The process of taking an idea into reality has long fascinated me.

Throughout the course of college, I have had the privilege of helping to create three varying projects: a workshop designing custom-machined clock faces, a business card startup project, and MIT's first fully unified live music student organization. With this diverse set of projects and parameters, I came to question if they held a common process.

Though the topic of idea development deserves greater investigation and empirical study, I offer here a set of personal case studies. I do this with the full knowledge that the world offers an enormous amount of variability, where factors and changes beyond my control are unceasingly at play. I, too, changed much throughout these projects, and therefore, I, as an author, am also subject to a certain amount of variability and change over time.

All those notions given, I do believe that there exist shared traits in the ways that I was able to help grow and nourish the ideas into real projects.

My main finding is an ex post facto framework that each of the projects fits within. To elucidate how this framework applies and provide substantial background to justify each step, I have derived a thorough explanation of how each project used each piece of the framework.

Curious if this framework held validity given real-world constraints, I interviewed four industry professionals to understand their views and project experiences. I have included their paraphrased thoughts and experience interspersed throughout the framework in order to provide my framework with greater support and empirical validity.

Once again, this is a personal case study that is open for interpretation. It is, in many ways, the application of the design process to highly variable real-world projects executed in the context of a college experience.

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And lastly, if you’ve read this far, I would like to thank whoever reads this thesis for taking the time to consider these case studies, as brief as they may be.
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**Project Backgrounds**

The following is a point of reference about the projects described in the framework. This is included at the beginning to provide essential context for the content in following sections.

Figure 1: My eye clock prototype mid-assembly, May 2011 – granite, marble, .5” MDF.

**Gift of Design:**

A workshop in which undergraduate students were taught to design and create custom-machined clock faces as gifts for close friends and family.

This was a clock workshop geared primarily toward sophomores in the Department of Mechanical Engineering. The clocks were to be designed as gifts for loved ones, driving the intention of the design. We were able to raise $1200 from the MIT Council for the Arts and $2000 from the Mechanical Engineering Department to make it happen.

We started with over two dozen applicants, and ended up with seven students. I, along with a team of two other seniors, guided them through the process of design and creation of a unique clock face. This one-of-a-kind prototyping used modern rapid prototyping technologies like CO2 laser and water-jet machining. Students used a wide variety of materials, ranging from marble and granite to fluorescent and mirrored acrylic.
The clock workshop was all done with the purpose of giving back to the students at MIT by helping them show gratitude toward people that helped them.

Figure 2: Prototypes created May 2009 – fluorescent .125" acrylic.

LaserKard, LLC:
A design-centered company creating personalized laser-etched business cards from novel materials.

Spelled as one word since our incorporation, LaserKard was a 2-year project, primarily between my business partner, Robert McIntyre, MIT ’11 and myself. We transformed the laser-engraved business card from concept to available product, and created our own custom packaging. We acquired $4,000 in seed funding. We brought to market Version 1.0 of the product, with sales exceeding $800.

We established a supply chain involving local suppliers, and showed the product at conferences in NYC and Seoul. In the end, we purchased our own prototyping laser, and created prototypes from anodized aluminum. An amazing learning experience, we recently ended LaserKard amicably to work on new projects.
The Live Music Connection (LMC):
    MIT's official live music student group.

My band and I formed this music cooperative as a venue for musicians on campus. We expanded into a recognized club, raising over $16,000 for shared music equipment and putting on two dozen shows for 1500+ patrons for 20+ student bands. I helped student bands record their music and trained other students to fill club roles.

We created MIT's 1st official centralized student bands CD and followed it up by giving the 2nd year's CD away, developing a model that allows the CD as a piece of both advertising and MIT culture. We took over MIT's storied Battle of the Bands and re-established its focus on MIT bands.

We have also now taught over 40 MIT students how to play guitar for free through our Open Source Music lesson program. The LMC has been our way of centralizing and serving the contemporary music community at MIT.
Framework

Throughout the reflection process of this highly personal case study, I have worked through the differing projects to investigate a unified framework.

Each project held with it the fact that neither I nor my teams knew how to complete the projects at the outset. In addition, despite having varying levels of background in the subjects, each idea began with a simple idea and little prior prototyping.

To this end, I have extrapolated what can only be described as a personal framework. I hold no claim that this framework applies directly to or fits an existing project engineering framework. Rather, I pose that it may be of use to others as a set of examples structured as a framework with some amount of external validation.

There is much that I wanted to include in the realms of project management and execution, but the focus of this thesis is the iterative process of taking an idea from concept to initial implementation and will have content regarding that matter primarily.

All reservations aside, I believe that this framework holds true with regard to the 3 different projects that I cover within each step. I thought it best to explain how each step pertained to each idea such that it would allow the reader to gain a sense of continuity.

This framework is roughly chronological, though there exists overlap, and sections or individual pieces of the process may and were often iterated through multiple times.

The framework is as follows:

1. Inception. The idea is born.
2. Wow-Factor. Harnessing novelty to gain initial traction.
3. Excitement. Being personally excited allows others to feel the same way.
4. Sharing. An intensely freeform sharing – espousing the idea to anyone, anywhere, at any time.
5. Civility. Kindness and courtesy are essential in sharing.
6. Guidance. Advice from trusted sources provides direction and greater perspective.
7. Unity. A core mission allows stakeholders to rally around the idea.
8. The 1st Yes. Initial support allows further endorsement.
Industry Interviewee Biographies

Nathan (Nate) Ball:
Nate Ball is an MIT alumnus, B.S. Mechanical Engineering (2005) and an M.S. Mechanical Engineering (2007). He has appeared on television as host of Design Squad on PBS. He won the Lemelson-MIT Prize in 2007. Based on his entry, a reverse-repelling device, he co-founded the Atlas Devices, a company focused on developing a Powered Rope Ascender, primarily for United States Military use. He is co-inventor on several patents.

Seth Godin (from http://sethgodin.com):
Seth Godin has written thirteen books that have been translated into more than thirty languages. Every one has been a bestseller. He writes about the post-industrial revolution, the way ideas spread, marketing, quitting, leadership and most of all, changing everything.

American Way Magazine calls him, "America's Greatest Marketer," and his blog is perhaps the most popular in the world written by a single individual. His latest book, ‘Poke the Box’ is a call to action about the initiative you're taking - in your job or in your life, and Seth once again breaks the traditional publishing model by releasing it through The Domino Project.

As an entrepreneur, he has founded dozens of companies, most of which failed. Yoyodyne, his first internet company, was funded by Flatiron and Softbank and acquired by Yahoo! in 1998. It pioneered the use of ethical direct mail online, something Seth calls Permission Marketing. He was VP of Direct Marketing at Yahoo! for a year.

His latest company, Squidoo.com, is ranked among the top 125 sites in the US (by traffic) by Quantcast. It allows anyone (even you) to build a page about any topic you're passionate about. The site raises money for charity and pays royalties to its million plus members.

John Harthorne:
John Harthorne graduated in 2007 with his MBA from the MIT Sloan School of Management, returning to Bain and Co. Consulting. At Sloan, John had a strong interest in startups and ended up leading the MIT Global Startup Workshop. From there, he achieved his goal of entering and winning the MIT $100K, one of the world’s most prestigious business plan competitions for startups, with Robopsy, a device based on robotic biopsies. He left Bain after business school to combine his passion for startups with his knowledge of business plan competitions, founding MassChallenge (http://masschallenge.org). MassChallenge is a non-profit that provides free office space to over 100 startups annually as well as giving away $1MM to a wide variety of startups. They have been covered in a wide range of news media, are vocally endorsed by the state government of Massachusetts, and were honored by President Obama in January 2011 as one of the best initiatives in the country for supporting high-growth entrepreneurs.

