.005	175.3001
96	17.04659	17.04659			1374.948	6766.156		5005.541			8867.5	177.35
97	13.63265	13.63265			1374.948	6767.754		4967.963			8968.887	179.3777
98	12.21484	12.21484			1374.948	6769.28		4928.469			9068.418	181.3684
99	12.92257	12.92257			1374.948	6770.739		4889.523			9165.632	183.3126
100	15.58154	15.58154			1374.948	6772.132		4853.437			9260.406	185.2081
101	19.75142	19.75142			1374.948	6773.462		4822.066			9352.964	187.0593
102	24.79793	24.79793			1374.948	6774.733		4796.584			9443.831	188.8766
103	29.98718	29.98718			1374.948	6775.946		4777.354			9533.752	190.675
104	34.5887	34.5887			1374.948	6777.105		4763.923			9623.576	192.4715
105	37.97441	37.97441			1374.948	6778.212		4755.117			9714.138	194.2827
106	39.70317	39.70317			1374.948	6779.27		4749.229			9806.141	196.1228
107	39.5778	39.5778			1374.948	6780.28		4744.278			9900.061	198.0012
108	37.66964	37.66964			1374.948	6781.244		4738.296			9996.088	199.9218
109	34.30383	34.30383			1374.948	6782.166		4729.603			10094.11	201.8821
110	30.00753	30.00753			1374.948	6783.046		4717.035			10193.72	203.8745
111	25.42867	25.42867			1374.948	6783.886		4700.088			10294.33	205.8865
112	21.23763	21.23763			1374.948	6784.689		4678.949			10395.18	207.9036
113	18.02734	18.02734			1374.948	6785.455		4654.44			10495.55	209.9109
114	16.22839	16.22839			1374.948	6786.188		4627.864			10594.77	211.8955
115	16.05147	16.05147			1374.948	6786.886		4600.787			10692.4	213.848
116	17.46493	17.46493			1374.948	6787.554		4574.806			10788.21	215.7642
117	20.20878	20.20878			1374.948	6788.191		4551.317			10882.26	217.6452
118	23.84094	23.84094			1374.948	6788.8		4531.333			10974.85	219.497
119	27.80717	27.80717			1374.948	6789.381		4515.354			11066.49	221.3298
120	31.52401	31.52401			1374.948	6789.937		4503.323			11157.8	223.156

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
121	34.46224	34.46224			1374.948	6790.467		4494.663			11249.44	224.9887
122	36.22131	36.22131			1374.948	6790.973		4488.376			11341.97	226.8394
123	-41.9725	-41.9725			1374.948	6791.457		4483.209			11435.84	228.7168
124	55.49023	55.49023			755.3047	3511.972		3657.408			11531.26	230.6252
125	62.5011	62.5011			377.6523	3678.228		3251.426			11515.65	230.313
126	58.36015	58.36015			188.8262	3852.354		3077.748			11509.63	230.1925
127	44.20894	44.20894			94.41309	4034.724		3012.5			11513.87	230.2775
128	22.88965	22.88965			47.20654	4225.726		2990.019			11527.27	230.5453
129	-1.61405	-1.61405			23.60327	4425.771		2976.082			11547.13	230.9426
130	-23.2996	-23.2996			11.80164	4635.286		2954.982			11568.21	231.3641
131	-18.424	-18.424			5.900818	4854.719		2927.941			11567.25	231.345
132	-15.3981	-15.3981			2.950409	5084.541		2908.431			11567.29	231.3459
133	-12.8299	-12.8299			1.475204	5325.242		2893.335			11567.29	231.3459
134	-10.6917	-10.6917			0.737602	5577.337		2881.351			11567.29	231.3459
135	-8.90967	-8.90967			0.368801	5841.367		2871.661			11567.29	231.3459
136	-7.42476	-7.42476			0.184401	6117.896		2863.736			11567.29	231.3459
137	-6.18726	-6.18726			0.0922	6407.515		2857.205			11567.29	231.3459
138	-5.15609	-5.15609			0.0461	6710.846		2851.801			11567.29	231.3459
139	-4.29675	-4.29675			0.02305	7028.535		2847.315			11567.29	231.3459
140	-3.58061	-3.58061			0.011525	7361.264		2843.587			11567.29	231.3459
141	-2.98385	-2.98385			0.005763	7709.745		2840.484			11567.29	231.3459
142	-2.48649	-2.48649			0.002881	8074.722		2837.901			11567.29	231.3459
143	-2.07206	-2.07206			0.001441	8456.978		2835.75			11567.29	231.3459
144	-1.72681	-1.72681			0.00072	8857.329		2833.958			11567.29	231.3459
145	-1.43892	-1.43892			0.00036	9276.633		2832.464			11567.29	231.3459
146	-1.19918	-1.19918			0.00018	9715.786		2831.22			11567.29	231.3459
147	-0.99927	-0.99927			9E-05	10175.73		2830.183			11567.29	231.3459
148	-0.83268	-0.83268			4.5E-05	10657.45		2829.319			11567.29	231.3459
149	-0.69389	-0.69389			2.25E-05	11161.97		2828.599			11567.29	231.3459
150	-0.57825	-0.57825			1.13E-05	11690.37		2828			11567.29	231.3459

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"change in employees 1 (dE1)"	"change in workstations 1 (dW1)"	"contractor 1 adjustment time (Cat1)"	"contractors 1 production standard (CPS1)"	"Contractors 1 (C1)"	cost per base data set 4	"cost per contractor 1 (cpC1)"	"cost per data set 1 (cD1)"	"cost per employee 1 (cpE1)"	"cost per workstation 1 (cpW1)"	"Data 1 (D1)"	"data 1 decomposition rate a (DDR1a)"
151	-0.48189	-0.48189			5.63E-06	12243.79		2827.499			11567.29	231.3459
152	-0.40157	-0.40157			2.81E-06	12823.41		2827.083			11567.29	231.3459
153	-0.33459	-0.33459			1.41E-06	13430.46		2826.736			11567.29	231.3459
154	-0.27881	-0.27881			7.03E-07	14066.26		2826.446			11567.29	231.3459
155	-0.23238	-0.23238			3.52E-07	14732.15		2826.205			11567.29	231.3459
156	-0.19368	-0.19368			1.76E-07	15429.57		2826.004			11567.29	231.3459
157	-0.16134	-0.16134			8.79E-08	16160		2825.837			11567.29	231.3459
158	-0.13444	-0.13444			4.4E-08	16925.01		2825.698			11567.29	231.3459
159	-0.11194	-0.11194			2.2E-08	17726.24		2825.581			11567.29	231.3459
160	-0.09334	-0.09334			1.1E-08	18565.39		2825.484			11567.29	231.3459

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
1	0	0	0	0	0	0.16	0	11995.15	269.4303	154.7151	31.97288	100
2	0	0	0	0	0		0	11963.17	556.0571	209.5785	57.20831	100
3	0	0	0	0	0		0	11905.96	764.022	235.7058	74.42378	100
4	0	0	0	0	0		0	11831.54	895.3026	249.2061	85.05184	100
5	0	0	0	0	0		0	11746.49	973.9788	256.506	91.35794	100
6	0	0	0	0	0		0	11655.13	1020.046	260.55	95.03193	100
7	0	0	0	0	0		0	11560.1	1046.709	262.8202	97.15273	100
8	0	0	0	0	0		0	11462.95	1062.047	264.1039	98.37097	100
9	0	0	0	0	0		0	11364.58	1070.841	264.8329	99.06886	100
10	0	0	0	0	0		0	11265.51	1075.873	265.2477	99.46806	100
11	0	0	0	0	0		0	11166.04	1078.75	265.4841	99.69621	100
12	0	0	0	0	0		0	11066.34	1080.394	265.619	99.82654	100
13	0	0	116.7073	18.67316	18.67316		116.7073	10966.52	1081.332	148.9886	109.2375	118.6732
14	0	0	126.8514	20.29623	20.29623		126.8514	10875.95	1137.663	142.6695	114.452	120.2962
15	0	0	137.9691	22.07506	22.07506		137.9691	10781.79	1172.97	133.8456	118.0928	122.0751
16	0	0	149.5162	23.92259	23.92259		149.5162	10685.78	1197.294	123.8261	120.9079	123.9226
17	0	0	161.2875	25.806	25.806		161.2875	10588.79	1215.902	113.1908	123.2938	125.806
18	0	0	173.1752	27.70804	27.70804		173.1752	10491.3	1231.569	102.2351	125.4588	127.708
19	0	0	185.1235	29.61975	29.61975		185.1235	10393.55	1245.738	91.10982	127.511	129.6198
20	0	0	197.1033	31.53653	31.53653		197.1033	10295.66	1259.155	79.8913	129.5062	131.5365
21	0	0	209.1002	33.45602	33.45602		209.1002	10197.69	1272.203	68.61823	131.4728	133.456
22	0	0	221.1064	35.37703	35.37703		221.1064	10099.68	1285.073	57.31015	133.4252	135.377
23	0	0	233.1184	37.29894	37.29894		233.1184	10001.63	1297.864	45.97702	135.3708	137.2989
24	41.14445	0	245.1342	39.22147	39.22147		245.1342	9903.556	1310.623	34.62379	137.313	139.2215
25	42.24493	0	280.406	82.2889	82.2889		280.406	9805.464	1323.373	0	141.1139	182.2889
26	43.37741	0	294.0424	121.9138	121.9138		294.0424	9709.215	1349.161	0	145.1712	221.9138
27	44.54575	0	319.9493	161.6219	161.6219		319.9493	9611.091	1362.055	0	150.2541	261.6219
28	45.769	0	359.4734	199.5215	199.5215		359.4734	9512.028	1368.501	0	157.0469	299.5215
29	47.07917	0	413.8265	233.5437	233.5437		413.8265	9412.497	1371.725	0	165.9778	333.5437
30	48.51556	0	483.4575	261.4898	261.4898		483.4575	9312.731	1373.337	0	177.236	361.4898

