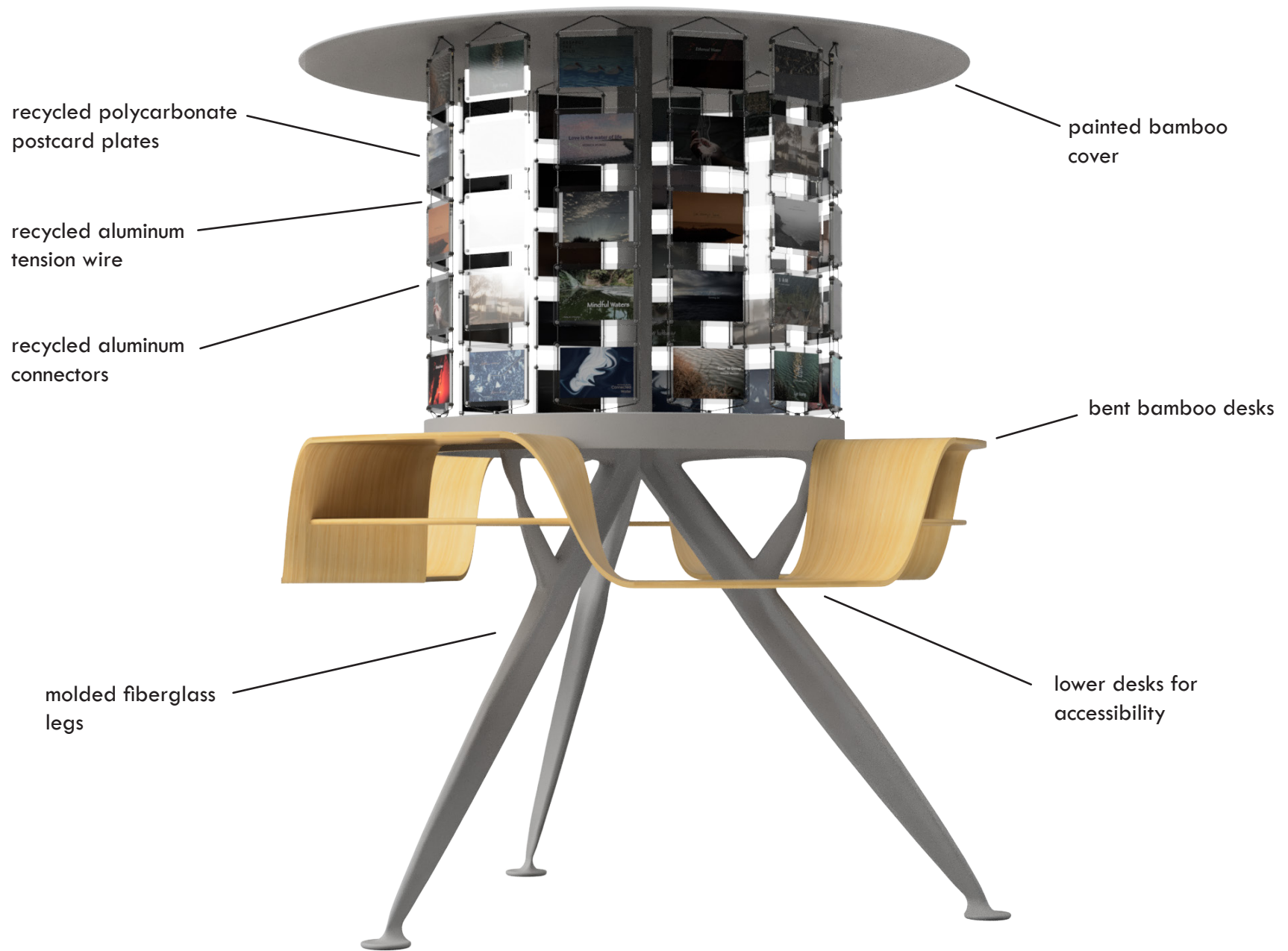


# kiosk redesign

john choi



recycled polycarbonate  
postcard plates

recycled aluminum  
tension wire

recycled aluminum  