Jim Laughlin:
Jim Laughlin is the Director of Communications at the Life is good Kids Foundation. He has a family history with the company – his cousins Bert and John Jacobs founded Life is good, a company focused on delivering a positive message to their customers, based on the ethos that 'Life is good.' He joined them in 2005, and has been with the mission ever since.
I. Inception. The idea is born.

The inception of an idea is a fascinating piece of the puzzle. I think when I arrived at MIT, I expected in some sense that I would think for hours and hours and then have a magical Eureka moment. That has not often been the case.

I ascribe to the Isaac Asimov quote: “The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' but 'That's funny...’” Though one can’t be sure given the remarkable number of variables that exist in everyday exchanges and lifestyle, I will attempt to characterize these within the framework of a personal case study.

1.1. Gift of Design

The Clock Workshop held a finite A-ha moment. I was exploring the concept of creating many clocks as gifts for others as my thesis topic. By creating many clocks, I planned to assess how my design process evolved. In the process of sharing the idea (I’ll cover this more later), my friend Carrine Johnson noted her interest – ‘It would be so much fun to make a clock out of marble and granite!’ I offered for her to join me in the shop and make a gift clock of her own.

And there was the spark! Carrine said – ‘You know what Kevin, you should do a workshop.’ That was it! With one small suggestion, the gap had been bridged and I had begun to think of the idea in an entirely new light. As dramatic as it may sound, I am a bit more on the excitable side of the spectrum, and once an interesting idea is mentioned, my brain begins turning over, churning, playing out different ways as to how to make it happen. Though this may sound more like a Eureka moment, it was more of a spark that led to a new thought process. I instantly began to hash out basic details with her, standing in the hallway of my dormitory late at night.

In this case, the idea had its genesis in the response of individuals. Here it was something of a group effort, not in isolation.
l.2. LaserKard

In contrast, the thought process for coming up with laser-etched business cards was an interesting intellectual leap with little immediate outside input. The idea itself is by no means unique, but it was formed in enough of a vacuum to consider the idea unique to the setting and situation.

It was simple. I had signed up late, and therefore didn’t have the free business cards that were given to participants in the career-focus program for sophomores known as UPOP (Undergraduate Practice Opportunities Program). And what was strange that I noticed was that all of the Vista Print business cards for the UPOP students looked the same in design. It was a desire to break out of this sameness that drove a certain element of creativity. A networking session at the end of the week that I was told would host over 50 companies searching for student interns raised the stakes. I could now put the business cards to use.

I had been practicing lately with the laser-cutter in the basement of the Media Lab, and it wasn’t a terribly far leap to just ask – why not make the cards out of acrylic? The next night I was in the basement with the craziest green fluorescent acrylic I could find. I wanted to stand out. Beyond an interesting example of simple product design, the question of how exactly I came up with that idea is a fascinating one.
Absent specific data with regard to my mental faculty at the time, I am forced to conclude that it had to do with what many call ‘analogous thinking.’ I saw a tool capable of creating flat, laser-etched placards and an interesting material. I also saw the overwhelming mediocrity (not in a negative sense, only in an empirical sense) of the existing solution. With the networking session at the end of the week, I knew simply that I had to stand out to get the attention of the companies there. The effect that the cards had was dramatic. I’ll describe the actual interaction in Section 3.

Figure 5: The idea’s conception: my 1st laser-etched business card prototype, mirrored acrylic.

1.3. LMC

The Live Music Connection (LMC) was borne out of a similar solution focus, arising from interactions that discovered a need. My band was handing out flyers at the MIT Activities Midway to new students. We were searching for a singer, but we had a remarkable number of students come to us asking if we needed ‘a bassist... a drummer... a guitarist?’ We already had those positions filled in the band. And beyond that — when they asked where they could go to play music at MIT, we were at a loss. Several dorms had scattered equipment of varying quality levels and there existed no centralized place to play contemporary live music.

I shrugged it off as a given. But the next weekend, as my bassist, Tom Cervantes, and I sat down to lunch to discuss the future of the band, he brought up an interesting issue — our response to the students inquiring was unfortunate. I agreed. But the next piece is the most interesting. He questioned my implicit assumption that it had to be that way.
‘Why can’t there be a place to play on campus? We can connect the musicians on campus.’ I had no idea why he felt that we were qualified to do so, but there was some kind of magic in his noticing a problem and brainstorming instantly an adequate solution. I agreed that it was something that should be addressed and we began thinking of ways to alleviate this issue.

Tom had been open-minded enough to not only notice that there was a problem in the system, but he also realized that it was a problem that could be solved with the right approach. It would take many months of trial and error to find that solution and we are still finding it, but none of that could have taken place had he not understood that the initial problem existed and was solvable.

Figure 6: My band, The Guitar Knives, Co-Founders of the LMC. Credit: Jessica Lin, MIT ’11, arrangement: Alejandro Arambula, MIT ’12.

1.4. Industry Perspectives

John Harthorne:
On the spark that became MassChallenge, started in the peak of the recent global economic crisis in 2008.

My plan during my MBA at Sloan was to join one of the organizing teams of the 100k (MIT entrepreneurship competition) – to see how the process works in year 1. And in year 2, win the 100k.

During the summer, I would intern at Bain or BCG (consulting firms) – but then graduate and hopefully launch a billion dollar tech company – consulting was a backup plan. I also found the team doing the MIT Global Startup Workshop. I joined that and ended up leading it’s split from the 100K as a separate entity, only for logistical reasons.

So in my 2nd year of business school, I entered and won the 100k. We were doing Robopsy – a remote medical biopsy device. And we deserved to win. We had VC’s contacting us, but I didn’t want to run [Robopsy] – medical devices undergo a very long process. I had no intention to run it going in.
We got to ring the bell at NYSE. I got great network out of it. We were the belle of the ball for a while after. And we learned a lot. Then I graduated – and took a job offer to return to Bain full time. I felt very stifled at Bain.

But I didn’t have a ton of ideas [for startups]. With a signing bonus and the income, I decided I could do startup later.

It was the 2nd year, Christmas bonus – still no startup. There are great people at Bain – I didn’t like consulting though. I didn’t like the constricting methodology.

I was very frustrated with Bain – I was getting hives, actually getting physically sick. I couldn’t sleep at night. I needed to quit – I just knew – I can’t do this. But, it was December of 2008 – the DOW is below 7000. But I have stable job.

It was still killing me.

I wrote out all kinds of executive summaries – entry points, different markets. It was mostly hardware – consumer electronics – there’s enormous competition, and I had no corner on the market and no background or expertise.

I started trying to be more structured about it in 2 ways. 1) I decided to find a gap in the market – an issue – then take the issue away – OK – there’s traffic and... I could use a smartphone to solve that for example. The biggest problem is that there was no money going into risk [for new ventures] at the time. There was no hope, no optimism.

2) Follow the money. Even in a bad economy, someone’s spending. What about foreclosure, refinancing? But I had no passion behind those – Obama had just passed 800MM stimulus.