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
31	50.11966	0	567.2242	281.1677	281.1677		567.2242	9212.85	1374.143	0	190.6973	381.1677
32	51.92882	0	661.6492	290.6512	290.6512		661.6492	9112.907	1374.546	0	205.8346	390.6512
33	53.96836	0	760.6638	288.645	288.645		760.6638	9012.938	1374.747	0	221.6916	388.645
34	56.24345	0	856.1383	274.8755	274.8755		856.1383	8912.951	1374.848	0	236.9748	374.8755
35	58.73321	0	939.1725	250.3803	250.3803		939.1725	8812.96	1374.898	0	250.2639	350.3802
36	61.38916	0	1001.791	217.5791	217.5791		1001.791	8712.963	1374.923	0	260.2847	317.5791
37	64.13929	0	1038.543	180.0709	180.0709		1038.543	8612.964	1374.936	0	266.166	280.0709
38	66.89704	0	888.6408	142.1825	142.1825		888.6408	8512.966	1374.942	158.9451	254.8977	242.1825
39	69.31911	0	836.213	133.7941	133.7941		836.213	8400.251	1297.39	202.6634	244.3663	233.7941
40	71.43367	0	866.4888	138.6382	138.6382		866.4888	8289.678	1235.366	164.8965	241.6781	238.6382
41	73.40989	0	892.9209	142.8673	142.8673		892.9209	8186.639	1217.143	136.3024	242.2943	242.8673
42	75.31938	0	917.6237	146.8198	146.8198		917.6237	8087.211	1220.65	112.0052	244.5581	246.8198
43	77.19776	0	941.4923	150.6388	150.6388		941.4923	7989.473	1234.773	89.72363	247.6217	250.6388
44	79.06229	0	964.972	154.3955	154.3955		964.972	7892.49	1253.98	68.33801	251.0645	254.3955
45	80.92108	0	988.2786	158.1246	158.1246		988.2786	7795.821	1275.584	47.31635	254.6831	258.1246
46	82.7779	0	1011.514	161.8422	161.8422		1011.514	7699.263	1298.316	26.4137	258.3818	261.8422
47	84.63442	0	1034.724	165.5558	165.5558		1034.724	7602.723	1321.584	5.520142	262.1163	265.5558
48	86.49138	22.48776	1042.519	169.2688	169.2688		1042.519	7506.162	1345.122	0	264.6338	269.2688
49	87.87463	22.84741	1045.562	197.9363	197.9363		1045.562	7408.332	1360.035	0	266.2053	297.9363
50	89.22681	23.19897	1066.334	229.243	229.243		1066.334	7309.416	1367.492	0	270.071	329.243
51	90.59518	23.55475	1105.272	260.2823	260.2823		1105.272	7209.958	1371.22	0	276.5724	360.2823
52	92.03172	23.92825	1161.027	288.1838	288.1838		1161.027	7110.229	1373.084	0	285.6288	388.1838
53	93.58447	24.33196	1230.505	310.4111	310.4111		1230.505	7010.365	1374.016	0	296.8131	410.4111
54	95.29071	24.77559	1308.996	325.0312	325.0312		1308.996	6910.433	1374.482	0	309.4055	425.0312
55	97.17168	25.26464	1390.526	330.9488	330.9488		1390.526	6810.467	1374.715	0	322.4671	430.9488
56	99.22887	25.79951	1468.49	328.0727	328.0727		1468.49	6710.484	1374.832	0	334.95	428.0727
57	101.4427	26.37511	1536.535	317.3715	317.3715		1536.535	6610.492	1374.89	0	345.8414	417.3715
58	103.7743	26.98133	1589.502	300.7864	300.7864		1589.502	6510.496	1374.919	0	354.3182	400.7864
59	106.1701	27.60423	1624.245	280.9961	280.9961		1624.245	6410.499	1374.934	0	359.8782	380.9961
60	108.5688	28.22788	1631.633	261.0613	261.0613		1631.633	6310.5	1374.941	8.497559	361.7405	361.0613

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
61	110.8963	28.83303	1533.534	245.3654	245.3654		1533.534	6209.821	1370.303	106.0833	353.5142	345.3654
62	112.954	29.36805	1566.41	250.6256	250.6256		1566.41	6101.672	1318.678	66.90808	351.8857	350.6256
63	114.8862	29.87042	1595.476	255.2762	255.2762		1595.476	6000.412	1310.473	36.86743	353.5363	355.2762
64	116.7641	30.35867	1622.768	259.6429	259.6429		1622.768	5902.151	1322.076	10.91418	356.6706	359.6429
65	118.6198	30.84114	1635.951	263.8869	263.8869		1635.951	5805.124	1342.326	0	359.3796	363.8869
66	120.4458	31.3159	1639.371	270.2154	270.2154		1639.371	5707.497	1358.637	0	361.113	370.2154
67	122.2239	31.77821	1646.258	280.1234	280.1234		1646.258	5608.683	1366.793	0	362.8081	380.1234
68	123.9555	32.22844	1659.353	292.9481	292.9481		1659.353	5509.276	1370.871	0	365.1999	392.9481
69	125.6567	32.67075	1680.366	307.5911	307.5911		1680.366	5409.572	1372.91	0	368.7103	407.5911
70	127.3512	33.11132	1709.899	322.7167	322.7167		1709.899	5309.721	1373.929	0	373.5096	422.7167
71	129.0652	33.55694	1747.443	336.9467	336.9467		1747.443	5209.795	1374.439	0	379.5538	436.9467
72	130.8225	34.01385	1791.482	349.0432	349.0432		1791.482	5109.832	1374.694	0	386.6186	449.0432
73	132.6417	34.48684	1839.692	358.0648	358.0648		1839.692	5009.85	1374.821	0	394.3414	458.0648
74	134.5331	34.97861	1889.239	363.4844	363.4844		1889.239	4909.859	1374.885	0	402.2736	463.4844
75	136.4977	35.4894	1937.151	365.251	365.251		1937.151	4809.864	1374.917	0	409.9418	465.251
76	138.5268	36.01698	1980.711	363.7917	363.7917		1980.711	4709.867	1374.932	0	416.9125	463.7917
77	140.6037	36.55695	2017.831	359.9487	359.9487		2017.831	4609.868	1374.94	0	422.8523	459.9487
78	142.7054	37.10341	2047.334	354.8601	354.8601		2047.334	4509.869	1374.944	0	427.5732	454.8601
79	144.8066	37.64972	2069.11	349.8009	349.8009		2069.11	4409.869	1374.946	0	431.0575	449.8009
80	146.8825	38.18945	2084.105	346.0061	346.0061		2084.105	4309.869	1374.948	0	433.4568	446.0061
81	148.9126	38.71726	2094.162	344.5038	344.5038		2094.162	4209.869	1374.948	0	435.0659	444.5038
82	150.883	39.22958	2101.733	345.9802	345.9802		2101.733	4109.869	1374.948	0	436.2772	445.9802
83	152.7887	39.72505	2109.524	350.6986	350.6986		2109.524	4009.869	1374.948	0	437.5237	450.6986
84	154.6331	40.2046	2120.111	358.4771	358.4771		2120.111	3909.869	1374.948	0	439.2177	458.4771
85	156.428	40.67128	2135.605	368.7302	368.7302		2135.605	3809.869	1374.948	0	441.6967	468.7302
86	158.1914	41.12976	2157.389	380.5607	380.5607		2157.389	3709.869	1374.948	0	445.1823	480.5607
87	159.9448	41.58565	2185.964	392.8911	392.8911		2185.964	3609.869	1374.948	0	449.7542	492.8911
88	161.7104	42.0447	2220.907	404.6121	404.6121		2220.907	3509.869	1374.948	0	455.3452	504.6121
89	163.508	42.51207	2260.957	414.7324	414.7324		2260.957	3409.869	1374.948	0	461.7531	514.7324
90	165.3525	42.99165	2304.192	422.5073	422.5073		2304.192	3309.869	1374.948	0	468.6707	522.5073