connectors

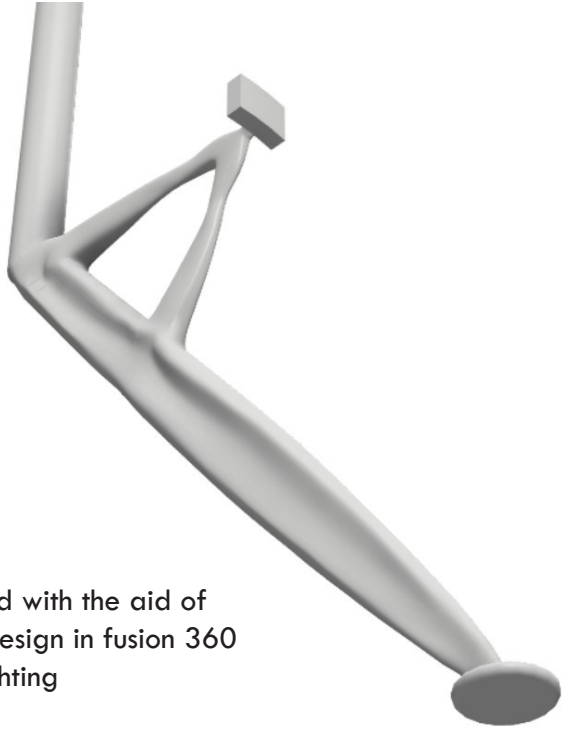
painted bamboo  
cover

bent bamboo desks

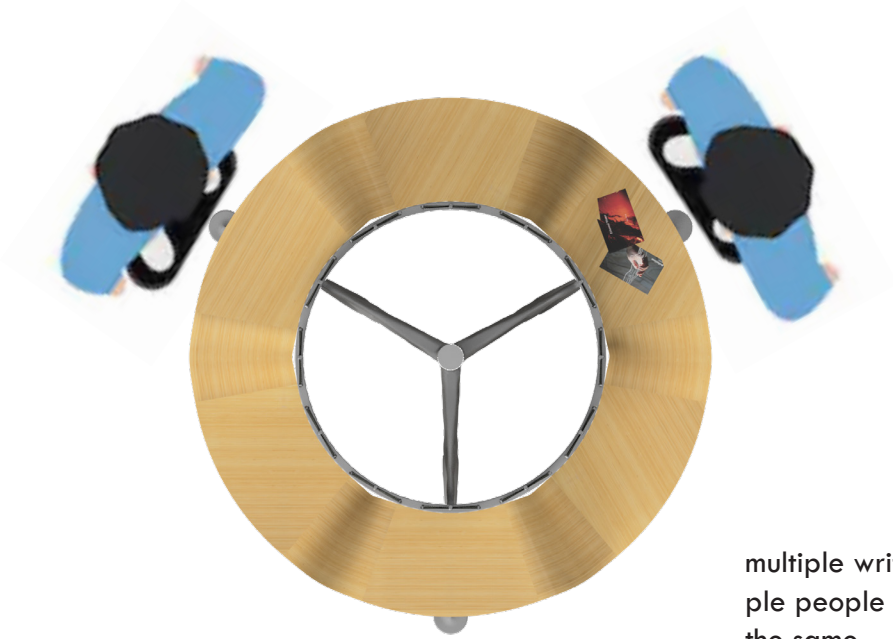
molded fiberglass  