The last point that I had was hidden assets. The idea behind companies that explore hidden assets is that they go into a big company, and find value they had been building without knowing it. Take Verizon – what if they’d been building up databases about how often people use their phones at certain times of the day, or non-person specific information like that. Lots of corporations have valuable assets that they don’t think about.

So I thought – do I own different things?

I told my family that I needed some time alone. There I was - blank whiteboard staring with a pen. I spent six hours afternoon, and I didn’t come up with anything. As I was falling asleep, it hit me - the world needs jobs.

They’re putting money into jobs. And for that – I am one of the most credible person in the world. For the electronics, I was definitely not, but for this I’m at least among the best 20. I have a great network, with a kind of critical mass, and from the 100K, I know all the best lawyers, VCs (Venture Capitalists), etc..
And to help with this we would need very little out of the money going into jobs. Originally, the idea was to create a $50MM fund that the government would put into and then pull out of, essentially creating a program for small business loans.

That was the original concept – we would get $50MM from Obama, and then he would challenge the world - to say that the world needs America’s growth. Everyone bring your best idea for a new industry or business or maybe even a not-for-profit, but nonetheless a solution.

And we promise that we’ll get the best hundred or thousand ideas, and then give them everything they need to succeed. If you need to people, we’ll help there. If you need information about the market, we could help with that.

So, that was the concept for the 50M.

In January, I sat next to Akhil at Bain. He went to HBS, and he hated being at Bain too. He was very dissatisfied.

I came back on January 5th, and I brought him into room with a whiteboard. I talked about how MIT was a great strategic position, and explained the idea to him. Then Akhil says to me ‘Let’s quit. We will quit right now. I will take my stuff and we can go downstairs right now and walk out together.’

**My thoughts and response:**

It seems that John really went through a process here. He attempted methodically to select a solution that made sense given his context. And beyond all of his targeted brainstorming, it seemed that he could not find the solution that he was looking for.

However, he was trying to find problems and issues. And he was practicing a method for encountering problems and wrestling with how to solve them. When he encountered a problem that engaged some of his existing resources, he was able to conceive an idea that was plausible enough to convince his first co-founder to join.

The process by which he went about attempting to actively conceive of an idea is an interesting point that is not entirely clear. He was obviously attempting to work through the solution for hours on end before arriving at the conclusion that he did, which was far from perfect. It is a matter of interest that he was able to see a clear opportunity and put the pieces together from his background and a strong market need into the core idea that still remains the thrust of what became MassChallenge.

I.5. Conclusion

Though none of my final ideas, or those of John, came about as a direct effect of focused brainstorming sessions, the product design curriculum within the Department of Mechanical Engineering at MIT educated us in the method used at Stanford, pioneered by Alex Osborne in
Applied Imagination. This method essentially has participants create as many ideas as possible and withhold judgment, saving the sorting process for later. Once many ideas are generated (emphasis on quantity and speed), the list is then assessed and selected for by iterating through market and customer research.

What I appreciate about this form of brainstorming as a technique is the idea of completely withholding judgment and openly challenging assumptions. It is with this mindset that I have been able to think opportunistically. Many times I have observed that the problems and challenges themselves are solvable. Understanding what the problems are or even that they exist in the first place seems to be the key.

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2. Wow Factor. Harnessing novelty to gain initial traction.

In the entrepreneurship community, the importance of an idea is something I have often seen industry leaders call into question. Most often, it is argued that ideas are a dime a dozen – that the team is what counts. And while I do not presume to be an expert on the number of startups or community ventures that make it based solely on their initial idea, I do know how pivotal the idea has been in the earliest stages of my projects.

The idea is a centralizing tool, and a powerful engine in driving excitement when there is nothing else to do so. Perhaps basic level prototypes exist and people have expressed interest in working on the team, yes – but at some level one realizes that the project is riding solely on the amount and kind of buzz the idea can create. The question that I implicitly ask myself here is – ‘Does the idea capture people’s imaginations? Why or why not?’

The Wow factor is important because it drives people to the idea. It promotes sharing of the idea actively. Wow can come from an aspect that activates the senses, often visual, a clear benefit or value proposition, or even something of public or community interest. The following projects illustrate the wow factor in each of these contexts.

2.1. Gift of Design

For the clocks themselves, the ‘Wow Factor’ definitely resided in the process and materials used. Frankly, the mechanics of the actual project – aside from knowing about mounting, adhesives, and the brittle nature of the materials – were fairly basic. My proposal was simple enough. I was using a water-jet machine to create clock faces (and attachments) of novel materials: a mix of aluminum, Plexiglas, steel, marble, and granite. The clock below demonstrates the level of complexity attainable.
The Clock Workshop as a workshop held value as well in the idea that it taught students (primarily in the Mechanical Engineering Department) to design with a specific intent in mind—making unique gifts. That held both a design value (one could make almost any 2-D shape with the water-jet—the idea of the clock as a gift focused your design) and a sentimental value (the clocks were gifts for loved ones or people who had a profound impact on the students.) In addition, many students in their sophomore year (the primary target for the class) did not yet have hands-on experience with the water-jet.
The Wow therefore, came with the entire idea of using a water-jet to make a clock – an element of aesthetic design in an environment that did not primarily focus on aesthetic design, and the idea that students would learn to make them, doing so to express gratitude to others. There seemed to be intrinsic value and novelty in the different facets of this concept.

2.2. LaserKard

The Wow in the business cards existed early on almost solely in the visual realm, especially with regards to the fluorescent acrylic prototypes. Though it possessed several issues (cost, thickness, scratching) – the salient point for observers and early recipients was the glaring difference in visual character. ‘Is it glowing?’ ‘You made a business card out of a mirror?’ (one of the early prototypes was made from mirrored Plexiglas)
The other remarkable point that arose was that the business cards were etched with a laser. While laser cutters are now relatively commonplace in the world of rapid-prototyping, to most of the general populace, even including other majors at MIT, lasers are often held as something out of science fiction. A sample size of over 300 people in the area in and around MIT, held for me the notion that people knew that lasers existed, but that they were largely unfamiliar with the fact that lasers are used in creating or customizing consumer products. The exceptions to this rule were those who knew that the iPod can come with an option to laser-etch your name or a message into the back.

Regardless of knowing about lasers or not, people seemed to be entranced by the idea itself and especially the fluorescent green prototype. Upon further investigation, I found that the human eye is specially tuned to focus on the color green. But that it refracted light within its surface and emitted it through the edges was a huge talking point.

The buzz-worthiness of the business cards was quintessentially captured in the initial interactions that I had with company representatives at the networking session referenced in Section 1. Four to seven students would be already gathered around the rep. and I would come forward and ask if I might share my business card. Instantly, I would have the conversational ‘ball’ for several minutes inquiring where I got the card, and upon sharing that, how I made it.

A friend of mine asked to use the cards at a subsequent career fair and broke my assumption that my making the cards was part of the Wow. They worked for him too. Following product tests indicated the same level of wow-factor.

Figure 9: The 2nd Iteration Fluorescent Green Acrylic Card.
2.3. LMC

The buzz ‘power’ of the LMC (Live Music Connection) began at the initial iteration. The Asst. Director of Student Activities, Paul Spangle, recommended to Tom and me that we work to establish that a live music community existed by putting on a free concert series featuring student bands. This not only allowed us to evolve the idea through a trial run, but it also allowed us to see what the idea’s ability to attract attention really was.