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
91	167.252	43.48551	2348.306	427.5333	427.5333		2348.306	3209.869	1374.948	0	475.7289	527.5333
92	169.2067	43.99375	2390.925	429.7938	429.7938		2390.925	3109.869	1374.948	0	482.548	529.7938
93	171.2095	44.51448	2429.941	429.653	429.653		2429.941	3009.869	1374.948	0	488.7905	529.653
94	173.2467	45.04414	2463.798	427.7961	427.7961		2463.798	2909.869	1374.948	0	494.2076	527.796
95	175.3001	45.57803	2491.706	425.1259	425.1259		2491.706	2809.869	1374.948	0	498.673	525.126
96	177.35	46.111	2513.736	422.6312	422.6312		2513.736	2709.869	1374.948	0	502.1977	522.6312
97	179.3777	46.63821	2530.782	421.2445	421.2445		2530.782	2609.869	1374.948	0	504.9251	521.2445
98	181.3684	47.15577	2544.415	421.713	421.713		2544.415	2509.869	1374.948	0	507.1063	521.713
99	183.3126	47.66129	2556.63	424.4991	424.4991		2556.63	2409.869	1374.948	0	509.0607	524.4991
100	185.2081	48.15411	2569.552	429.725	429.725		2569.552	2309.869	1374.948	0	511.1284	529.725
101	187.0593	48.63541	2585.134	437.167	437.167		2585.134	2209.869	1374.948	0	513.6214	537.167
102	188.8766	49.10792	2604.885	446.2995	446.2995		2604.885	2109.869	1374.948	0	516.7817	546.2996
103	190.675	49.57551	2629.683	456.379	456.379		2629.683	2009.869	1374.948	0	520.7493	556.379
104	192.4715	50.04259	2659.67	466.5552	466.5552		2659.67	1909.869	1374.948	0	525.5472	566.5552
105	194.2827	50.51352	2694.259	475.9937	475.9937		2694.259	1809.869	1374.948	0	531.0815	575.9937
106	196.1228	50.99193	2732.233	483.9912	483.9912		2732.233	1709.868	1374.948	0	537.1573	583.9912
107	198.0012	51.48032	2771.937	490.0714	490.0714		2771.937	1609.868	1374.948	0	543.5099	590.0714
108	199.9218	51.97966	2811.514	494.0442	494.0442		2811.514	1509.868	1374.948	0	549.8423	594.0442
109	201.8821	52.48936	2849.184	496.0251	496.0251		2849.184	1409.867	1374.948	0	555.8694	596.0251
110	203.8745	53.00736	2883.488	496.4092	496.4092		2883.488	1309.867	1374.948	0	561.358	596.4092
111	205.8865	53.53049	2913.495	495.8075	495.8075		2913.495	1209.867	1374.948	0	566.1592	595.8075
112	207.9036	54.05494	2938.924	494.9518	494.9518		2938.924	1109.868	1374.948	0	570.2278	594.9518
113	209.9109	54.57684	2960.162	494.5861	494.5861		2960.162	1009.868	1374.948	0	573.6259	594.5861
114	211.8955	55.09282	2978.189	495.3589	495.3589		2978.189	909.8677	1374.948	0	576.5102	595.3589
115	213.848	55.60048	2994.417	497.7325	497.7325		2994.417	809.8672	1374.948	0	579.1068	597.7324
116	215.7642	56.0987	3010.469	501.9222	501.9222		3010.469	709.8669	1374.948	0	581.675	601.9222
117	217.6452	56.58775	3027.934	507.8743	507.8743		3027.934	609.8669	1374.948	0	584.4694	607.8743
118	219.497	57.06922	3048.143	515.283	515.283		3048.143	509.8674	1374.948	0	587.7028	615.283
119	221.3298	57.54575	3071.983	523.6433	523.6433		3071.983	409.8674	1374.948	0	591.5173	623.6433
120	223.156	58.02057	3099.791	532.3313	532.3313		3099.791	309.8669	1374.948	0	595.9664	632.3313

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
121	224.9887	58.49707	3131.314	540.6975	540.6975		3131.314	209.8669	1374.948	0	601.0103	640.6975
122	226.8394	58.97825	3165.777	548.1617	548.1617		3165.777	109.8666	1374.948	0	606.5243	648.1617
123	228.7168	59.46636	3201.998	554.2945	554.2945		3201.998	9.866638	1374.948	0	612.3197	564.1611
124	230.6252	59.96255	3160.025	558.8747	558.8747		3160.025	0	0	0	505.604	558.8747
125	230.313	59.88138	3215.516	574.4835	574.4835		3215.516	0	0	0	514.4825	574.4835
126	230.1925	59.85006	3278.017	580.5084	580.5084		3278.017	0	0	0	524.4827	580.5084
127	230.2775	59.87215	3336.377	576.2609	576.2609		3336.377	0	0	0	533.8203	576.2609
128	230.5453	59.94179	3380.586	562.8677	562.8677		3380.586	0	0	0	540.8937	562.8677
129	230.9426	60.04507	3393.791	543.0065	543.0065		3393.791	0	0	0	544.556	543.0065
130	231.3641	60.15467	3262.064	521.9302	521.9302		3262.064	0	0	0	544.2978	521.9302
131	231.345	60.14971	3268.018	522.8829	522.8829		3268.018	0	0	0	540.5699	522.8829
132	231.3459	60.14993	3267.749	522.8398	522.8398		3267.749	0	0	0	537.622	522.8398
133	231.3459	60.14993	3267.76	522.8417	522.8417		3267.76	0	0	0	535.1584	522.8417
134	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	533.1056	522.8416
135	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	531.3949	522.8416
136	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	529.9694	522.8416
137	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	528.7814	522.8416
138	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	527.7914	522.8416
139	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	526.9665	522.8416
140	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	526.279	522.8416
141	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	525.7061	522.8416
142	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	525.2286	522.8416
143	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	524.8308	522.8416
144	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	524.4993	522.8416
145	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	524.223	522.8416
146	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.9928	522.8416
147	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.8009	522.8416
148	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.641	522.8416
149	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.5078	522.8416
150	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.3967	522.8416

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 decomposition rate b (DDR1b)"	"data 1 decomposition rate c (DDR1c)"	"data 1 maintenance employees (EM1)"	"Data 1 Maintenance Queue (DM1)"	"data 1 maintenance required (DMR1)"	"data 1 maintenance standard (MS1)"	"data 1 maintenance workstations (WM1)"	"data 1 population requirement (DR1)"	"data 1 production contracts (CP1)"	"data 1 production employees (EP1)"	"data 1 production function (Dp1)"	"data 1 production goal (Dp1*)"
151	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.3042	522.8416
152	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.2271	522.8416
153	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.1628	522.8416
154	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.1093	522.8416
155	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.0647	522.8416
156	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	523.0275	522.8416
157	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	522.9965	522.8416
158	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	522.9707	522.8416
159	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	522.9491	522.8416
160	231.3459	60.14993	3267.76	522.8416	522.8416		3267.76	0	0	0	522.9312	522.8416

