# Effecting Behavioral Change

*Engineer the Tools for Scientific Discovery*

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# Effecting Behavioral Change

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People are more likely to improve themselves, their communities and the world if the change is simpler, more desirable, cheaper and easier than the current option, and the activation energy to switch is low. We are creatures of habit. Society has inertia. Changing the world requires changing people's minds and altering their behaviours.

My conscience compels me to try to improve my environment. Over time, I have developed my philosophy for enacting change, and refined my approach. In each of the experiences I will describe below, I identified a behaviour in my peers worth adjusting, created a desirable and simple solution to alter their actions, and gave them the tools to enact change. The scope of these experiences may not be global, but in each, my actions attempted to cause people to improve themselves as individuals, ameliorate their community or have a lesser impact on the environment. Through these, I learned how to lay the foundation for a real behavioural change in my peers, I learned how to lay the foundation for real behavioural change in my peers.

This mentality scales up for Grand Challenges. The Grand Challenges cannot be resolved with technology alone, or solely through social pressures, or by simply passing a bill. They cannot be solved by throwing money at them, nor by holding hands and wishing they would go away. Grand Challenges demand all of these things together -- and more: an interconnected ecosystem of scientific innovation, an enlightened social paradigm that welcomes the change, strong political will, ample economic resources and yes, a dash of optimism. With all these elements acting in concert, we can change our behaviours in meaningful ways and be able to achieve great things.

In this portfolio, I will reflect on some formative experiences that developed my understanding of how to incite behavioral change. The first is

a course called Paradigms, Predictions and Joules which gives a global perspective by mixing science and society to understand the world today and try to deal with the future. Next is an idealistic entrepreneurial experiment to improve community collaboration and generate value using a platform called KarmaHub. I follow by discussing "Build Day," another framework to build community relationships and improve Olin as a culmination of a year of work and development. Next, I reflect on an interdisciplinary course called Integrated Product Design, where I used a technical and business approach to solving problems in this way. Finally, I describe my role serving as Clubs and Organizations Chair to create long-term solutions for student groups. These experiences were instrumental in refining my philosophy for change, and demonstrate how I apply it in my environment.

## *Global Awareness*

In the fall of my Junior year, I enrolled in a course called Paradigms, Predictions and Joules. PPJ is a course on environmental perspectives in the past, present and future co-taught by a geosciences professor from Wellesley and a history of technology professor from Olin.

In addition to offering a global, holistic perspective on the world as a complex system, the course provided ample opportunity for me to apply and develop my philosophy of effecting change. One project encouraged students to take a holistic look at change on a national level. First, teams of students deeply analyzed a country's energy consumption and the resulting environmental impact. Next, we recommended mitigation strategies to lessen that impact. Finally, we built a model to validate data and predict outcomes for the country with and without our various mitigation strategies.

My team selected China for its size and rapid rate of development in recent years. Effective policy and behavioral change in China can have significant environmental implications We investigated the measures that the government is currently trying to enact on a political scale through their "5 year plan," as well as past 5 year plans and their actual implementation on a

factory-by-factory, region-by-region basis. Discrepancies arose when politicians demanded that conflicting environmental and economic metrics be met, for example when factories were required to cut back to meet environmental targets while still being expected to produce exponentially growing economic output. In our recommendations, we kept economic growth in mind while detailing more sustainable decisions.

This is a good example of how global awareness and keeping a holistic view of the issue helped us to deliver a better solution.

Another project was aptly titled "Change the World." My team chose to influence our peers to change their behaviors and reduce their personal impact. We used a Life Cycle Impact Assessment tool called "ReCiPe" points to quantify popular behaviors. We requested that our test group track their consumption over the course of a week. When we divulged their results, we encouraged them to select an area to improve in. They altered their behavior for a week, and compared the data.