We agreed and this idea seemed to grow legs based on a few different pieces of Wow. The basic idea of the concerts being free and open to campus was cool. Students could simply come and relax after a long week and watch their friends play. By removing the financial barrier to entry, it enabled us to establish a fun culture of ‘free’. This openness was worth talking about.

Buzz was something with which we were very much concerned as we wanted to boost concert attendance and prove to ourselves and others that the idea had merit. We actively infused buzz by encouraging the bands to bring their friends. We gave bands bonus items like free audio recordings, photographs (by local photographers from the newspaper that we asked to come and later members of the club executive board), and free video recordings. The team and I largely bootstrapped this buzz, and it seemed to almost have a snowball effect.

Figure 10: The lights from 2011 LMC Battle of the Bands. LED strips created by Alejandro Arambula, ‘12 enlivened the crowd. Credit: Chris Welch, ’13.
I'll delve more into the ways that sharing affected buzz in following sections. But the important thing to note here is that the idea itself and its manifestations were worthy of the buzz and sharing that we received later on.

2.4. Industry Perspectives

Seth Godin:
Thoughts as well as a blog entry to be posted on [http://sethgodin.com](http://sethgodin.com) based on our conversation.

There has to be a level of novelty for someone to tell someone else.

People don’t buzz about something that’s normal.

Novelty must be present.

Are you wow disabled?

Kevin asked me: Do ‘great ideas’ possess universally some sort of Wow Factor?
The problems with this question: What does 'great' mean? And who decides what 'wow' is?

The challenge is this: lots of people think they know what both words mean in their area of endeavor, and most of them are wrong.

Consider the case of web 2.0 companies. People like Brad Feld and Fred Wilson are brilliant at understanding what wow means if you’re investing. They have great taste. They have a sense for which teams and which ideas will actually turn into great businesses.

The peanut gallery at sites like Hacker News, though, don't have such great abilities (if they did, they'd be Brad, not anonymous voters). As a result, they mistake consumer wow for investor wow, and often focus on the wrong attributes.

This is endemic in the book business, which resolutely refuses to understand the actual P&L of most of the books it publishes. As a result, there are plenty of editors who continue to overpay for the wrong books, because their wow isn't the market's wow.

In his book *Money Ball*, Michael Lewis wrote about how virtually every single scout and manager in baseball was wrong about what makes a great baseball player. They had the wrong radar, the wrong wow. When statistics taught a few teams what the real wow was, the balance of power shifted.

I think that every great idea resonates early with those that have better radar than those that don’t. The skill, then, is to expose yourself often enough, learn enough and fail enough that you get to say wow before the competition does.

**My thoughts and response:**

This was an interesting piece on wow-factor in terms of what it means to specific people. In my projects, I seemed to garner that some projects were outlandish in a positive way because of key qualities: the manufacturing process and aesthetic with the cards, the LMC’s community aspect and offerings, the clock’s material. Seth’s blog entry, however, highlights the idea that ‘wow factor’ is audience-dependent, both in how they interpret whether or not something is novel and if that means something in particular to the potential success of the idea.

**Nate Ball:**

**On the implications of buzz in the media and buzz-worthiness.**

For buzz, there are swells over time, which are good to use if you can. It’s important to keep yourself on the radar. Of course, it’s very nice to have the press reflecting positively – that will help you in attracting new customers, and attracting investors.

And if the buzz is there because you’re legit, not just seemingly exciting, that’s even better. There was definitely a cool factor for our Batman device (the powered ascender.) Unfortunately, we couldn’t take advantage of all of the press swells in a way that some
companies might – the price point is too high for the consumer market, as our primary customer is the government and the technology is built to suit a more extreme set of requirements.

But we still got tens of thousands of hits to our website per day at some points. We had trouble fully taking advantage of that early on because the product wasn't mature enough during those first swells.

If you google [search]: batman ascender, we should still be the first hit. Buzz is really about how much good you can make of it. All of that has to do if it is timed appropriately.

If the novelty potential [of an idea] is very high, and it gets people excited, there is a greater likelihood of attracting people that will help you. This could be team members, suppliers, or even investors.

Generally, it's good to be buzz-worthy.

My thoughts and response:

I heard of Nate’s project when I took the class in which it was invented. It was brought up multiple times to prove, I think, that we MIT students were capable of designing products that could really take off. But what I understood at the time was simply that a student from MIT had created a real Batman-esque device.

In my opinion, it seems that the Atlas Powered Ascender has an almost intrinsic wow-factor. Who wouldn’t want one of Batman’s tools? Beyond that, the implications of not being able to fully harness the overwhelming novelty of the idea provided seems difficult.

It does seem, though, that there are many positives to having that sort of uncontainable buzz. I had not previously thought of the team member effect, whereby talented individuals want to join on with ‘cool’ projects. Looking back at the dramatic number of my classmates that interviewed alongside me for Mechanical Engineering internships at Apple, though, it makes sense. Apple has arguably one of the biggest names in consumer products as of this writing.

2.5. Conclusion

In all of these ideas, buzz and Wow Factor enabled the idea to take off. In many ways, novelty was the 1st stage engine booster to the rocket that each of these projects hoped to become.
3. Excitement. Being personally excited allows others to feel the same way.

Excitement is a key driver in taking an idea from concept to implementation. In the projects in which I have been involved, excitement is ‘the’ key driver. In ‘Honest Signals’\(^2\), Alex Pentland describes how human beings echo each other in communication exchanges, right down to their facial expressions. Using that concept looking back at various projects, I see how excitement itself played a key role.

When I tell someone about an idea, I am told that there seems to be an entire glow about me, eyes lit up and leaning forward. It’s as if I can’t keep from smiling because what I’m about to tell you is so exciting. And as I communicate that (to a willing audience), I can see their faces and eyes light up as well, mirroring my aspect. Again, this is a purely subjective interpretation, but it is grounded in scientific experimentation. ‘Honest Signals’ describes in-depth research with camera-equipped computers that actually gauge the level of agreement in the faces of two negotiating parties.

Rather than explaining how excitement for each idea manifests itself (that is done extensively in the next section), I will here go into why I, personally, as well as the team got excited about each project. Perhaps you as the reader will be able to gain a sense of my excitement. These are not my formal pitches, which are entailed in the Section 4.

*Note: The subsections below are to be read as if they occurred and were heard in conversation.

3.1. Gift of Design

The clock workshop was exciting to me as it offered a way to share knowledge and a method of creation that students at MIT don’t often have time allotted for. Aesthetic design is something that really attracts me to different products. The clocks allow engineers to explore their artistic side. My sister is a painter, currently attending the Savannah College of Art and Design and while it has been fascinating to watch her grow as an artist, I have always tried to think about where my art lies. For me, looking at the clocks, I say to myself ‘This is my art.’ Being able to share that with others in a similar situation really gets me going.

And the medium is amazing. Getting to use materials like marble and granite is a completely new aspect of rapid prototyping that did not exist several decades ago before scientists like Mohamed Hashish devised a way to add abrasives to a high-pressure stream of water\(^3\). Basically, you get to make whatever you want in a 2D plane (or 3D if you use layers).


<http://people.forbes.com/profile/mohamed-hashish/147284>
Figure 12: Standing with Lauren Lo, '13, with her clock commemorating MIT women's swimming. She's holding her swim clock. An exciting design aspect for her clock is differing materials – mirror acrylic, black anodized aluminum, and red anodized aluminum.