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 producti on rate (DPR1)"	"data 1 producti on requirem ent (DPN1)"	"data 1 producti on standard (PS1)"	"data 1 producti on workstati ons (WP1)"	"data 1 theoritica l maintena nce value (DTM1)"	"data 1 theoritica l producti on (DTP1)"	"data type 1 maintena nce rate (DMR1)"	"desired contracto rs data 1 (C1*)"	"desired employe es 1 (E1*)"	"desired workstati ons 1 (W1*)"	"employe e 1 adjustme nt time (Eat1)"	"employe e 1 producti on expon ent (eep1)"
1	31.97288	100	0.08	154.7151	0	31.97288	0	842.684	483.895	483.895	6	0.5
2	57.20831	100		209.5785	0	57.20831	0	971.9868	366.3427	366.3427		
3	74.42378	100		235.7058	0	74.42378	0	1026.583	316.7077	316.7077		
4	85.05184	100		249.2061	0	85.05184	0	1052.655	293.005	293.005		
5	91.35794	100		256.506	0	91.35794	0	1066.113	280.7703	280.7703		
6	95.03193	100		260.55	0	95.03193	0	1073.372	274.171	274.171		
7	97.15273	100		262.8202	0	97.15273	0	1077.385	270.5227	270.5227		
8	98.37097	100		264.1039	0	98.37097	0	1079.634	268.4775	268.4775		
9	99.06886	100		264.8329	0	99.06886	0	1080.905	267.322	267.322		
10	99.46806	100		265.2477	0	99.46806	0	1081.627	266.6662	266.6662		
11	99.69621	100		265.4841	0	99.69621	0	1082.037	266.2931	266.2931		
12	99.82654	100		265.619	0	99.82654	0	1082.271	266.0805	266.0805		
13	90.56438	100		148.9886	18.67316	90.56438	18.67316	1193.993	288.6459	288.6459		
14	94.15575	100		142.6695	20.29623	94.15575	20.29623	1208.277	283.2834	283.2834		
15	96.01775	100		133.8456	22.07506	96.01775	22.07506	1221.618	280.9807	280.9807		
16	96.98528	100		123.8261	23.92259	96.98528	23.92259	1234.511	280.1579	280.1579		
17	97.48785	100		113.1908	25.806	97.48785	25.806	1247.235	280.0709	280.0709		
18	97.75079	100		102.2351	27.70804	97.75079	27.70804	1259.907	280.3479	280.3479		
19	97.89127	100		91.10982	29.61975	97.89127	29.61975	1272.573	280.8015	280.8015		
20	97.96964	100		79.8913	31.53653	97.96964	31.53653	1285.25	281.3372	281.3372		
21	98.01675	100		68.61823	33.45602	98.01675	33.45602	1297.944	281.9077	281.9077		
22	98.04819	100		57.31015	35.37703	98.04819	35.37703	1310.655	282.4894	282.4894		
23	98.07182	100		45.97702	37.29894	98.07182	37.29894	1323.381	283.0708	283.0708		
24	98.0915	100		34.62379	39.22147	98.0915	39.22147	1336.123	283.6463	283.6463		
25	96.2489	100		0	44.86496	96.2489	44.86496	1374.948	362.2245	362.2245		
26	98.12445	100		0	47.04679	98.12445	47.04679	1374.948	449.4835	449.4835		
27	99.06223	100		0	51.19189	99.06223	51.19189	1374.948	557.0944	557.0944		
28	99.53111	100		0	57.51575	99.53111	57.51575	1374.948	685.5916	685.5916		
29	99.76556	100		0	66.21223	99.76556	66.21223	1374.948	831.6126	831.6126		
30	99.88277	100		0	77.3532	99.88277	77.3532	1374.948	986.0581	986.0581		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 producti on rate (DPR1)"	"data 1 producti on requirem ent (DPN1)"	"data 1 producti on standard (PS1)"	"data 1 producti on workstati ons (WP1)"	"data 1 theoritica l maintena nce value (DTM1)"	"data 1 theoritica l producti on (DTP1)"	"data type 1 maintena nce rate (DMR1)"	"desired contracto rs data 1 (C1*)"	"desired employe es 1 (E1*)"	"desired workstati ons 1 (W1*)"	"employe e 1 adjustme nt time (Eat1)"	"employe e 1 producti on expon ent (eep1)"
31	99.94138	100		0	90.75587	99.94138	90.75587	1374.948	1133.774	1133.774		
32	99.9707	100		0	105.8639	99.9707	105.8639	1374.948	1255.737	1255.737		
33	99.98535	100		0	121.7062	99.98535	121.7062	1374.948	1333.511	1333.511		
34	99.99268	100		0	136.9821	99.99268	136.9821	1374.948	1354.343	1354.343		
35	99.99633	100		0	150.2676	99.99633	150.2676	1374.949	1314.882	1314.882		
36	99.99817	100		0	160.2865	99.99817	160.2865	1374.949	1222.307	1222.307		
37	99.99909	100		0	166.1669	99.99909	166.1669	1374.948	1092.798	1092.798		
38	112.7152	100		158.9451	142.1825	112.7152	142.1825	1219.838	995.3287	995.3287		
39	110.5723	100		202.6634	133.7941	110.5723	133.7941	1173.341	993.9304	993.9304		
40	103.0399	100		164.8965	138.6382	103.0399	138.6382	1198.92	1018.412	1018.412		
41	99.42699	100		136.3024	142.8673	99.42699	142.8673	1224.157	1031.657	1031.657		
42	97.7383	100		112.0052	146.8198	97.7383	146.8198	1248.896	1039.151	1039.151		
43	96.98294	100		89.72363	150.6388	96.98294	150.6388	1273.186	1043.78	1043.78		
44	96.66898	100		68.33801	154.3955	96.66898	154.3955	1297.189	1047.02	1047.02		
45	96.55856	100		47.31635	158.1246	96.55856	158.1246	1321.047	1049.589	1049.589		
46	96.53961	100		26.4137	161.8421	96.53961	161.8421	1344.853	1051.828	1051.828		
47	96.56045	100		5.520142	165.5558	96.56045	165.5558	1368.66	1053.894	1053.894		
48	97.83074	100		0	166.803	97.83074	166.803	1374.948	1060.779	1060.779		
49	98.91537	100		0	167.29	98.91537	167.29	1374.948	1170.191	1170.191		
50	99.45769	100		0	170.6134	99.45769	170.6134	1374.948	1299.965	1299.965		
51	99.72884	100		0	176.8436	99.72884	176.8436	1374.948	1439.804	1439.804		
52	99.86442	100		0	185.7644	99.86442	185.7644	1374.949	1577.894	1577.894		
53	99.93221	100		0	196.8809	99.93221	196.8809	1374.948	1701.452	1701.452		
54	99.9661	100		0	209.4394	99.9661	209.4394	1374.948	1798.172	1798.172		
55	99.98304	100		0	222.4841	99.98304	222.4841	1374.948	1858.314	1858.314		
56	99.99152	100		0	234.9585	99.99152	234.9585	1374.948	1876.76	1876.76		
57	99.99576	100		0	245.8457	99.99576	245.8457	1374.948	1854.335	1854.335		
58	99.99788	100		0	254.3203	99.99788	254.3203	1374.948	1797.962	1797.962		
59	99.99893	100		0	259.8792	99.99893	259.8792	1374.949	1719.557	1719.557		
60	100.6793	100		8.497559	261.0613	100.6793	261.0613	1365.665	1637.051	1637.051		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 producti on rate (DPR1)"	"data 1 producti on requirem ent (DPN1)"	"data 1 producti on standard (PS1)"	"data 1 producti on workstati ons (WP1)"	"data 1 theoritica l maintena nce value (DTM1)"	"data 1 theoritica l producti on (DTP1)"	"data type 1 maintena nce rate (DMR1)"	"desired contracto rs data 1 (C1*)"	"desired employe es 1 (E1*)"	"desired workstati ons 1 (W1*)"	"employe e 1 adjustme nt time (Eat1)"	"employe e 1 producti on expon ent (eep1)"
61	108.1488	100		106.0833	245.3654	108.1488	245.3654	1267.053	1601.823	1601.823		
62	101.2601	100		66.90808	250.6256	101.2601	250.6256	1302.268	1627.469	1627.469		
63	98.26011	100		36.86743	255.2762	98.26011	255.2762	1333.678	1640.377	1640.377		
64	97.02769	100		10.91418	259.6429	97.02769	259.6429	1362.576	1647.297	1647.297		
65	97.62733	100		0	261.7522	97.62733	261.7522	1374.948	1656.469	1656.469		
66	98.81366	100		0	262.2994	98.81366	262.2994	1374.948	1680.693	1680.693		
67	99.40683	100		0	263.4013	99.40683	263.4013	1374.949	1724.827	1724.827		
68	99.70341	100		0	265.4965	99.70341	265.4965	1374.948	1785.432	1785.432		
69	99.85171	100		0	268.8586	99.85171	268.8586	1374.948	1857.562	1857.562		
70	99.92585	100		0	273.5838	99.92585	273.5838	1374.948	1935.165	1935.165		
71	99.96292	100		0	279.5909	99.96292	279.5909	1374.949	2011.677	2011.677		
72	99.98146	100		0	286.6371	99.98146	286.6371	1374.948	2080.74	2080.74		
73	99.99073	100		0	294.3507	99.99073	294.3507	1374.949	2136.976	2136.976		
74	99.99537	100		0	302.2782	99.99537	302.2782	1374.948	2176.71	2176.71		
75	99.99767	100		0	309.9441	99.99767	309.9441	1374.948	2198.511	2198.511		
76	99.99884	100		0	316.9137	99.99884	316.9137	1374.948	2203.429	2203.429		
77	99.99941	100		0	322.8529	99.99941	322.8529	1374.948	2194.853	2194.853		
78	99.99971	100		0	327.5735	99.99971	327.5735	1374.948	2177.991	2177.991		
79	99.99985	100		0	331.0577	99.99985	331.0577	1374.948	2159.08	2159.08		
80	99.99993	100		0	333.4568	99.99993	333.4568	1374.948	2144.444	2144.444		
81	99.99996	100		0	335.0659	99.99996	335.0659	1374.948	2139.59	2139.59		
82	99.99998	100		0	336.2773	99.99998	336.2773	1374.948	2148.477	2148.477		
83	99.99998	100		0	337.5238	99.99998	337.5238	1374.948	2173.046	2173.046		
84	99.99998	100		0	339.2177	99.99998	339.2177	1374.948	2213.076	2213.076		
85	99.99998	100		0	341.6967	99.99998	341.6967	1374.948	2266.312	2266.312		
86	99.99998	100		0	345.1823	99.99998	345.1823	1374.948	2328.836	2328.836		
87	99.99998	100		0	349.7542	99.99998	349.7542	1374.948	2395.624	2395.624		
88	99.99998	100		0	355.3452	99.99998	355.3452	1374.948	2461.202	2461.202		
89	99.99998	100		0	361.7531	99.99998	361.7531	1374.948	2520.368	2520.368		
90	99.99998	100		0	368.6707	99.99998	368.6707	1374.948	2568.876	2568.876		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 production rate (DPR1)"	"data 1 production requirement (DPN1)"	"data 1 production standard (PS1)"	"data 1 production workstations (WP1)"	"data 1 theoretical maintenance value (DTM1)"	"data 1 theoretical production (DTP1)"	"data type 1 maintenance rate (DMR1)"	"desired contractors data 1 (C1*)"	"desired employees 1 (E1*)"	"desired workstations 1 (W1*)"	"employee 1 adjustment time (Eat1)"	"employee 1 production exponent (eep1)"
91	99.99998	100		0	375.7289	99.99998	375.7289	1374.948	2604.024	2604.024		
92	99.99998	100		0	382.548	99.99998	382.548	1374.948	2625.018	2625.018		
93	99.99998	100		0	388.7905	99.99998	388.7905	1374.948	2633.082	2633.082		
94	99.99998	100		0	394.2076	99.99998	394.2076	1374.948	2631.248	2631.248		
95	99.99998	100		0	398.673	99.99998	398.673	1374.948	2623.883	2623.883		
96	99.99998	100		0	402.1977	99.99998	402.1977	1374.948	2616.015	2616.015		
97	99.99998	100		0	404.9251	99.99998	404.9251	1374.948	2612.578	2612.578		
98	99.99998	100		0	407.1064	99.99998	407.1064	1374.948	2617.704	2617.704		
99	99.99998	100		0	409.0607	99.99998	409.0607	1374.948	2634.165	2634.165		
100	99.99998	100		0	411.1284	99.99998	411.1284	1374.948	2663.042	2663.042		
101	99.99998	100		0	413.6214	99.99998	413.6214	1374.948	2703.642	2703.642		
102	99.99998	100		0	416.7817	99.99998	416.7817	1374.948	2753.673	2753.673		
103	99.99998	100		0	420.7493	99.99998	420.7493	1374.948	2809.606	2809.606		
104	99.99998	100		0	425.5472	99.99998	425.5472	1374.948	2867.203	2867.203		
105	99.99998	100		0	431.0815	99.99998	431.0815	1374.948	2922.105	2922.105		
106	99.99998	100		0	437.1573	99.99998	437.1573	1374.948	2970.452	2970.452		
107	99.99998	100		0	443.5099	99.99998	443.5099	1374.948	3009.403	3009.403		
108	99.99998	100		0	449.8423	99.99998	449.8423	1374.948	3037.532	3037.532		
109	99.99998	100		0	455.8695	99.99998	455.8695	1374.948	3055.007	3055.007		
110	99.99998	100		0	461.358	99.99998	461.358	1374.948	3063.533	3063.533		
111	99.99998	100		0	466.1592	99.99998	466.1592	1374.948	3066.067	3066.067		
112	99.99998	100		0	470.2278	99.99998	470.2278	1374.948	3066.35	3066.35		
113	99.99998	100		0	473.6259	99.99998	473.6259	1374.948	3068.326	3068.326		
114	99.99998	100		0	476.5102	99.99998	476.5102	1374.948	3075.559	3075.559		
115	99.99998	100		0	479.1068	99.99998	479.1068	1374.948	3090.726	3090.726		
116	99.99998	100		0	481.675	99.99998	481.675	1374.948	3115.259	3115.259		
117	99.99998	100		0	484.4694	99.99998	484.4694	1374.948	3149.187	3149.187		
118	99.99998	100		0	487.7029	99.99998	487.7029	1374.948	3191.188	3191.188		
119	99.99998	100		0	491.5173	99.99998	491.5173	1374.948	3238.826	3238.826		
120	99.99998	100		0	495.9665	99.99998	495.9665	1374.948	3288.935	3288.935		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 producti on rate (DPR1)"	"data 1 producti on requirem ent (DPN1)"	"data 1 producti on standard (PS1)"	"data 1 producti on workstati ons (WP1)"	"data 1 theoritica l maintena nce value (DTM1)"	"data 1 theoritica l producti on (DTP1)"	"data type 1 maintena nce rate (DMR1)"	"desired contracto rs data 1 (C1*)"	"desired employe es 1 (E1*)"	"desired workstati ons 1 (W1*)"	"employe e 1 adjustme nt time (Eat1)"	"employe e 1 producti on expon ent (eep1)"
121	99.99998	100		0	501.0103	99.99998	501.0103	1374.948	3338.088	3338.088		
122	99.99998	100		0	506.5243	99.99998	506.5243	1374.948	3383.104	3383.104		
123	99.99998	9.866638		0	512.3197	99.99998	512.3197	135.6612	2950.163	2950.163		
124	0	0		0	505.604	0	505.6041	0	3492.967	3492.967		
125	0	0		0	514.4825	0	514.4825	0	3590.522	3590.522		
126	0	0		0	524.4827	0	524.4827	0	3628.177	3628.177		
127	0	0		0	533.8203	0	533.8203	0	3601.63	3601.63		
128	0	0		0	540.8937	0	540.8937	0	3517.924	3517.924		
129	0	0		0	544.556	0	543.0065	0	3393.791	3393.791		
130	0	0		0	544.2978	0	521.9302	0	3262.064	3262.064		
131	0	0		0	540.5699	0	522.8828	0	3268.018	3268.018		
132	0	0		0	537.622	0	522.8398	0	3267.749	3267.749		
133	0	0		0	535.1584	0	522.8417	0	3267.76	3267.76		
134	0	0		0	533.1056	0	522.8416	0	3267.76	3267.76		
135	0	0		0	531.3949	0	522.8416	0	3267.76	3267.76		
136	0	0		0	529.9694	0	522.8416	0	3267.76	3267.76		
137	0	0		0	528.7814	0	522.8416	0	3267.76	3267.76		
138	0	0		0	527.7914	0	522.8416	0	3267.76	3267.76		
139	0	0		0	526.9665	0	522.8416	0	3267.76	3267.76		
140	0	0		0	526.279	0	522.8416	0	3267.76	3267.76		
141	0	0		0	525.7061	0	522.8416	0	3267.76	3267.76		
142	0	0		0	525.2286	0	522.8416	0	3267.76	3267.76		
143	0	0		0	524.8308	0	522.8416	0	3267.76	3267.76		
144	0	0		0	524.4993	0	522.8416	0	3267.76	3267.76		
145	0	0		0	524.223	0	522.8416	0	3267.76	3267.76		
146	0	0		0	523.9928	0	522.8416	0	3267.76	3267.76		
147	0	0		0	523.8009	0	522.8416	0	3267.76	3267.76		
148	0	0		0	523.641	0	522.8416	0	3267.76	3267.76		
149	0	0		0	523.5078	0	522.8416	0	3267.76	3267.76		
150	0	0		0	523.3967	0	522.8416	0	3267.76	3267.76		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"data 1 production rate (DPR1)"	"data 1 production requirement (DPN1)"	"data 1 production standard (PS1)"	"data 1 production workstations (WP1)"	"data 1 theoretical maintenance value (DTM1)"	"data 1 theoretical production (DTP1)"	"data type 1 maintenance rate (DMR1)"	"desired contractors data 1 (C1*)"	"desired employees 1 (E1*)"	"desired workstations 1 (W1*)"	"employee 1 adjustment time (Eat1)"	"employee 1 production exponent (eep1)"
151	0	0		0	523.3042	0	522.8416	0	3267.76	3267.76		
152	0	0		0	523.2271	0	522.8416	0	3267.76	3267.76		
153	0	0		0	523.1628	0	522.8416	0	3267.76	3267.76		
154	0	0		0	523.1093	0	522.8416	0	3267.76	3267.76		
155	0	0		0	523.0647	0	522.8416	0	3267.76	3267.76		
156	0	0		0	523.0275	0	522.8416	0	3267.76	3267.76		
157	0	0		0	522.9965	0	522.8416	0	3267.76	3267.76		
158	0	0		0	522.9707	0	522.8416	0	3267.76	3267.76		
159	0	0		0	522.9491	0	522.8416	0	3267.761	3267.761		
160	0	0		0	522.9312	0	522.8416	0	3267.76	3267.76		

