

Bicycle culture and sustainable futures

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Abstract

Sustainable design need not always be about designing new green products but instead encouraging and building on existing products and infrastructures to expand healthy aspect of industrialized cultures thus creating new sustainable futures. This paper explores how such a strategy is being employed on the undergraduate level to teach design as an act of social responsibility and service.

Keywords

Product design, service design, bicycle culture, sustainable futures, social responsibility,

Introduction

Sustainable design involves a complex set of variables including material extraction, renewal, and recycling, energy consumption, life span of products, and re-usability. Both there are subtler ways of designing for a sustainable future or living a more sustainable present. One such approach is not to design new products but to re-think existing products to incorporate them more thoroughly into the average consumer's mindset and daily experience. With this in mind, the product design program at Columbia College Chicago began a multi-year project to research and identify ways of extending and expanding 'bike culture' into the consumer's daily life. While many students were initially disappointed not to be designing new bikes, they soon began to understand that designing around an existing artifact posed new and exciting challenges for a new century where service design will be as vital a part of the profession as product design.

This paper will present an overview of an on-going project devoted to 'bike culture' as one form of our sustainable future. The project will examine what it means to design around existing paradigms so as to increase their usage

and appeal while developing new products in conjunction with services. The paper will provide an intimate glimpse into the process, challenges, and outcomes of this important project as it enters its third year. Student work will be presented along with the research, city partnerships, and corporate sponsorships that have helped shape the project.

The power of the bicycle

Few people need to be convinced of the power of the bike. We have all grown up with them and experienced firsthand the freedom and mobility they provide. Learning to ride a bike is in fact one of the first significant milestones many children must reach as an act of maturity. The bicycle was one of the first artifacts to be industrialized and subsequently impacted early methods of industrialization. Many of the first bike manufacturers evolved into some of the first automotive manufactures (Rover, Morris, and Skoda in Europe) while the Wright brothers began their business in manufacturing bicycles before pursuing the loftier goal of air flight (Herlihy, 2006). Bikes were central to the women's suffrage movement in the late 19th century (ibid) and continue to weave in and out of the popular imagination based on everything from fashion to politics and economics.

At the heart of the bicycle is its ability to create culture whether that be in the form of bike messenger morals and attire in the 1980s to mountain biking bravado in the 90's to the retro-fitting of 'old-school bikes' into single geared beauties in this century. In the city of Chicago, the bicycle holds a central position in the counter culture best exemplified by Critical Mass¹⁰- an activist group of cyclists who take over the main city boulevards on the first Friday of every month to reclaim the streets demonstrating the possibilities and pleasures of a less aggressive mode of transportation. Many other bike related organizations have an active presence in the city from the Active Transportation Alliance (formerly known as The Chicagoland Bicycle Federation) to West Town Bikes. In the first glance, as a city known for two seasons- winter and construction- Chicago is not the most natural place to bike. In reality, with a natural asset like Lake Michigan bordered by bike paths, a flat topography, and a strong proletarian sensibility, the city is an ideal place to commute on two wheels - all of these combined with the city's storied history (former home of Schwinn bikes). Against this history lies another more recent move on the part of the mayor (Richard Daley) to 'green' the city of broad shoulders by encouraging greater bike usage especially within the inner city.

In order to achieve such a lofty goal the city has embarked on a massive plan (Bike 2015 Plan)¹¹ to encourage and empower the average citizen to use bicycles as an integral part

¹ http://en.wikipedia.org/wiki/Critical_Mass

² <http://www.bike2015plan.org/>

of a daily transportation. The large goals include increasing bike use- 'so that five percent of all trips less than five miles are by bicycle' and to 'reduce the number of bicycle injuries by 50 percent from current levels'. The larger plan is broken down into eight chapters as follows:

1. **Bikeway Network** – Establish a bikeway network that serves all Chicago residents and neighborhoods.
2. **Bicycle-friendly Streets** – Make all of Chicago's streets safe and convenient for bicycling.
3. **Bike Parking** – Provide convenient and secure short-term and long-term bike parking throughout Chicago.
4. **Transit** – Provide convenient connections between bicycling and public transit.
5. **Education** – Educate bicyclists, motorists, and the general public about bicycle safety and the benefits of bicycling.
6. **Marketing and Health Promotion** – Increase bicycle use through targeted marketing and health promotion.
7. **Law Enforcement and Crash Analysis** – Increase bicyclist safety through effective law enforcement and detailed crash analysis.
8. **Bicycle Messengers** – Expand the use of bicycle messengers; improve their workplace safety and public image.

Passive forms of sustainability

As educators we are always searching for new ways to bring sustainability into the classroom. After some thinking and searching for appropriate sustainable projects, it occurred to us that not every form of sustainability needed to involve designing new products but could in fact involve encouraging alternative lifestyle choices. Additionally we understood the enormous challenges designing a new bike would pose and realized that any concepts that might be developed would never be developed which was antithetical to our philosophy of direct cultural engagement as designers. Nevertheless, we had to find a way to make such a project work within the context of an industrial designer's education- there needed to be specific deliverables, a real research component, testing of concepts, and presentations. We rapidly put a team of design faculty on the project with professional bike experience to further refine the idea for immediate launch in the fall of 2007. That was the genesis of what has now become a multi-stage project around bike culture and sustainable futures that happens once a year.