3.2. LaserKard

The business cards were exciting because they held with them the prospect of creating a consumer product of our own. My partner, Robert, and I were able to see all of the aspects of the design process: from manufacturing, to product design, to selling the product online. It was my first real exposure to entrepreneurship and the idea that we could make, or at least influence the rules was exhilarating.
Figure 13: One of the early photos that was to be used on the LaserKard website. This was a prototype that we manufactured from 0.060" acrylic.

3.3. LMC

The LMC had certain components that made it exciting and increased the overall level of excitement, but I think the main point was simply that we were flying by the seat of our pants. The drum-set and music equipment we used to put on the initial concert series was all borrowed. The bands – we knew them, but as a new student group, we possessed little influence. We relied mainly on luck and a lot of sweat.
I think the part that was most exciting was the notion that we were the primary drivers of the organization's creation. The 3 of us in my band were responsible, along with huge amounts of help from the people at the Student Activities Office, and of course the student bands, for putting on the shows in the end. The LMC was in very many ways a startup, and the excitement and enthusiasm that 'bringing live music back to MIT' imbued in us made us feel as if we were an unstoppable force – a perpetual motion machine.

3.4. Conclusion

Excitement has been described in the last few years by many as different 'buzz-words' like passion and fire, and however it is known, I believe it is an essential component. The clearest benefit is that it drives action over and over again. For the clocks – it was excitement and a hard grant deadline that pushed me to stay up all night creating a project portfolio (my teammate stayed up until 2 am.) In contrast, when team members failed to be excited, the project faced delays and disorganization.

With the business cards, excitement was the reason that I didn't mind pitching the idea over 100 times in one day at a conference and I would estimate more than 1,500 times (probably much more) by the end of the project. And with the LMC, that kind of unending excitement allowed us to do what it took to compete with the hundreds of student groups on campus vying for people's attention and create our own brand.
My projects have led me to believe that excitement is like a kind of fuel that motivates people to work long hours with little pay or material incentive. I have found it to be essential. I believe that the leaders and early supporters of a project must be personally enthusiastic in order to be intrinsically motivated to carry out change.
4. Sharing. An intensely freeform sharing – espousing the idea to anyone, anywhere, at any time.

Sharing is a key piece of an idea’s evolution. It allows the idea to diverge at once in many ways, out from a singular person or team and very quickly return. The excitement addressed in Section 3 drives much of the sharing that I have witnessed occurring, and this in turn, drives much of the feedback that helps to shape an idea.

The methods for sharing have become more technological. When I was 7 or 8 years old, my father would inquire if I had told all my friends about something unique that was happening by asking if I was ‘broadcasting’. Ironically, with the advent of Web 2.0, blogs, personal websites, project websites, Facebook and Google Chat status bars – I am literally broadcasting to a certain extent now.

In these projects and in others, I have tried to be as creative as I can in sharing. I take a no-holds-barred approach that involves a variety of techniques with the intent of sharing the idea with many people in a meaningful way. I have used email, splash pages (websites with a minimum amount of content, pictures, and information), physical photo portfolios, my iPhone as a mobile display device, and physical prototypes that I made a point to carry at all times.

As someone who is prone to sharing, communication methods are something that I am inherently drawn to, and as of late have begun to examine and implement strategically. The purpose of this section is to elucidate the means and methods of sharing as well as some of the benefit that it provides projects from conception to implementation. Of course, one can never know the true impact of sharing and all of the second and third-order interactions that it may inspire.

4.1. Gift of Design

The main challenge for the clock workshop was explaining exactly what a water-jet clock was in the first place. The sharing of this idea took place mainly in 2 mediums. One was an in-person pitch and explanation. Again, the purpose of showing the idea was a bit convoluted. In the first place, I was simply excited and wanted to share it with any friends or people that I thought would think it was cool.

The second and perhaps more significant form of sharing was directed toward any and all potential stakeholders. The value of stakeholders knowing about the idea is that they can then understand ways to help, potentially join the cause, or simply help to share and spread the idea themselves. The key here to remember is that my strategy is to share with anyone who might potentially be involved. I feel that this is the most opportunistic method to use, based on case after case of discovering hidden value.

But these interactions could not have occurred without some sort of collateral or presentation materials. For the clock workshop, I developed 2 methods of sharing the idea. At the core were photos of 2 clock designs that I had created.

I used these as ‘ammo’ to recruit students for the class and espouse the idea. I decided to demonstrate participants’ desire to get involved very early in the process so that the idea would
be given credibility. I had started fundraising for the project at the very beginning of the spring term of my senior year, and time was of the essence.

But to give you an idea of exactly the kind of sharing that happened, I’ll demonstrate my in-person ‘pitch’ here, using the images that I used. This pitch in particular does not contain a conventional ask, which is an important point. I am merely sharing for the sake of sharing, rather than with a particular goal in mind. In my experience, this kind of ‘zero ask’ sharing allows for a highly genuine connection between the listener and myself.

Again, please excuse the colloquial nature of my dialogue. I want it to be as accurate as possible and allow you to experience the idea in the same fashion. This pitch is between an imaginary person, James, and me.

Kevin: Hey, James. So good to see you! How have you been?

James: Great, Kevin, thanks! What’ve you been up to?

K: Oh, nothing much. But hey! – I’ve been working on this really cool project as part of my thesis. Have I told you about the clock workshop?

J: No, I don’t think so. What is it?

K: Basically, I’m teaching a workshop on how to make water-jet clocks. [Quizzical look from James] Oh, yeah – well – I’m not sure if I showed you the clock that I made after freshman year.

K: Check it out. I’ve got it here on my iPhone. (I pull out my iPhone and begin flipping through my photos. I know almost exactly where it is and go straight there.) Check it out. So – this is a clock that I water-jetted – you know like a crazy, powerful stream of water that can blast through almost anything. I did this one after freshman year, just for fun.
Figure 15: My 1st clock prototype, created Summer 2008 after my freshman year. A lifted acrylic face over aluminum.

J: Wow, that’s awesome! (Wow Factor!!! – Now I’ve actually got his attention. I’ve now benchmarked the idea in his mind as funky, aesthetically focused clocks.)

K: Thanks man, it’s a lot of fun, definitely. So for the class, you start off with a rough sketch. I did this one in pen on a paper plate.

K: (I quickly swipe my finger a few times across the screen.) And then you move to a detailed sketch. My sister, who I was designing this clock with, actually helped me trace my penciled sketch (I may/not add the point about my sister depending on how much time I think I have.)
Figure 16: The Idea – A photo that was drawn in gel ink on a disposable paper plate. Inspired by my sister, Michelle’s, eye.

K: And then lastly, we move to the real thing.

J: Wow.

K: So you can see (pointing) I used: black granite, white marble, and stainless steel. And again, this is a clock face. (just to reiterate the initial communication that these are clocks we are talking about.) So, yeah, I’m just hosting a workshop with some other seniors in Mech. E. showing a bunch of undergrad students how to make them too. (By this point, I’m all smiles.)

J: That’s really cool. (This demonstrates positive feedback and a smile to show agreement, and they might say) Wow. That eye looks like it’s kind of looking at me. A little creepy, haha.
K: Yeah (indicating agreement with their reaction). That one came out a little strange. But I’m really excited about helping out with the workshop. We’re hoping to get funding soon.