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1"	"relative production (Dp1*/Dp 1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1 cost (cBC1)"	"total base employee 1 cost (cBC1)"
1	154.7151	160	-1.82863	0	3.127651	3.127651	1	2.828634	1	15046000	7266000	6224000
2	209.5785		-0.52278		1.747998	1.747998		1.522784		15046000	7266000	6224000
3	235.7058		-0.15265		1.343657	1.343657		1.152653		15046000	7266000	6224000
4	249.2061		-0.00131		1.175753	1.175753		1.001311		15046000	7266000	6224000
5	256.506		0.071278		1.094596	1.094596		0.928722		15046000	7266000	6224000
6	260.55		0.108973		1.052278	1.052278		0.891027		15046000	7266000	6224000
7	262.8202		0.129389		1.029307	1.029307		0.870611		15046000	7266000	6224000
8	264.1039		0.140705		1.01656	1.01656		0.859295		15046000	7266000	6224000
9	264.8329		0.147057		1.009399	1.009399		0.852943		15046000	7266000	6224000
10	265.2477		0.150649		1.005348	1.005348		0.849351		15046000	7266000	6224000
11	265.4841		0.152688		1.003047	1.003047		0.847312		15046000	7266000	6224000
12	265.619		0.153849		1.001738	1.001738		0.846151		15046000	7266000	6224000
13	265.6959		0.154511		1.104187	1.086377		0.845489		15046000	7266000	6224000
14	269.5209		0.192052		1.06207	1.051063		0.807948		15046000	7266000	6224000
15	271.8147		0.213886		1.041474	1.033721		0.786114		15046000	7266000	6224000
16	273.3423		0.228234		1.031084	1.024934		0.771766		15046000	7266000	6224000
17	274.4783		0.238848		1.025769	1.020375		0.761152		15046000	7266000	6224000
18	275.4104		0.247552		1.02301	1.017928		0.752448		15046000	7266000	6224000
19	276.2333		0.255247		1.021541	1.016538		0.744753		15046000	7266000	6224000
20	276.9946		0.262383		1.020724	1.015678		0.737617		15046000	7266000	6224000
21	277.7184		0.269187		1.020234	1.015085		0.730813		15046000	7266000	6224000
22	278.4166		0.275771		1.019907	1.014629		0.724229		15046000	7266000	6224000
23	279.0954		0.282193		1.019661	1.014244		0.717807		15046000	7266000	6224000
24	279.758		0.288481		1.019456	1.013899		0.711519		15046000	7266000	6224000
25	280.406		0.294651		1.038973	1.291786		0.705349		15046000	7266000	6224000
26	294.0424		0.310723		1.019114	1.528635		0.689277		15046000	7266000	6224000
27	319.9493		0.32433		1.009467	1.741196		0.67567		15046000	7266000	6224000
28	359.4734		0.338746		1.004711	1.907211		0.661254		15046000	7266000	6224000
29	413.8265		0.355422		1.00235	2.009568		0.644578		15046000	7266000	6224000
30	483.4575		0.37468		1.001174	2.039596		0.62532		15046000	7266000	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1"	"relative production (Dp1*/Dp 1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1 cost (cBC1)"	"total base employee 1 cost (cBC1)"
31	567.2242		0.395991		1.000587	1.998811		0.604009		15046000	7266000	6224000
32	661.6492		0.418178		1.000293	1.897889		0.581822		15046000	7266000	6224000
33	760.6638		0.439692		1.000147	1.753089		0.560308		15046000	7266000	6224000
34	856.1383		0.458957		1.000073	1.581921		0.541043		15046000	7266000	6224000
35	939.1725		0.474656		1.000037	1.400043		0.525344		15046000	7266000	6224000
36	1001.791		0.485903		1.000018	1.220122		0.514097		15046000	7266000	6224000
37	1038.543		0.492282		1.000009	1.052241		0.507718		15046000	7266000	6224000
38	1047.586		0.493828		0.887192	0.950117		0.506172		15046000	7266000	6224000
39	1038.876		0.473036		0.904386	0.956736		0.526964		15046000	7266000	6224000
40	1031.385		0.455032		0.970498	0.987422		0.544968		15046000	7266000	6224000
41	1029.223		0.449514		1.005763	1.002365		0.550486		15046000	7266000	6224000
42	1029.629		0.450583		1.02314	1.009248		0.549417		15046000	7266000	6224000
43	1031.216		0.454835		1.031109	1.012184		0.545165		15046000	7266000	6224000
44	1033.31		0.460501		1.034458	1.013268		0.539499		15046000	7266000	6224000
45	1035.595		0.466721		1.035641	1.013513		0.533279		15046000	7266000	6224000
46	1037.927		0.4731		1.035844	1.013393		0.5269		15046000	7266000	6224000
47	1040.244		0.47946		1.035621	1.013122		0.52054		15046000	7266000	6224000
48	1042.519		0.485728		1.022174	1.017515		0.514272		15046000	7266000	6224000
49	1045.562		0.489899		1.010965	1.119197		0.510101		15046000	7266000	6224000
50	1066.334		0.49524		1.005453	1.219098		0.50476		15046000	7266000	6224000
51	1105.272		0.502608		1.002719	1.302669		0.497392		15046000	7266000	6224000
52	1161.027		0.512024		1.001358	1.35905		0.487976		15046000	7266000	6224000
53	1230.505		0.522974		1.000678	1.382726		0.477026		15046000	7266000	6224000
54	1308.996		0.534651		1.000339	1.373703		0.465349		15046000	7266000	6224000
55	1390.526		0.546141		1.00017	1.336411		0.453859		15046000	7266000	6224000
56	1468.49		0.556591		1.000085	1.27802		0.443409		15046000	7266000	6224000
57	1536.535		0.565318		1.000042	1.206829		0.434682		15046000	7266000	6224000
58	1589.502		0.571874		1.000021	1.131148		0.428126		15046000	7266000	6224000
59	1624.245		0.576068		1.000011	1.058681		0.423932		15046000	7266000	6224000
60	1640.131		0.577958		0.993253	0.998122		0.422042		15046000	7266000	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1"	"relative production (Dp1*/Dp 1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1 cost (cBC1)"	"total base employee 1 cost (cBC1)"
61	1639.617		0.577127		0.924652	0.976949		0.422873		15046000	7266000	6224000
62	1633.318		0.567578		0.987556	0.996419		0.432422		15046000	7266000	6224000
63	1632.343		0.566023		1.017707	1.004921		0.433977		15046000	7266000	6224000
64	1633.682		0.568213		1.030634	1.008334		0.431787		15046000	7266000	6224000
65	1635.951		0.571974		1.024303	1.012542		0.428026		15046000	7266000	6224000
66	1639.371		0.575147		1.012006	1.025206		0.424853		15046000	7266000	6224000
67	1646.258		0.577332		1.005967	1.047726		0.422668		15046000	7266000	6224000
68	1659.353		0.579553		1.002975	1.075981		0.420447		15046000	7266000	6224000
69	1680.366		0.582339		1.001485	1.105451		0.417661		15046000	7266000	6224000
70	1709.899		0.585897		1.000742	1.131742		0.414103		15046000	7266000	6224000
71	1747.443		0.590212		1.000371	1.151212		0.409788		15046000	7266000	6224000
72	1791.482		0.595108		1.000185	1.161463		0.404892		15046000	7266000	6224000
73	1839.692		0.600313		1.000093	1.161595		0.399687		15046000	7266000	6224000
74	1889.239		0.605514		1.000046	1.152162		0.394486		15046000	7266000	6224000
75	1937.151		0.610413		1.000023	1.13492		0.389587		15046000	7266000	6224000
76	1980.711		0.61476		1.000012	1.112444		0.38524		15046000	7266000	6224000
77	2017.831		0.618388		1.000006	1.087729		0.381612		15046000	7266000	6224000
78	2047.334		0.621223		1.000003	1.063818		0.378777		15046000	7266000	6224000
79	2069.11		0.623288		1.000002	1.043482		0.376712		15046000	7266000	6224000
80	2084.105		0.624697		1.000001	1.028952		0.375303		15046000	7266000	6224000
81	2094.162		0.625637		1	1.021693		0.374363		15046000	7266000	6224000
82	2101.733		0.626341		1	1.02224		0.373659		15046000	7266000	6224000
83	2109.524		0.627062		1	1.030112		0.372938		15046000	7266000	6224000
84	2120.111		0.628038		1	1.043849		0.371962		15046000	7266000	6224000
85	2135.605		0.629457		1	1.061204		0.370542		15046000	7266000	6224000
86	2157.389		0.631435		1	1.07947		0.368565		15046000	7266000	6224000
87	2185.964		0.633997		1	1.095912		0.366003		15046000	7266000	6224000
88	2220.907		0.637082		1	1.108197		0.362918		15046000	7266000	6224000
89	2260.957		0.640554		1	1.114735		0.359446		15046000	7266000	6224000
90	2304.192		0.644229		1	1.114871		0.355771		15046000	7266000	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1"	"relative production (Dp1*/Dp1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1 cost (cBC1)"	"total base employee 1 cost (cBC1)"
91	2348.306		0.647901		1	1.108895		0.352099		15046000	7266000	6224000
92	2390.925		0.651378		1	1.097909		0.348622		15046000	7266000	6224000
93	2429.941		0.654502		1	1.083599		0.345498		15046000	7266000	6224000
94	2463.798		0.657167		1	1.067964		0.342833		15046000	7266000	6224000
95	2491.706		0.659333		1	1.053047		0.340667		15046000	7266000	6224000
96	2513.736		0.661024		1	1.040688		0.338976		15046000	7266000	6224000
97	2530.782		0.662321		1	1.03232		0.337679		15046000	7266000	6224000
98	2544.415		0.663351		1	1.028804		0.336649		15046000	7266000	6224000
99	2556.63		0.664268		1	1.030327		0.335732		15046000	7266000	6224000
100	2569.552		0.665234		1	1.036384		0.334766		15046000	7266000	6224000
101	2585.134		0.66639		1	1.045842		0.33361		15046000	7266000	6224000
102	2604.885		0.667845		1	1.057119		0.332155		15046000	7266000	6224000
103	2629.683		0.669653		1	1.06842		0.330347		15046000	7266000	6224000
104	2659.67		0.671814		1	1.078029		0.328186		15046000	7266000	6224000
105	2694.259		0.674272		1	1.084567		0.325728		15046000	7266000	6224000
106	2732.233		0.676928		1	1.087188		0.323072		15046000	7266000	6224000
107	2771.937		0.679659		1	1.085668		0.320341		15046000	7266000	6224000
108	2811.514		0.682335		1	1.08039		0.317665		15046000	7266000	6224000
109	2849.184		0.684842		1	1.072239		0.315158		15046000	7266000	6224000
110	2883.488		0.68709		1	1.06244		0.31291		15046000	7266000	6224000
111	2913.495		0.689031		1	1.052367		0.310969		15046000	7266000	6224000
112	2938.924		0.690657		1	1.043358		0.309343		15046000	7266000	6224000
113	2960.162		0.692002		1	1.03654		0.307998		15046000	7266000	6224000
114	2978.189		0.693134		1	1.032694		0.306866		15046000	7266000	6224000
115	2994.417		0.694146		1	1.032163		0.305854		15046000	7266000	6224000
116	3010.469		0.695141		1	1.034808		0.304859		15046000	7266000	6224000
117	3027.934		0.696216		1	1.040045		0.303784		15046000	7266000	6224000
118	3048.143		0.69745		1	1.046929		0.30255		15046000	7266000	6224000
119	3071.983		0.698894		1	1.054311		0.301106		15046000	7266000	6224000
120	3099.791		0.70056		1	1.061018		0.29944		15046000	7266000	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1"	"relative production (Dp1*/Dp 1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1 cost (cBC1)"	"total base employee 1 cost (cBC1)"
121	3131.314		0.702427		1	1.066034		0.297573		15046000	7266000	6224000
122	3165.777		0.704442		1	1.068649		0.295558		15046000	7266000	6224000
123	3201.998		0.70653		0.098666	0.921351		0.29347		15046000	7266000	6224000
124	3160.025		0.815528		0	1.10536		0.184472		7780000	0	6224000
125	3215.516		0.792214		0	1.116624		0.207786		7780000	0	6224000
126	3278.017		0.780373		0	1.106821		0.219627		7780000	0	6224000
127	3336.377		0.775699		0	1.079504		0.224301		7780000	0	6224000
128	3380.586		0.774275		0	1.040625		0.225725		7780000	0	6224000
129	3403.475		0.773608		0	0.997155		0.226392		7780000	0	6224000
130	3401.861		0.772407		0	0.958906		0.227593		7780000	0	6224000
131	3378.562		0.770286		0	0.967281		0.229714		7780000	0	6224000
132	3360.138		0.768746		0	0.972505		0.231254		7780000	0	6224000
133	3344.74		0.76754		0	0.976985		0.232461		7780000	0	6224000
134	3331.91		0.766573		0	0.980747		0.233427		7780000	0	6224000
135	3321.218		0.765785		0	0.983904		0.234215		7780000	0	6224000
136	3312.309		0.765137		0	0.986551		0.234863		7780000	0	6224000
137	3304.884		0.7646		0	0.988767		0.2354		7780000	0	6224000
138	3298.697		0.764154		0	0.990622		0.235846		7780000	0	6224000
139	3293.541		0.763782		0	0.992172		0.236218		7780000	0	6224000
140	3289.244		0.763473		0	0.993469		0.236527		7780000	0	6224000
141	3285.663		0.763214		0	0.994551		0.236786		7780000	0	6224000
142	3282.679		0.762999		0	0.995455		0.237001		7780000	0	6224000
143	3280.193		0.762819		0	0.99621		0.237181		7780000	0	6224000
144	3278.121		0.762669		0	0.996839		0.237331		7780000	0	6224000
145	3276.394		0.762544		0	0.997365		0.237456		7780000	0	6224000
146	3274.955		0.762439		0	0.997803		0.237561		7780000	0	6224000
147	3273.756		0.762352		0	0.998169		0.237648		7780000	0	6224000
148	3272.756		0.76228		0	0.998473		0.23772		7780000	0	6224000
149	3271.924		0.762219		0	0.998728		0.237781		7780000	0	6224000
150	3271.23		0.762169		0	0.998939		0.237831		7780000	0	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"Employees 1 (E1)"	FINAL TIME	"improvement factor (if1)"	INITIAL TIME	"relative new production DPN1/DP R1 "	"relative production (Dp1*/Dp 1)"	SAVEPE R	"technical efficiency 1 (TE1)"	TIME STEP	"total base 1 cost (tBc1)"	"total base contractor 1cost (cBC1)"	"total base employee 1 cost (cBC1)"
151	3270.651		0.762127		0	0.999116		0.237873		7780000	0	6224000
152	3270.169		0.762092		0	0.999263		0.237908		7780000	0	6224000
153	3269.768		0.762063		0	0.999386		0.237937		7780000	0	6224000
154	3269.433		0.762038		0	0.999488		0.237962		7780000	0	6224000
155	3269.154		0.762018		0	0.999574		0.237982		7780000	0	6224000
156	3268.922		0.762001		0	0.999645		0.237999		7780000	0	6224000
157	3268.728		0.761987		0	0.999704		0.238013		7780000	0	6224000
158	3268.567		0.761975		0	0.999753		0.238025		7780000	0	6224000
159	3268.432		0.761965		0	0.999794		0.238035		7780000	0	6224000
160	3268.32		0.761957		0	0.999829		0.238043		7780000	0	6224000