The results were very promising! Simply by viewing their quantized impact in a pie chart and discussing simple strategies with us, our test group was able to reduce its impact by 25%! This was, however, a low-fi solution. The change was not tenable: it required more effort than doing nothing at all. After the study, without extrinsic motivation from the team, our test group may or may not have have reverted back to its old ways. The learning was valuable, but a more complete solution was necessary to capitalize on the idea.

## *Entrepreneurial Experience*

In Sophomore year, I devised a novel paradigm to generate value in small communities. I realized that community members are willing to offer their time, skills and services in exchange for recognition and the chance to develop relationships. I prototyped a platform for an exchange economy, where peers can offer favors in exchange for "Karma points," which they can

spend in turn on receiving favors and services from others. This way, people can share and show off their talents or abilities, feel like they are contributing and adding value to their peers' lives, make a connection in a non-work setting, and also earn free work or lessons from their coworkers.

I developed the idea in a Fundamentals of Business and Entrepreneurship class with a team of four. We called it KarmaHub, because it would be at the center of a network of goodwill and fellowship. We implemented a website where individuals could post activities or tasks that interest them, or skills they can share. We also attempted to create a structure for the interactions, to make sure that peers who offered actions did follow through, that new offers continued to be posted.

The first prototype was a conditional success. The interactions that did occur validated the free economy model. The product was not built to last, however. As students, we had no political influence to enforce its usage. Without human resources, we didn't maintain the website beyond the end of the semester.

The concept has potential as a business idea, though: KarmaHub can be sold as a system to companies who want to ameliorate their culture. With an improved prototype to better facilitate free exchanges, and some small amount of political will from management, KarmaHub could enable a social shift in company culture. It would allow users to develop their relationships and leverage their community better. Here's an example of a socially conscious business idea enabled by providing a framework for people to change their behaviors.

KarmaHub sells behavioral change as a commodity. It shows how traditional business practices can be applied to a concept rooted in personal and communal improvement.

## *Long Term Project*

I've been working on "Build Day" with a group of students for nearly two years now. We call ourselves "Build Day Architects" because we write

the plans and create a scaffold for a community building experience for members of the Olin Community. Build Day is a day-long event after classes end in May when faculty, staff and students unite to build connections and implement projects to improve our campus and culture. The day comes after a full year of setting direction, sorting out details, implementing systems to help in future years, and engaging the community. The Build Day Architects have gained valuable insight into the inner workings of Olin College, and we use it to empower our peers.

Last year, the results were extremely positive. We were still learning, and our scaffolding for the community was rickety at times. Despite this, our users enjoyed the day and the fruits of their labors. This year, we identified pain points and areas of confusion, and have been working all year with faculty and staff to create a much more accessible experience for them. We have developed systems with administrators in order to quickly navigate the hurdles. We've implemented systems to make developing a build day project much easier. We have plans to ensure that it will be clear how to participate on May 2nd.

The main issue is that we ask quite a lot of people: to give up a day of effort (even if it is after classes are finished), to devote time and energy toward other peoples' projects, to stray outside of their comfort zones and meet new people. The list goes on. The purpose of the Architect team is to mitigate these issues, convey the importance and desirability of the day's activities and curate a self-evident experience.

By developing this project and working with our users over the long-term, we've been able to iron out issues, and make it even easier for our them to make the behavioral changes they want to make.

## *Interdisciplinary Experience*

While the other examples are centered around social engineering, the outcome of my semester in Integrated Product Design was a product and

business model. AquaPulse is designed to improve individuals' lives and to reduce their environmental impact by influencing them to change their behavior. A well designed product can cause people to improve their behaviors as much as a paradigm-shifting social frameworks can.

The AquaPulse is a timing fixture for the shower. The user sets the desired duration and turns the shower on. The shower pulses at specific intervals to remind the user how long he or she has left before the flow turns off. This allows people to manage their time in the morning much more precisely. Users do not need to worry about getting lost in the shower, wasting time, water, and energy to heat it.