J: Definitely. That sounds like a great idea. I’d love to hear how it goes. Keep me posted.

K: I definitely will. Have a great day.

J: You too, see you.

K: Bye.

The point that I’d like to illustrate here is the beauty of the 3-7 minute conversation. At MIT, people tend to be pretty busy, and I’ve often had to send multiple emails and reschedule meetings a few times to be able to sit down for an hour with someone (student or faculty). Something that I have noticed, however, despite the fact that people are immensely busy, is that they often require small breaks to recuperate.

Work is intense, but the actual start and stop times of activities and meetings are often lax. I realize that set of circumstances is unique to MIT and similar cultures, and so I make no claim as
to how this strategy would progress in other environments and social climates. As such, my pitches have often been reproduced.

Given the busy climate of MIT and the workplace, I have realized that actual start and stop times at MIT are more lax. That said, I make no claim as to the validity of this strategy in other settings.

The advantage to the expected uncertainty of scheduled events is that I am almost always able to grab time a 3-7 minute conversation with someone. This is just enough time for a pitch or small update as depicted above.

The pitches repeat. I run through these pitches with close friends that I run into as well as stakeholders as I go along. I shall reserve this listing for the clock workshop, as I believe it is most easily elucidated here. This is a sampling of several interested friends who I may have pitched the idea to on a given day, for example. In reality, I pitched to them over the course of the week, but this is representative of average sharing numbers for me when an idea is of prominent focus.

1) Carrine Johnson: who came up with the idea for the workshop.
2) Brian Cass: my freshman year roommate. A potential candidate for the course.
3) My thesis advisor, Professor Yang: at that point, this was still the main thrust of my thesis and I eagerly sought her approval.
4) Parhys Napier: A fellow Mechanical Engineering Senior who is spending time on her thesis this semester and early on expressed an interest in building a “Hey Arnold” television show-themed clock with me. She was excited and seemed eager to help.
5) Iman Fayyad: An architecture student whom I met through a product design class we took over January a few years back.
6) Manasseh David Israel: a friend of mine who is currently studying music composition and guitar at Berklee. I shared the idea with him mainly because I’m excited by the workshop idea and want general feedback from someone with an artistic perspective.

In addition, I created a thorough portfolio to present to the MIT Council for the Arts (CFA), a group of alumni and faculty dedicated to supporting the arts through a sizeable endowment. That portfolio’s use is covered also in Section 5 in brief and is included in full in the appendix.

It is important to note that the paper portfolio was a vital way to share the idea in a concrete manner with key stakeholders such as the Head of the Mechanical Engineering Department at MIT, Professor Mary Boyce, my advisor, Professor David M. Parks, who was in charge of the Mech. E. Department’s part of the MIT 150th Anniversary Celebration, and of course the CFA. (I was also pitching the idea as one that could be presented at the MIT 150 Celebration.) The final presentation is depicted below. I saw that as an opportunity to share the meaning behind the workshop.
Figure 18: Sharing at the final presentation in the Mechanical Engineering Student Commons. From right: me, Brandy Baker, Alissa Mallinson, Nancy Ouyang, '12. Credit: Tony Pulsone.

4.2. LaserKard

LaserKard (the name of the particular business cards that we sold) held for me the first massive sharing experience in terms of word of mouth. Though I never kept an official count, I believe I pitched the venture and product no less than 2,000 times (probably more) over the lifetime of my involvement with the idea. This includes multiple conferences, competing in an MIT design competition, and telling almost everyone that I knew and many people that I didn’t.

4.2.1. How to Share

In addition to word of mouth, I used the digital medium to share our website, using websites such as Facebook, LinkedIn, and various mailing lists at MIT. The LaserKard site also got bounced around the Mechanical Engineering faculty after sending it to a few professors of mine.

4.2.2. The Use of Prototypes.

Through pitching LaserKard again and again, I realized the benefit of sharing. The most straightforward benefit is that people know that your idea exists. And I had the ‘ammo’ to prove it. For over two years, I would never be caught without a laser-etched plastic, and later, anodized aluminum business card. A recent popular phrase on the Internet relates that people have to prove their contentions with photographic evidence. In colloquial Internet meme-speak, it is often said ‘Pics or it didn’t happen.’ ‘Pics’ refer to the photographs that are ideally shareable online. As crude as this may sound, I believe that it indicates a desire from others to really take part in the sharing process and of course, to hold the one doing the sharing accountable.
For me, I adopted the mantra, ‘Protos (prototypes) or it didn’t happen.’ I simply noticed that, early on, if I spoke about the idea absent my prototypes, others would nod and smile, but the reaction simply wasn’t the same. The communication gap was closed by the use of one communication tool: the prototype.

4.2.3. The Elevator Pitch

Stories and ‘elevator pitches’ are tools that I use to communicate the idea via word of mouth. I found that stories in combination with actual other marketing touch-points offer greater credibility than plain advertising. I believe that they create a buzz about the product, allowing knowledge of it to permeate a specific community – MIT, in this case.

An elevator pitch, as it is commonly known is a fairly straightforward concept. It is the idea that if you entered an elevator with the CEO of a potential partner or sponsor company (i.e. someone potentially important to the success of your venture), you could spend 30 seconds or so giving the individual a basic run-down of your concept.

My pitches and stories took the form of anywhere from 20 seconds to 5-10 minutes. This was all dependent on how busy the other person or people were and how much interest they showed.

As I went through MIT, pitching different ideas, with the business cards being the mode in terms of quantity, I began to notice that my pitches have a certain structure.

The Anatomy of a Pitch: A unique way to tell a story.

LaserKards.

(This is as if someone asked me about the project when we were selling the plastic cards.)

1. I start with the idea in one sentence. This could even act as a stand-alone.

   LaserKard is a startup that creates custom laser-etched business cards out of a high grade plastic.

2. I then quickly move to showing them the prototype or product sample (or in the case of the clocks, photos.) I often state that this is a rule. I made the rule, but rules are rules. This lightens the situation and allows for some amount of levity in what might be construed as a sales situation, transforming it into a simple act of sharing.

   Now, I have a rule. If I talk about it, I have to show you. (I pull one out of my wallet or card holder.)
3. I explain the product, using the prototype as a prop. I sometimes go into further detail, as demonstrated below.

You see, it’s got some weight to it, but isn’t too thick at one and a half times the thickness of a credit card and the same dimensions. In fact, the card’s dimensions are different than a regular business card and ascribe to something called the Golden Ratio, found often in nature. Feel the etching too. See – we put the etching on the back so that the top would be as smooth as glass.

4. I then answer any questions that the listener might have.

(They might ask me why someone would want this business card, assessing the value proposition.) We’ve had several pre-orders and a lot of feedback, which all point to people wanting this business card to be able to stand out. Our user tests have shown that when our customers use this business card they’ll often get that first interview or meeting. I can’t make any promises as to whether or not they’ll get the job, or in some cases the girl or guy’s phone number, but what I can say is that the card will get them a first look.

(If they ask me how much the cards cost, I would say:)}
So you have to look at other laser-etched business cards, since regular paper business cards are essentially free. Other laser-etched business cards cost anywhere from just under $4 to $8 per card. We even had one shop that wanted to make them for us charging $10 per card. We felt that didn’t make any sense. Our cards are $100 for 30 cards. (I would put the total order cost first, so as to ease the sticker shock of the cost per card.) LaserKards are not the card that you give out to everyone. (This part of the pitch is to place the use case in their minds.)