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
1	1556000	3772024	1237721	5319176	309430.3	6	0.5	154.7151
2	1556000	7784800	1676628	9880585	419156.9			209.5785
3	1556000	10696308	1885647	13053367	471411.7			235.7058
4	1556000	12534236	1993649	15026297	498412.3			249.2061
5	1556000	13635703	2052048	16200763	513011.9			256.506
6	1556000	14280641	2084400	16886140	521100			260.55
7	1556000	14653922	2102561	17282124	525640.3			262.8202
8	1556000	14868655	2112831	17509694	528207.8			264.1039
9	1556000	14991768	2118663	17640096	529665.7			264.8329
10	1556000	15062223	2121982	17714700	530495.4			265.2477
11	1556000	15102498	2123873	17757340	530968.3			265.4841
12	1556000	15125510	2124952	17781700	531237.9			265.619
13	1556000	15138652	2125567	17795612	531391.8			265.6959
14	1556000	15927276	2156167	18622486	539041.8			269.5209
15	1556000	16421580	2174517	19139728	543629.3			271.8147
16	1556000	16762115	2186739	19495538	546684.7			273.3423
17	1556000	17022634	2195826	19767416	548956.6			274.4783
18	1556000	17241960	2203283	19996064	550820.8			275.4104
19	1556000	17440326	2209866	20202658	552466.6			276.2333
20	1556000	17628170	2215957	20398118	553989.3			276.9946
21	1556000	17810836	2221747	20588020	555436.8			277.7184
22	1556000	17991028	2227333	20775194	556833.2			278.4166
23	1556000	18170098	2232763	20961052	558190.8			279.0954
24	1556000	18348720	2238064	21146300	559515.9			279.758
25	1556000	18527220	2243248	21331280	560812			280.406
26	1556000	18888250	2352339	21828674	588084.8			294.0424
27	1556000	19068764	2559594	22268256	639898.6			319.9493
28	1556000	19159020	2875788	22753754	718946.9			359.4734
29	1556000	19204150	3310612	23342414	827652.9			413.8265
30	1556000	19226714	3867660	24061288	966915			483.4575