legs

lower desks for  
accessibility

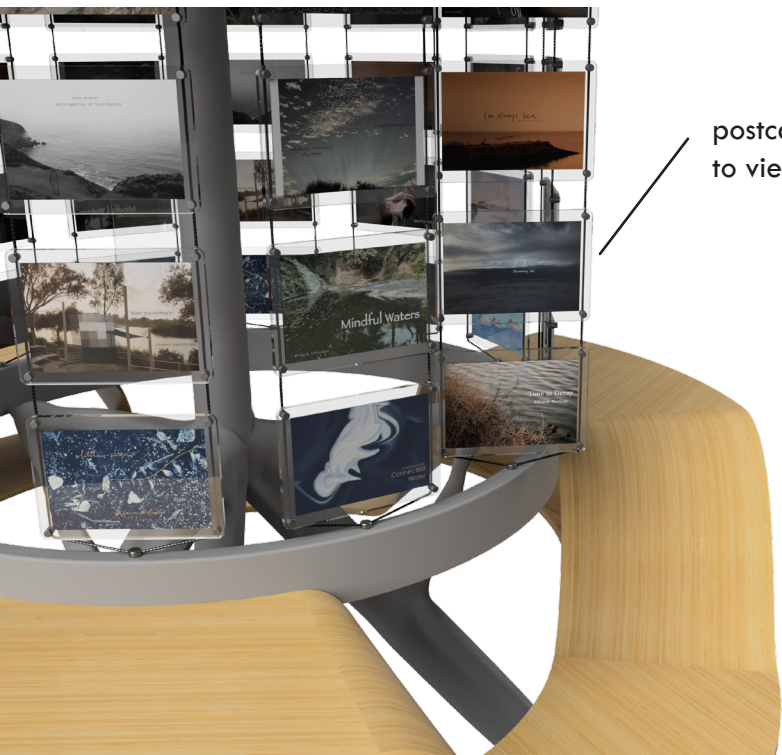
model link:  
<https://a360.co/3og5wy9>



legs designed with the aid of generative