I mean you could. I won’t stop you. But what we’ve found is that people will often wait until they meet someone ‘awesome’ and give them a LaserKard. You know, so I’ve got a bunch of regular business cards to hand out to everyone, but if I happen to run into a CEO or someone who could give me a job, then I give them the nice card.

5. The pitch could certainly end there. One technique, however, is to drive the pitch home with a story. *Note, I may cut out earlier parts of the pitch to advance to the story, if I feel that the clock is running down and emotive relation is the best way to deliver my point.

One of our user-testers, Ian Tracy, was a double-major in Course 2 and 16 (MIT-speak for Mechanical Engineering and Aerospace Engineering), so he already had a lot going for him. At an MIT career fair, he tried out the cards – first at a small company and on his friends. After getting a solid response he moved on to the major aircraft companies. There are only a few, so he had to make it count. He gave the rep. at Lockheed (Martin) his resume and the guy looked over it, giving a few nods. ‘Then, I hand him his business card.’ And this is how Ian told me it happened. The guy took the card and (I paint a wow-ed expression on my face) and gave him an extra nod. At the moment Ian was really happy that he had used the cards. He said to himself, ‘YES! This is awesome.’
Figure 20: Ian's first order as user tester. With such a small run product, user testing was vital. Ian was one of our 1st 3 product testers.

6. I would then ask if there were any further questions, and offer to send them the website if they wanted more information. My goal here is not to sell the product, but to simply share and communicate what the idea is.

I may not use all of the pieces entailed above, but that is the basic anatomy of a pitch. Pitches are unique methods of story-telling that fast-paced life seems to demand. Pitching is mainly an exercise in rapid, simple, and effective communication, relying heavily on the use of body language and facial expression.

I asked Zipcar founder, Robin Chase, if she ever tired of pitching her idea (I was beginning to pitch LaserKards at the time), and I was stunned at her answer. ‘No, I don’t get tired of it.’ After pitching thousands of times (especially working on my new startup), I have come to understand that there is some level of sharing where pitching almost becomes like breathing. It happens naturally and almost involuntarily.

4.3. LMC

The LMC was about sharing in a different way. From one perspective, we wanted to share about the club to help establish it as a living, breathing organization. In another light, sharing held incentives for show attendance and increased participation from campus in terms of both bands
and potential executive members. This was all done with the intent of, if the community was willing and able, taking a proof of concept to a more sustainable and enduring organization.

I recall very early on in the club talking to one of the few members of the few MIT bands that we knew when we were busy trying to book the first semester’s concert series. We were in 2.008, Design and Manufacturing II. As I shared the value points for her band, Paula Te, a fellow incoming Junior, recommended Ari Miller who was also in the lab at the time. He has since played in our concert series multiple times and won the past 2 years’ Battle of the Bands. Because I was openly sharing the LMC, Ari heard about the LMC and very quickly began contributing his musical talent and energy.

We approached sharing from multiple angles in effort to establish a new brand early on. The ‘ammo’ was the shows, other events such as guitar lessons and jam sessions, and eventually student music CD’s and the event we took over to keep it alive in Spring of 2010, MIT’s Annual Battle of the Bands.

Figure 21: Me sharing the LMC’s mission and goals with over 900 admitted students and their parents through the LMC Guitar-Off at the Campus Preview Weekend Closing Ceremony (Kresge Auditorium.) Credit: Chris Welch, ’13. Guitarists: Anders Lee, ’14, Patrick Marx, ’13.

Early on, we made use of Facebook Events, web pages that allowed members of that social network to indicate their interest and tentative commitment to attend the event. We invited over 2,000 people using this mechanism, and though many would sign up, we found that the actual attendance rate was far more driven by the bands getting commitments from friends to attend. Regardless, it was one way to get our name out there, and slowly word began to spread.
With the shows occurring roughly every other week during the term, we quickly began to amass a library of photos and later video and multi-tracked high quality audio. I established a blog (http://lmc.mit.edu/news, concert reviews), with rave show reviews (we were writing them with a kind eye.) As of this writing, the blog has received 6,479 views with the top posts receiving over 2,500 views. This data is courtesy of Posterous.com.

Beyond mass-marketing, we sought specific targets to share our new events and creations. We created a video of the student bands each sharing why the 1st semester of the LMC was indicative of a bright future worthy of support. I’ll speak more about the effects of that video in later sections. From the audio recorded at the shows as well as equipment that we as the club lent out (this was primarily my equipment in the nascent stages of the club), we created MIT’s first official contemporary student music CD.
That CD, in addition to the video and various concert photos, comprised presentations (included in the Appendix) allowed us to spread awareness and raise funds. It was a logical extension of sharing to have a physical object that we could give away (the CD is free online for download as well at http://theinfinitemusic.com). In some senses, I came to understand that when people receive a physical object, they see it as a material gift, and are more likely to use it. Given the ambiguity of the exchange, I have little data to back this assertion up with regard to the CD; it is merely a hunch based on over a dozen initial interactions with recipients of the CD.

The main point that I hope to illustrate with the LMC is that we used all of the different methods and means we had available to us. We used flyers, a blog, the CD, portfolio presentations, events, and even now a bulletin board on MIT’s Infinite Corridor.
The Live Music Connection
live music lives here.

Our Mission
1) Bring live music and those who enjoy it together.
2) Provide a quality venue for MIT musicians.
3) Promote musicianship of all levels in the MIT community.

Concert Series
The LMC is the place to see live music on campus.
Every other Friday at 8PM, in MIT's Student Center, 2 student bands play live, free shows for the MIT community. Bands get photography, multi-tracked audio, and video recordings, all free.
for booking and info, email lmc-concertseries@mit.edu

Free Guitar Lessons
We offer free introductory guitar lessons taught by experienced MIT students. It's time to pick up that guitar.
email lmc-openvenues@mit.edu
Classes of 15 taught by semester, guitars available upon request

Battle of the Bands
Every year, MIT liven's up CPW with a unique opportunity for student bands and artists to compete. The LMC donates a portion of all profit to charity.
Many compete, but only one will win.

LMC CD
(free at http://theinfinitemusic.com)
Every Spring, the LMC creates a compilation of the year's student music. Any student artist can submit their music to be on the CD, given away at Battle of the Bands. The beat goes on.

Get Involved!
email lmc-exec@mit.edu if you have any questions at all!

Figure 23: Bulletin Board Informational Poster displayed on the Infinite Corridor (main hallway) at MIT as of Spring 2011. Credit: Myself, Mark Ellis II.

4.4. Industry Perspectives

Jim Laughlin:
On the parties that the founders of Life is good threw to gain feedback. They would eventually have Jake, their main character recognized at one of these events (see Section 7.)

[Bert and John] often threw keg parties in Needham heights. They would tell stories of the road.

They would use friends and family as first responders - they would put up latest sketches of shirt ideas all over the wall. They would then encourage people to write over the wall, drawings - put check marks on the board to which phrases that people liked.
They didn’t know the marketing terms – but that’s a focus group.

**My thoughts and response:**
This process, which I had not heard of before in this context, seems to concretize and isolate the idea that sharing is important truly as a feedback mechanism. The image of friends and family writing on the walls has a very comfortable feeling associated with it from my perspective. The method in particular seems to openly ask for feedback by its very nature.