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
31	1556000	19237996	4537794	24910238	1134449			567.2242
32	1556000	19243638	5293194	25860130	1323298			661.6492
33	1556000	19246458	6085310	26853096	1521328			760.6638
34	1556000	19247868	6849107	27809250	1712277			856.1383
35	1556000	19248572	7513380	28640296	1878345			939.1725
36	1556000	19248926	8014326	29266834	2003581			1001.791
37	1556000	19249104	8308348	29634538	2077087			1038.543
38	1556000	19249192	8380688	29725052	2095172			1047.586
39	1556000	18163462	8311011	28552224	2077753			1038.876
40	1556000	17295120	8251083	27608974	2062771			1031.385
41	1556000	17040002	8233786	27332234	2058447			1029.223
42	1556000	17089102	8237031	27385390	2059258			1029.629
43	1556000	17286824	8249728	27598984	2062432			1031.216
44	1556000	17555714	8266481	27888814	2066620			1033.31
45	1556000	17858182	8284760	28214132	2071190			1035.595
46	1556000	18176422	8303418	28555694	2075855			1037.927
47	1556000	18502182	8321952	28904622	2080488			1040.244
48	1556000	18831712	8340153	29256902	2085038			1042.519
49	1556000	19040496	8364498	29496118	2091125			1045.562
50	1556000	19144888	8530669	29808224	2132667			1066.334
51	1556000	19197084	8842178	30249806	2210545			1105.272
52	1556000	19223180	9288220	30833456	2322055			1161.027
53	1556000	19236230	9844042	31541282	2461011			1230.505
54	1556000	19242754	10471971	32332716	2617993			1308.996
55	1556000	19246014	11124205	33151272	2781051			1390.526
56	1556000	19247646	11747924	33932552	2936981			1468.49
57	1556000	19248462	12292283	34613816	3073071			1536.535
58	1556000	19248870	12716017	35143892	3179004			1589.502
59	1556000	19249074	12993963	35491528	3248491			1624.245
60	1556000	19249176	13121045	35650480	3280261			1640.131