design in fusion 360 for lightweighting

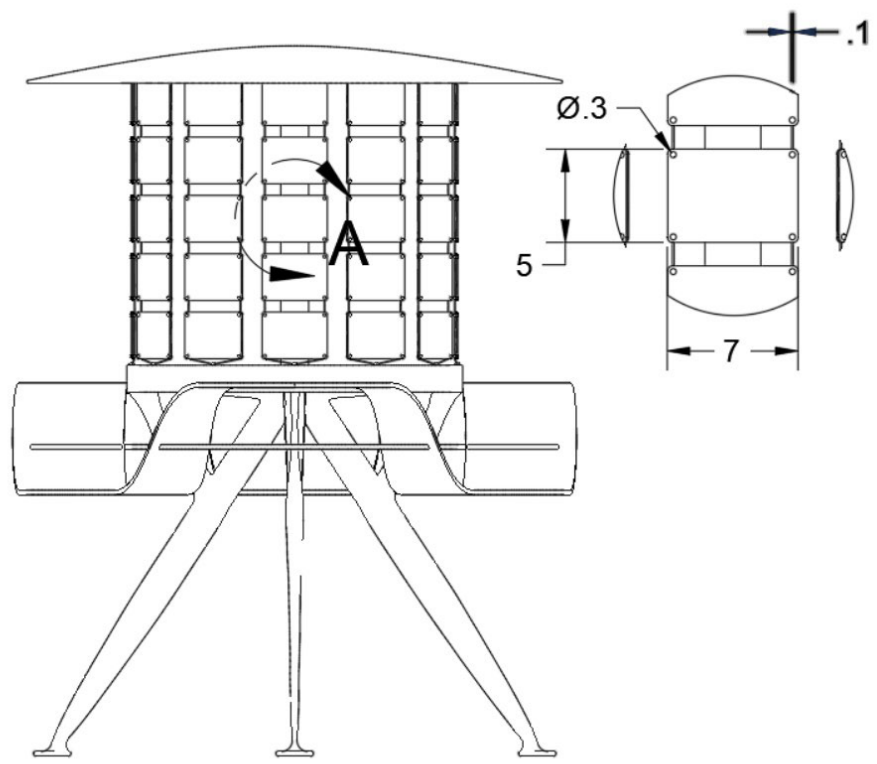
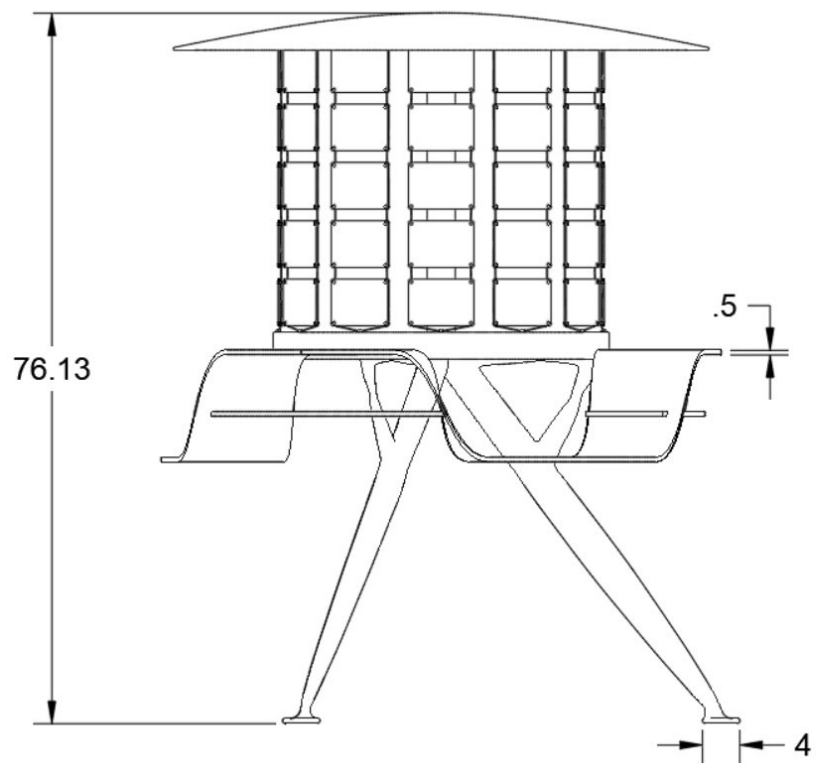
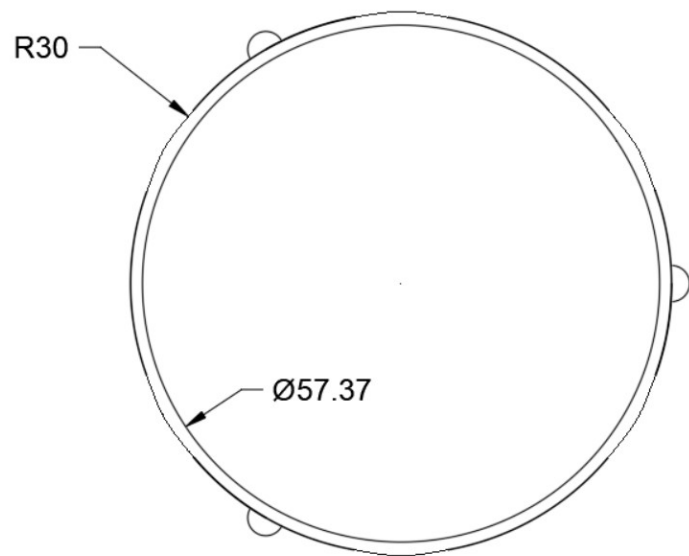


