

Project 09009 Wheelchair with One-Arm Operation

Needs Assessment

Primary Customer Needs:

One-arm compatibility

Durability

Fold-ability

Mobility

Reliability

Safety

Secondary Customer Needs:

Able to be easily reproduced in manufacturing environment

Able to use without assistance

Good style

Needs Hierarchy:

Need 1: Ease of Use

Need 1.1: Must be useable by persons with one arm

Need 1.2: Must be able to be folded for easy transport

Need 1.3: Must be easy to steer by user

Need 1.4: Must allow a second individual to push the wheelchair easily

Need 1.5: Must be able to set-up and use without assistance

Need 2: Safety

Need 2.1: Forces applied must be safe to user

Need 2.2: Must be durable

Need 2.3: Hand positioning for grips

Need 2.4: Pinch points for grips

Need 3: Economics

Need 3.1 Must be within budget of around \$1500

Need 3.2 Must be able to be easily reproduced in manufacturing environment

Need 4: Aesthetics

Need 4.1: Must have good style

Relative Importance of the Needs:

<u>Need</u>	<u>The Product</u>	<u>Needs To</u>	<u>Importance (Scale 1-10; 1 being Least Important; 10 being Most Important)</u>
1.1	1-Arm Wheelchair	1-Arm Compat.	10
1.2	1-Arm Wheelchair	Easily folded	10
1.3	1-Arm Wheelchair	Easily steered	10
1.4	1-Arm Wheelchair	Second user	6
1.5	1-Arm Wheelchair	Set-up	6
2.1	1-Arm Wheelchair	Safe forces	8
2.2	1-Arm Wheelchair	Durable	7
2.3	1-Arm Wheelchair	Positioning	5
2.4	1-Arm Wheelchair	Pinch points	7
3.1	1-Arm Wheelchair	Under budget	10
3.2	1-Arm Wheelchair	Reproducible	4
4.1	1-Arm Wheelchair	Good style	4