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
61	1556000	19184242	13116938	35580416	3279235			1639.617
62	1556000	18461496	13066546	34794680	3266637			1633.318
63	1556000	18346626	13058747	34670060	3264687			1632.343
64	1556000	18509058	13069458	34845880	3267365			1633.682
65	1556000	18792558	13087610	35152072	3271903			1635.951
66	1556000	19020918	13114968	35414628	3278742			1639.371
67	1556000	19135098	13170064	35597680	3292516			1646.258
68	1556000	19192188	13274823	35785716	3318706			1659.353
69	1556000	19220734	13442929	36024396	3360732			1680.366
70	1556000	19235006	13679190	36333992	3419798			1709.899
71	1556000	19242142	13979546	36716576	3494887			1747.443
72	1556000	19245710	14331857	37160532	3582964			1791.482
73	1556000	19247494	14717534	37644412	3679384			1839.692
74	1556000	19248386	15113913	38140780	3778478			1889.239
75	1556000	19248832	15497207	38620340	3874302			1937.151
76	1556000	19249054	15845687	39056160	3961422			1980.711
77	1556000	19249166	16142645	39427472	4035661			2017.831
78	1556000	19249222	16378674	39722564	4094669			2047.334
79	1556000	19249250	16552883	39940352	4138221			2069.11
80	1556000	19249266	16672842	40090320	4168211			2084.105
81	1556000	19249272	16753293	40190888	4188323			2094.162
82	1556000	19249276	16813866	40266612	4203467			2101.733
83	1556000	19249276	16876190	40344512	4219048			2109.524
84	1556000	19249276	16960886	40450380	4240222			2120.111
85	1556000	19249276	17084840	40605328	4271210			2135.605
86	1556000	19249276	17259116	40823172	4314779			2157.389
87	1556000	19249276	17487710	41108912	4371928			2185.964
88	1556000	19249276	17767258	41458352	4441815			2220.907
89	1556000	19249276	18087652	41858840	4521913			2260.957
90	1556000	19249276	18433534	42291192	4608384			2304.192

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
91	1556000	19249276	18786446	42732332	4696612			2348.306
92	1556000	19249276	19127402	43158532	4781851			2390.925
93	1556000	19249276	19439528	43548688	4859882			2429.941
94	1556000	19249276	19710382	43887252	4927596			2463.798
95	1556000	19249276	19933648	44166336	4983412			2491.706
96	1556000	19249276	20109884	44386632	5027471			2513.736
97	1556000	19249276	20246258	44557100	5061565			2530.782
98	1556000	19249276	20355318	44693420	5088830			2544.415
99	1556000	19249276	20453038	44815572	5113260			2556.63
100	1556000	19249276	20556418	44944800	5139105			2569.552
101	1556000	19249276	20681070	45100612	5170268			2585.134
102	1556000	19249276	20839082	45298132	5209771			2604.885
103	1556000	19249276	21037464	45546104	5259366			2629.683
104	1556000	19249276	21277364	45845980	5319341			2659.67
105	1556000	19249276	21554072	46191864	5388518			2694.259
106	1556000	19249276	21857868	46571612	5464467			2732.233
107	1556000	19249276	22175492	46968640	5543873			2771.937
108	1556000	19249276	22492116	47364420	5623029			2811.514
109	1556000	19249276	22793472	47741116	5698368			2849.184
110	1556000	19249276	23067902	48084152	5766976			2883.488
111	1556000	19249276	23307962	48384232	5826991			2913.495
112	1556000	19249276	23511392	48638516	5877848			2938.924
113	1556000	19249276	23681292	48850892	5920323			2960.162
114	1556000	19249276	23825512	49031168	5956378			2978.189
115	1556000	19249276	23955340	49193452	5988835			2994.417
116	1556000	19249276	24083752	49353968	6020938			3010.469
117	1556000	19249276	24223470	49528612	6055868			3027.934
118	1556000	19249276	24385140	49730700	6096285			3048.143
119	1556000	19249276	24575868	49969112	6143967			3071.983
120	1556000	19249276	24798324	50247180	6199581			3099.791

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
121	1556000	19249276	25050516	50562420	6262629			3131.314
122	1556000	19249276	25326212	50907040	6331553			3165.777
123	1556000	19249276	25615984	51269256	6403996			3201.998
124	1556000	10574266	25280204	42174524	6320051			3160.025
125	1556000	5287133	25724124	37442288	6431031			3215.516
126	1556000	2643567	26224132	35423732	6556033			3278.017
127	1556000	1321783	26691014	34685552	6672754			3336.377
128	1556000	660891.6	27044686	34466748	6761172			3380.586
129	1556000	330445.8	27227802	34365200	6806951			3403.475
130	1556000	165222.9	27214890	34183836	6803723			3401.861
131	1556000	82611.45	27028494	33868228	6757124			3378.562
132	1556000	41305.73	26881102	33642684	6720276			3360.138
133	1556000	20652.86	26757918	33468050	6689480			3344.74
134	1556000	10326.43	26655280	33329426	6663820			3331.91
135	1556000	5163.216	26569746	33217346	6642437			3321.218
136	1556000	2581.608	26498468	33125668	6624617			3312.309
137	1556000	1290.804	26439070	33050128	6609768			3304.884
138	1556000	645.402	26389572	32987612	6597393			3298.697
139	1556000	322.701	26348324	32935728	6587081			3293.541
140	1556000	161.3505	26313950	32892600	6578488			3289.244
141	1556000	80.67525	26285304	32856710	6571326			3285.663
142	1556000	40.33762	26261434	32826832	6565359			3282.679
143	1556000	20.16881	26241542	32801948	6560386			3280.193
144	1556000	10.08441	26224964	32781216	6556241			3278.121
145	1556000	5.042203	26211150	32763944	6552788			3276.394
146	1556000	2.521101	26199638	32749550	6549910			3274.955
147	1556000	1.260551	26190044	32737556	6547511			3273.756
148	1556000	0.630275	26182050	32727562	6545513			3272.756
149	1556000	0.315138	26175388	32719236	6543847			3271.924
150	1556000	0.157569	26169838	32712298	6542460			3271.23

APPENDIX E
IMPLEMENTATION MODEL OUTPUT RESULTS

E.1 Scenario 1 Output Results

Time	"total base workstation 1 cost (cBC1)"	"total contractor 1 cost (cC1)"	"total employee 1 cost (cE1)"	"total optimized 1 cost (tc1)"	"total workstation 1 cost (cW1)"	"workstation 1 adjustment time (Wat1)"	"workstation 1 production exponent (ewp1)"	"Workstations 1 (W1)"
151	1556000	0.078784	26165210	32706512	6541303			3270.651
152	1556000	0.039392	26161356	32701696	6540339			3270.169
153	1556000	0.019696	26158142	32697678	6539536			3269.768
154	1556000	0.009848	26155464	32694330	6538866			3269.433
155	1556000	0.004924	26153234	32691542	6538309			3269.154
156	1556000	0.002462	26151376	32689220	6537844			3268.922
157	1556000	0.001231	26149826	32687282	6537457			3268.728
158	1556000	0.000616	26148536	32685670	6537134			3268.567
159	1556000	0.000308	26147458	32684322	6536865			3268.432
160	1556000	0.000154	26146562	32683202	6536641			3268.32