

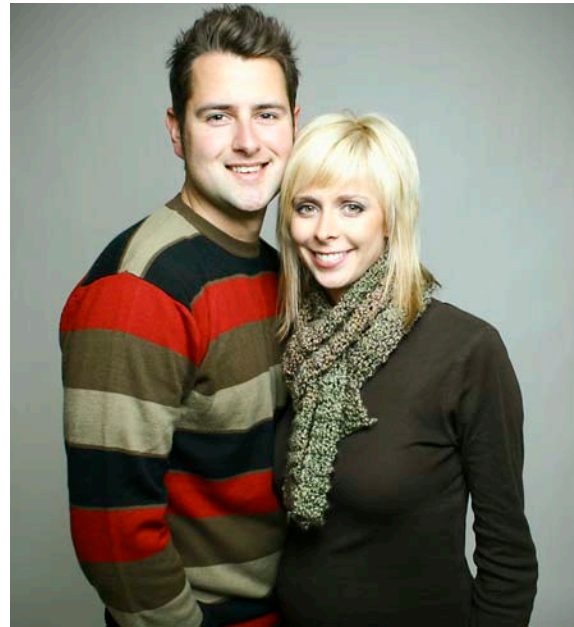
Transmit – Collapsible, dual use bicycle trailer + urban shopping cart designed for the carless urban dweller

Target Consumers

Charlie & Lisa

Meet: Charlie

Age: 32
Physical Therapist
Married with one on the way
Urban apartment dwellers
Dog owner
Home brewer
Bicycle commutes



Meet: Lisa

Age: 31
Photographer
Married with one on the way
Urban apartment dwellers
Dog owner
Hobbyist gardener
Loves walking
Shares the family car with Charlie

Charlie is a happy man. He's married to his college sweetheart Lisa and they're soon expecting their first child. He enjoys his job as a physical therapist and is experimenting integrating their dog, Lola, into therapy. His life is a busy one filled with baby proofing, dog food, home brewing supplies and groceries.

Charlie and Lisa only live a few miles from his job, grocery stores and local shops and he would love to bicycle commute more often, but always finds that his old messenger bag doesn't comfortably hold much more than his change of clothes and laptop. There always seems to be something extra he needs to bring to work with him or something to pick up on the way home, and while he would love

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to ditch the car and the parking meters more often, Charlie ends up using it more often than he would like.

After graduating from a local arts college, Lisa opened her own photography studio near the apartment Charlie and she rent. While she has her studio space for photo shoots, Lisa particularly likes and specializes in shooting on location as she finds that the people she is shooting are more comfortable outside the bright lights and confined space of the studio. Still, getting the light right can be a challenge and she would like to tote around a few fill lights and tripods to location but not having an assistant often means she leaves them at the studio with no way to easily carry them with her along with the camera body and litany of lenses the job requires.

Lisa never caught the bike-commuting bug like Charlie did, but she still keeps active, trying to get a walk in daily. Conveniently with her studio so close to home and only a few blocks more to a shopping and garden center and local shops, she often will walk to work and then over to the shopping center. In the spring she especially spends more time at the garden center and ends up picking up more potting soil, fertilizer and seedlings than she can carry. Just like Charlie, she often ends up abandoning her daily walks and taking the car when he doesn't need it to take Lola to work with him.

Charlie recently began looking for a better way to bike commute, visiting local bike shops and browsing the internet for a solution to ditching the car more often for his in town errands and commute. He had seen some trailers that he felt might work but they were all pigeonholed into only being used attached to a bicycle, and he felt that he wanted to get some more use out of his investment and possibly be able to use it as his shopping cart. When he looked for personal shopping carts he found some interesting options that he thought Lisa might like for her walks to work and back but they were all quite small and he wasn't sure if she could fit a bag of mulch, which seemed to be her favorite item to pick up at the garden center, and for his own use they didn't attach to his bicycle.

Lisa had also been looking for a solution to her issues and had decided to look for a way to bring more of her equipment with her in the field when shooting and get her cumbersome shoulder camera bag off her shoulder. She had seen some similar trailers and personal carts to what Charlie had seen but was disappointed in the small cargo capacity of what seemed to be carts only for light trips to the grocery and not adept at picking up her mulch much less camera equipment.