The team was composed of engineering students from Olin, business majors from Babson and an industrial designer/artist from Massachusetts College of Art and Design. We selected elements from our own and our various disciplines' experience to create our design process. For example, we drew upon our user empathy research from UOCD, while evaluating the market and problem space using heuristics drawn from business classes.

As we established our problem statement, developed our solution, and finally created our product and business plan, we shared knowledge and techniques. This gave every team member a broader perspective on a complete solution. A good product isn't enough; a technical solution requires a solid plan for manufacture and distribution, realistic pricing, and an understanding of the competition on the market, among other things.

Through this experience, I deepened my understanding that a combination of skills and disciplines are required in order to change behavior.

## *Service Learning*

The Olin experience, like our mascot, the phoenix, dies and reborn periodically. Each year, the senior class graduates and takes with them all the institutional knowledge they accrued during their time. Their experience

and memories live on second-hand in the underclassmen they interact with. In many cases that's a good thing: Olin's culture evolves to reflect the current student makeup (although it is nice to be grounded in the history of the first decade). On the other hand, there are cupboards full of six year old junk that everybody thinks belongs to somebody else. We often lose track of problems we have solved and feats we've achieved.

I volunteered to take the role of Clubs and Organizations Chair to establish some systems to resolve these problems. For example, I required every existing club to write a charter to document their purpose, practices, material possessions and the space they use. I made it a simple form, so that the activation energy was low. The result is that each individual club now has a permanent record of existence. It helps clubs maintain some consistency from year to year, rather than being forced to reinvent themselves with each new leader. At the time of writing, I am enforcing the transition section of each Charter, so that next year's leaders can hit the ground running. With these nuisances out of the way, the student in my position next year and club leaders can focus on helping clubs throw great events.

This position allows me to implement my ideas for behavioural change perfectly. I wield some degree of political influence. The social pressures are easily tapped into: club leaders have a stake in the future of their clubs. I can create simple technical solutions that make it easier to organize and run a club -- especially when some clubs have no internal systems in place. I have been able to impose systems on a group of willing participants. I have changed their behavior and solved their problems using technology and social pressure to increase transparency and readiness of information.

The one caveat is that these solutions require a concentrated individual effort. I volunteered for the job, and I'm glad to do it for the benefit of my peers. That's one more common thread that ties this idea together: altruism. The ultimate benefactor for all these solutions is your community, your peers, your planet. The designer or system organizer or

coordinator may find the work rewarding and may even receive recognition for doing it. But the reason they do it is because it is right.

## *Conclusion*

I have given examples of effecting behavioural change that fall under each of the five categories identified by the Grand Challenges Scholars Program. The corollary also holds: these five aspects fit cleanly into my philosophy for change as well, and contributed strongly towards developing it in the first place.

The vision to enact change comes from a global awareness. This broad perspective demands a holistic response, one which enables behavioural change in spite of confounding social, political and economic factors. Next, entrepreneurship provides a framework for implementing a solution. The goal is to "sell" change. Business techniques, when properly applied, can be perfect tools for understanding the market, for influencing users and turning an idea into reality. An interdisciplinary mindset and skillset also help with implementation. A solution requires cooperative interplay between different fields to successfully encourage behavioral change. This process takes time, and investing in an idea long-term allows time to develop a complete understanding of the users, to implement a well-supported technical solution, and to turn political and social will. Finally, it takes a certain commitment to others and to one's community to devote this time and effort towards improving their behaviors and their lives. The decision to pick this route which may not be the most profitable, or easiest, or most clearly marked, in an altruistic one. The value generated from making this choice makes it a good one.

These five categories applied together toward effecting behavioural change are an important part of resolving the Grand Challenges. The failures and limitations of the current social paradigms with respect to these global issues are a main reason why they are given this special designation. Changing the dialogue around these issues is important, but enabling people

to change their actions is even more vital. The world requires holistic leaders and systematic thinkers who can induce this behavioral change with respect to the Grand Challenges.