As is the case with many large scale projects, a number of meetings were called to shape the project goals and desired outcomes. The team of faculty included former SRAM designer Kent Solberg and Carl Boyd (a sustainable designer and advocate). It was agreed that the Chicago Bike 2015 Plan would serve as our template and that we would seek out the city as the actual client. Phone calls and emails were sent out to rally the client around the idea

while building additional constituents within the city's rich bike advocacy network to become involved. We were fortunate that Ben Gomberg ('bike czar' and program coordinator) jumped on board early thus providing the much needed context and pressure for our students to realize that this was indeed a 'real' project with actual client who had real demands including a series of presentations in City Hall and some 'out-of-the-box' thinking about ways to increase the desirability of bike usage. Another critical partner in the initial launch of the project was Alex Wilson of West Town Bikes- a bike repair shop that doubles as a community outreach and training center located on the west side of the city. Alex combined years of knowledge in advocating for greater bike usage with practical knowledge on everything from bike repair to retro-fitting carts and extending the bike's capabilities. It was a great partnership overall and the project began with the necessary enthusiasm to get off the ground. Shortly after the launch few students seemed to recall that they were not designing cool new bikes but instead looking for unique and crucial opportunities to increase the value and centrality of the bike as a more than an entertaining diversion or cheap and occasional mode of transportation.

Taking it to the Streets

The team of students (16 in all) were broken into four groups of four and tasked with the challenge of establishing key areas of development for the humble two wheeler. The students established a wiki site for greater communication across their groups and to share the vital research each of them were uncovering. The first 5-6 weeks involved going out into the world and observing firsthand what the issues were. This was a clear invitation for the design students themselves to pull out their own bikes and change their way of commuting thus experiencing the issues up close. Research was drawn from the world around them, online videos of common accidents, new bike accessories, and new uses for bikes around the planet and of course one-on-one meetings with the city to learn what their plans involved so that the students could be partners rather than observers.

The teams quickly established key areas of concern that included better bike locks for the existing infrastructure and possible new accessories to increase safe rigging, mobile bike repair stations, better bike integration with other modes of public transportation, and finally mobile bike paramedic bags. Each sector had unique challenges that required a thorough understanding of the users and the multiple contexts of use. No one could develop their project along unrealistic lines which meant the solutions needed to be realistic and cost effective or they were not going to ever see the light of day. While the group charged with examining integration with existing public

transportation could realistically retrofit a train car to accommodate bikes, they could not, for example, redesign the train car itself or any of the stations. Each group proceeded with physical mock-ups (where possible) for field testing while running through the normal procedures of visualizing possible solutions through physical appearance models, computer simulations, renderings and animations or walk-through of possible solutions. The final presentations took place in front of city officials along with bike advocates and received a unanimous nod of approval. The students left one of the city's buildings convinced that change can indeed occur on such a localized level.

Bike Culture 2.0

The next time the project was run it was determined early on that the process needed to be different from the previous experiment. Through much conversation and discussion, the original idea was pushed to another level of refinement and evolution to include outside businesses that might benefit from the incorporation of a bicycle into their business model. Faculty member Carl Boyd led the group of students and worked diligently to find appropriately sized and positioned partners who would take the project seriously and provide students the necessary access into their working methods to better understand how bikes could be incorporated into their day-to-day processes. The clients who were selected included a landscaping company, a home cleaning service, a gourmet coffee shop, and Time Out Chicago (the weekly news and entertainment magazine). The challenges this time were straightforward: develop workable solutions to encourage the clients to seriously embrace bikes as an alternative mobility choice. This involved not only understanding the clients' needs but figuring out low cost methods to make small numbers feasible. In all instances, except TimeOut Chicago, these companies were local with limited resources and no ability to invest in large roll outs should the technology fit their needs.

Again working with Alex Wilson from West Town Bikes, the students were able to run ideas past him and while receiving invaluable input on everything from concept feasibility to practical construction methods for the various prototype solutions. The students developed multiple concepts in model form first to get as many ideas out as possible and to evaluate the best potential directions. Full scale prototypes were built and tested to confirm that they meet the sometime stringent requirements (for example hauling gardening equipment on a single bike) of the client. The range of solutions included very lightweight panniers for the house cleaners that took full advantage of the bike geometry while maximizing space for cleaning products to a full service art-deco inspired bike-powered cafe for dispensing coffee samples. Each student presented their solutions

to the individual client and again the reception was both enthusiastic and encouraging (suggesting the possibility of a real trial run in the future). Again the students witnessed first hand the power of localized design thinking that is not about the big gesture and the shiny new product but a way to embrace a service and improve functionality while also encouraging both exercise and greater environmental stewardship.

Bike Futures in the Future (conclusion)

This project is slated to continue into the future with each incarnation different than the last. The idea is to amass a wealth of knowledge and ideas that will seed a larger and more diverse bike culture in the future. With each new incarnation there will need to be innovation applied to the actual design brief to differentiate the current project from the past while still learning from previous projects. The ultimate goal is to use these projects to continue exploring new and innovative ways to increase service design projects in the future. While designers generally think of themselves as creators of new products the reality will need to change towards design solutions that involve ramping up existing sustainable solutions rather than simply adding more stuff to an already overpopulated material culture. This is a challenge for us as faculty and it will be a challenge for our students as designers of the future. Finding satisfaction in tweaking something, adapting something, or even fixing something is not the same as creating something and yet this has to be part of our sustainable future- adaptation as opposed to creation. It is a hard lesson to learn and one that will happen with small steps initially until we have the language and necessary skills to imbue it with the degree of creativity currently associated with designing products. If a designer really is a solver of problems, there is no lack of problems in the world to solve. It is merely a matter of changing focus and creating the infrastructure to make it real.

Bibliography

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