multiple writing areas so multiple people can use the kiosk at the same



postcard columns swivel to view the backside







**original environmental impact factor/hour: 0.103**

**areas of reduced impact factor:**

- wood changed to bamboo
- using fiberglass for frame opposed to steel
  - more lightweight and portable
- using recycled aluminum for the metal parts
- reduced overall weight



**redesigned environmental impact factor/hour: 0.047**

**sbom links:**

**original** - <https://docs.google.com/spreadsheets/d/1amh055eRulyFwcKejCXesCAD-AnWQhBWFaiUliqKiYE/edit?usp=sharing>

**redesign** - [https://docs.google.com/spreadsheets/d/1QpMJj4Yblt9l\\_Hd8q3jHPoVxqaUIaShLLMTD-M1qQW9Y/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1QpMJj4Yblt9l_Hd8q3jHPoVxqaUIaShLLMTD-M1qQW9Y/edit?usp=sharing)

Redesign Kiosk SBOM											
Notes-											
Parts are numbered on tear down reference sheet											
Part #	Part Name	Category	Amount	Unit	Pounds	Miles	OKFP	/unit	OIP	Part OPI Totals	
<b>Product</b>											
1	Legs	<b>Material</b>	Fiberglass	13607.8	grams	29.93716	N/A	1.8	per lb	53.886888	73.346042
		<b>Process</b>	Fiberglass Molding	13607.8	grams	29.93716	N/A		per lb	0	
		<b>End Of Life</b>	Controlled Landfill	13607.8	grams	29.93716	N/A	0.6	per lb	17.962296	
		<b>Transport</b>	Truck	13607.8	grams	29.93716	100	1	per ton-mile	1.496858	
		<b>Transport</b>			grams	0			per ton-mile	0	
2	Middle Post	<b>Material</b>	Fiberglass	4535.92	grams	9.979024	N/A	1.8	per lb	17.9622432	24.4486088
		<b>Process</b>	Fiberglass Molding	4535.92	grams	9.979024	N/A		per lb	0	
		<b>End Of Life</b>	Controlled Landfill	4535.92	grams	9.979024	N/A	0.6	per lb	5.9874144	
		<b>Transport</b>	Truck	4535.92	grams	9.979024	100	1	per ton-mile	0.4989512	
		<b>Transport</b>			grams	0			per ton-mile	0	
3	Top Cover	<b>Material</b>	Bamboo	22679.6	grams	49.89512	N/A	0.007	per lb	0.34926584	3.44276328
		<b>Process</b>	Wood Fabrication	22679.6	grams	49.89512	N/A		per lb	0	
		<b>End Of Life</b>	Controlled Incineration	22679.6	grams	49.89512	N/A	0.012	per lb	0.59874144	
		<b>Transport</b>	Truck	22679.6	grams	49.89512	100	1	per ton-mile	2.494756	
		<b>Transport</b>			grams	0			per ton-mile	0	
4	Table top	<b>Material</b>	Bamboo	49895.2	grams	109.76944	N/A	0.007	per lb	0.76838608	7.57409136
		<b>Process</b>	Wood FABrication	49895.2	grams	109.76944	N/A		per lb	0	
		<b>End Of Life</b>	Controlled Incineration	49895.2	grams	109.76944	N/A	0.012	per lb	1.31723328	
		<b>Transport</b>	Truck	49895.2	grams	109.76944	100	1	per ton-mile	5.488472	
		<b>Transport</b>			grams	0			per ton-mile	0	
5	Post Card Holders	<b>Material</b>	Recycled Polycarbonate	27215.5	grams	59.8741	N/A	2.1	per lb	125.73561	249.076256
		<b>Process</b>	Thermoforming	27215.5	grams	59.8741	N/A	1.4	per lb	83.82374	
		<b>End Of Life</b>	Controlled Landfill	27215.5	grams	59.8741	N/A	0.61	per lb	36.523201	
		<b>Transport</b>	Truck	27215.5	grams	59.8741	100	1	per ton-mile	2.993705	
		<b>Transport</b>			grams	0			per ton-mile	0	
6	Post Card Holder Bolts	<b>Material</b>	Recycled Aluminum	27215.5	grams	59.8741	N/A	0.55	per lb	32.930755	
		<b>Process</b>	Extrusion	27215.5	grams	59.8741	N/A	0.64	per lb	38.319424	
		<b>End Of Life</b>	Controlled Landfill	27215.5	grams	59.8741	N/A	0.39	per lb	23.350899	
		<b>Transport</b>	Truck	27215.5	grams	59.8741	100	1	per ton-mile	2.993705	

		<b>Transport</b>			grams	0			per ton-mile	0	
											97.594783
7	Tension Wire	<b>Material</b>	Recycled Aluminum	4535.92	grams	9.979024	N/A	0.55	per lb	5.4884632	
		<b>Process</b>	Cold Forging	4535.92	grams	9.979024	N/A	0.56	per lb	5.58825344	
		<b>End Of Life</b>	Controlled Landfill	4535.92	grams	9.979024	N/A	0.51	per lb	5.08930224	
		<b>Transport</b>	Truck	4535.92	grams	9.979024	100	1	per ton-mile	0.4989512	
		<b>Transport</b>			grams	0			per ton-mile	0	
											16.66497008
8		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
											0
9		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
											0
10		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
											0
11		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
											0
12		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
		<b>Transport</b>			grams	0			per ton-mile	0	
											0
13		<b>Material</b>			grams	0	N/A		per lb	0	
		<b>Process</b>			grams	0	N/A		per lb	0	
		<b>End Of Life</b>			grams	0	N/A		per lb	0	
		<b>Transport</b>			grams	0			per ton-mile	0	







								Processes	127.731417	
								End of Life	89.5118540	
								Transportation	16.9643496	
										470.5608464
								<b>Lifetime hours</b>		
								Wear-out Life	5	
								Hours used per year	2000	
								Total lifetime hours		10000
								<b>Impact /Hour</b>		<b>0.04705608464</b>