Charlie however lucked out and found Transmit, billed as an urban trailer. This sounded interesting, designed both as a bicycle trailer and personal cart he

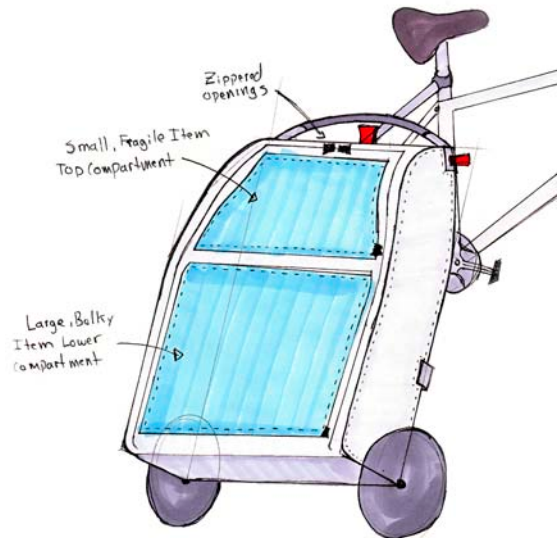
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could see himself easily commuting to work, getting his bag off of his back, and having room to spare to stop at the store on the way home and pick up dog food for Lola and some produce for dinner. Excitedly showing Transmit to Lisa, explaining about how he could leave the car at home more often so she could use it, Lisa noticed that Transmit might work for her uses as well. With a voluminous lower compartment that she could easily store taller tripods and her camera bag and a smaller, secure upper compartment for her flashes and fill lights, even her phone and wallet that she used to stuff in her camera bag had a place. And if Transmit could carry a bag of dog food, it could easily carry her mulch and fertilizer every spring.

Transmit Design + Beginnings

The genesis for Transmit began as a desire to finally design and build a bicycle related product. Senior thesis became the perfect avenue to both pursue my interest in the bicycle world and strengthen my portfolio but also to endeavor a project of larger scope than ever previously attainable because of time, classes or monetary limitations.

Setting out on designing a bicycle trailer I knew that I wanted to aim my design towards the urban centric bicyclist as the market currently is inundated with flatbed trailers which while adept at carrying large and heavy loads are long, wide and large posing issues when used in a cramped urban environment of cars, busses, pedestrians and small living spaces. The few trailers that were designed with the urban market in mind all addressed these issues but gave up cargo space to do so. Looking at what these urban trailers did well; foldable to accommodate small living spaces, multipurpose design to eliminate needs for other trailers or carts, skinny to fit through tight spaces, and designed around adding more cargo capacity for the car-less (or nearly car-less) urbanite.



Early Sketch of Trailer Form

Early on in the process, the basic shape of the trailer was hashed out to an upright standing, two-wheeled handcart with a single large volume split into two compartments. The lower compartment for bulky and large items while the top fits smaller or fragile items. The width and depth was designed around two fully filled paper grocery bags in the lower compartment and the floor dividing the two compartments was designed to drop down to accommodate carrying taller items than the lower compartment alone allowed. Importantly, the width was kept less than 2 feet with wheels so as to not be any wider than a bicycles handlebar or a normal shopping cart to aid in mobility.



Transmit Standing Upright on Tripod Leg



Transmit with Bicycle Attachment Arm Out



Transmit In Urban Shopping Cart Mode

Important to the trailer design was multi-functionality for Charlie and Lisa. Transmit was designed as both a bicycle trailer but also comes off the bike and turns into a personal urban shopping cart with the folding down of the connecting arm. The aluminum and plastic frame, which the bag is connected to allows Transmit to stand on its own in the store while you load it with up to 4 cubic feet of items. Loading small and delicate items is aided by a multitude of pockets in the upper compartment, keeping Charlie's pears from being crushed by cans or a gallon of milk in the lower compartment. If he has a lighter load, clips in the top of the lower compartment allow easy hanging of smaller plastic bags to keep items from rolling back and for during transportation. The upper compartment also has designated spaces for keys, wallets and cell phones keeping everything in place and the entire outer shell of the bag is constructed of tough and waterproof Cordura nylon for all weather use and lined with wear resistant yellow pack cloth for ease in finding items in low light. And because Charlie and Lisa want to protect both their trailer and bicycles from theft, an outer pocket on the side of Transmit fits any standard sized high security U or cable lock for easy access at a destination.



Interior of Upper Compartment



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Interior of Lower Compartment

When returning from whichever errand is needed Charlie can quickly and easily remove the wheels and fold Transmit's frame and bag down to 7.5 " by 24" for swift storage.



Transmit Folded for Storage

Trailer Precedent Images



BOB Yak Trailer



Xtra Cycle



Burley Nomad Trailer



Burley Travoy Trailer



Extra Wheel Trailer

Walking Cart Precedents.



Reisenthel Collapsible Foldable Shopping Cart



Whitmor Rolling Cart



Whitmore Deluxe Wire Cart



Clicgear Golf Bag Push Cart

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