Original Kiosk SBOM											
Notes-											
Parts are numbered on tear down reference sheet											
Part #	Part Name	Category		Amount	Unit	Pounds	Miles	OKFP	/unit	OIP	Part OPI Totals
Product											
1	Wood Panels	<b>Material</b>	Painted Pine Wood	24548.419	grams	54.0065218	N/A	0.011	per lb	0.5940717398	
		<b>Process</b>	Planing, painting	24548.419	grams	54.0065218	N/A		per lb	0	
		<b>End Of Life</b>	Landfill	24548.419	grams	54.0065218	N/A	0.14	per lb	7.560913052	
		<b>Transport</b>	Truck	24548.419	grams	54.0065218	100	1	per ton-mile	2.70032609	
		<b>Transport</b>			grams	0			per ton-mile	0	10.85531088
2	Metal Name Board	<b>Material</b>	Stainless Steel	15875.7	grams	34.92654	N/A	13	per lb	454.04502	
		<b>Process</b>	Sheet Metal Fabrication	15875.7	grams	34.92654	N/A	1.1	per lb	38.419194	
		<b>End Of Life</b>	Recycled/Landfill	15875.7	grams	34.92654	N/A	0.51	per lb	17.8125354	
		<b>Transport</b>	Truck	15875.7	grams	34.92654	100	1	per ton-mile	1.746327	
		<b>Transport</b>			grams	0			per ton-mile	0	512.0230764
3	Metal Support	<b>Material</b>	Stainless Steel	3628.74	grams	7.983228	N/A	13	per lb	103.781964	
		<b>Process</b>	Sheet Metal Fabrication	3628.74	grams	7.983228	N/A	0.75	per lb	5.987421	
		<b>End Of Life</b>	Recycled/Landfill	3628.74	grams	7.983228	N/A	0.02	per lb	0.15966456	
		<b>Transport</b>	Truck	3628.74	grams	7.983228	100	1	per ton-mile	0.3991614	
		<b>Transport</b>			grams	0			per ton-mile	0	110.328211
4	Metal Frame	<b>Material</b>	Stainless Steel	56644.6152	grams	124.6181534	N/A	13	per lb	1620.035995	
		<b>Process</b>	Extrusion	56644.6152	grams	124.6181534	N/A	1.1	per lb	137.0799688	
		<b>End Of Life</b>	Recycled/Landfill	56644.6152	grams	124.6181534	N/A	0.51	per lb	63.55525825	
		<b>Transport</b>	Truck	56644.6152	grams	124.6181534	100	1	per ton-mile	6.230907672	
		<b>Transport</b>			grams	0			per ton-mile	0	1826.902129
5	Nuts	<b>Material</b>	Steel	2721.55	grams	5.98741	N/A	5.3	per lb	31.733273	
		<b>Process</b>	Steel Cold Forging	2721.55	grams	5.98741	N/A	0.56	per lb	3.3529496	
		<b>End Of Life</b>	Recycled/Landfill	2721.55	grams	5.98741	N/A	0.02	per lb	0.1197482	
		<b>Transport</b>	Truck	2721.55	grams	5.98741	100	1	per ton-mile	0.2993705	
		<b>Transport</b>			grams	0			per ton-mile	0	35.5053413
6	Bolts	<b>Material</b>	Steel	2721.55	grams	5.98741	N/A	5.3	per lb	31.733273	
		<b>Process</b>	Steel Cold Forging	2721.55	grams	5.98741	N/A	0.56	per lb	3.3529496	
		<b>End Of Life</b>	Recycled/Landfill	2721.55	grams	5.98741	N/A	0.02	per lb	0.1197482	
		<b>Transport</b>	Truck	2721.55	grams	5.98741	100	1	per ton-mile	0.2993705	
		<b>Transport</b>			grams	0			per ton-mile	0	35.5053413
7	Postcard Container Walls	<b>Material</b>	Wood(Pine)	21772.44	grams	47.899368	N/A	0.011	per lb	0.526893048	
		<b>Process</b>	Wood Fabrication	21772.44	grams	47.899368	N/A		per lb	0	
		<b>End Of Life</b>	Recycled/Landfill	21772.44	grams	47.899368	N/A	0.14	per lb	6.70591152	



15	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
16	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
17	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
<b>Packaging</b>						
18	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
19	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
20	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
21	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0
	Transport	grams	0		per ton-mile	0
	Transport	grams	0		per ton-mile	0
0						
22	Material	grams	0	N/A	per lb	0
	Process	grams	0	N/A	per lb	0
	End Of Life	grams	0	N/A	per lb	0