Different from their consulting trusted advisors, this is more of an open poll amongst trusted individuals. In Section 7, his discussion will turn to the ultimate use of this technique to identify an idea that could rally a nationwide group of optimistic consumers.

**4.5. Conclusion**

Sharing is the crux of my method of taking an idea from concept to implementation. It performs many functions, but ultimately the value is that sharing allows others to understand and embrace the idea. It allows them to offer suggestions, helpful advice, and suggest those who might participate.

Sharing allows the idea to grow legs and begin to stand on its own.
5. Civility. Kindness and courtesy are essential in sharing.

Civility and diplomacy, I have found, are essential in the creation process.

I have not personally seen ideas grow without these as key ingredients from those who are starting a project, including myself. Rather than iterate through strategies and methods, I will instead speak about a few brief stories: working with friendly, but often busy, administrative assistants, working with my business partner, and the Battle of the Bands.

5.1. Gift of Design

The clocks held a wonderful opportunity to demonstrate kindness and civility. Upon hearing that the course administrators (people in charge of scheduling and assuring that students complete their requirements) have information that could lead to hidden funds, I met with Brandy Baker, the Undergraduate Course Administrator.

Speaking with Brandy is always a pleasure, and we have shared several conversations during her time at MIT (she came after I did.) The opportunity for kindness is subtle here. I was approaching her with the end goal of finding hidden sums of money that could enable the project, yes, but the goal of positive sharing was also in my mind. Positive sharing is a term that draws on the various components of the project to relate positive points, namely that 1) a clock workshop was going on, 2) I thought it was a great opportunity to engage Mechanical Engineering students in hands-on learning, and 3) in light of the absence of the class Toy Design from this year’s curriculum it was going to be a great extra-curricular complement to the current for-credit curriculum.
As I shared these points with her, excitedly, she too began to light up, smiling and echoing my thoughts. The kindness here was in taking the time and courtesy to share the background of the idea with her and gain her buy-in, though I didn’t require it directly. After we shared about the idea as well as other pieces of small-talk, I happened to mention to Brandy that ‘the word on the street’ was that Professor Boyce had access to institute funds specifically for small projects and that she encouraged undergraduate projects. Brandy was very friendly and assured me that this was the case, offering various ways of going about getting in touch with her.

Following this, I politely visited Tony Pulsone, Professor Boyce’s administrative assistant. I thanked him for his time and began to politely inquire as to how I might gain Professor Boyce’s time and attention to give the clock project a look. In kind with my pleasant demeanor, he offered helpful advice on how to tailor my approach, with CC’ed emails, and yes, I could drop off that portfolio. Progress was being made all with kind thoughts in mind. The idea was now closer to implementation.

5.2. LaserKard
The business cards had a series of interactions and opportunities for kindness and civility. A main point in E.M. Forni’s *Choosing Civility*⁴ that I came to understand was the acceptance of circumstance, especially with regards to failure.

As a fairly action-bent and action-minded person, I often have a tendency to push forward, dramatizing ideas as battles to be won. But in taking an idea from concept to implementation, I began to realize that seeming hiccups along the way are merely opportunities to be civil. The following is an excerpt from my application to business school illustrating my feelings on the matter.

5.2.1. LaserKard Business School Essay Excerpt

Robert and I founded LaserKard, LLC, a personal branding company focused on laser-etched business and medical identification cards, to learn how to start a company by doing it. We have been equals since the beginning. I focus on new product exploration, design, and sales while he implements the technical end. Our latest project has been fixing up our strategically dirt-cheap Chinese Tong Li brand laser.

I had an upcoming interview, and I wanted to show cards we had cut ourselves. Robert promised me the laser would be working in time. The week approached, and all that was left was to modify the cutting program to handle images and text. Days passed without solution, but Robert remained confident. Late the night before my interview, he committed to having the cards by morning. 8:30 am came – no cards; ashen-faced, he admitted defeat, sadly stymied by one ‘killer’ coding issue. I could have been angry and disappointed, but looking at him, I felt only gratitude.

Robert was so dedicated that he had programmed all night. I realized that there would always be another opportunity – Robert was more important than a product display. More than any failure, his contributions are invaluable. Our partnership works because we trust and respect each other. A business is built on products, but those products are built by people.

5.2.2. LaserKard Reflection

As a personal case study, I would like to point out there are both strategic and personal benefits to kindness. Strategically, Robert would feel more invested in the project if I were to be kind. In fact, to do this, I also honored our partnership with an equal equity stake in the company. I believe strongly that a person’s work should be reflected by the legal ownership vested in a venture.

But personally, kindness is a huge point as well. Though engineering often calls for a purely logical assessment of the problem and solution, I have found that teams are built around caring and mutual interest in one another’s well being. That is a tenet I hope to carry into the future, and it is one that I found extremely helpful in past ventures.

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5.3. LMC

The LMC has been a medium for practicing kindness and civility. A key example is the annual MIT LMC Battle of the Bands. As our biggest and most publicly viewed event, it can often be quite a pressure cooker. Multiple goals struggle to be met as we coalesce 7 bands, a non-profit co-sponsor, judges, lights, sound, equipment, and of course the audience under one banner to have a very public competition.

In the confusion of the event (the Saturday afternoon/evening of Campus Preview Weekend), it was almost inevitable, at least in the group’s early stages, that some pieces of the puzzle would fall into disrepair, or loss.

I would like to point out that, for the LMC, I am expanding the notion of initial implementation to not only the initial fundraising for the club, but also the establishment of the club as a stand-alone entity.

In this year’s Battle of the Bands, the pieces that were neglected despite our best efforts were to some extent video recording and high-quality audio recording. This was largely in response to a bigger light show than ever, and our lack of a recording engineer dedicated to recording the show.
As a project and team leader (or co-leader in this case), I take these failures as opportunities to be kind. In the meeting that we will have today to recap the Battle, I will praise our successes and discuss our failures as failures of foresight and leadership – ones that can and will be solved.

I see it as pointless to lay blame, but rather I have come to understand that building the team up is analogous to building the idea up. New ideas are young and like children. They are messy and don't work, and sometimes are downright backwards. I believe that it is important to recognize this and respond with a measure of kindness and civility.

5.4. Conclusion

Kindness and civility seemed to allow progress. In the clock workshop, it was a signal to those helping that their opinions and advice were valued. With the business cards, it was a huge point between co-founders. And with the LMC, I found that civility was essential to the cohesion of a growing team.

I have found that an idea cannot be stewarded properly by a team if kindness and civility are not given their due, or rather should I say: When kindness and civility are introduced they allow an atmosphere conducive to innovation and creativity.
6. Guidance. Advice from trusted sources provides direction and greater perspective.

In projects in which I am not an expert (in this case, all of them), I have found that seeking and gaining the advice of trusted sources is greatly beneficial. Often this is not just for validation of the idea itself, but also for tips on how to flesh out the idea into a workable one.

6.1 Gift of Design

With the clock workshop there was much advice given, not only from the aforementioned course administrators, but also from the MIT Council for the Arts itself. Having worked with them on the LMC, I sought their council and funding for this more independent project.

I copied the technique of my LMC co-founder Tom Cervantes and set up 2 different meetings with Susan Cohen, the Director of the Council for the Arts as well as Sam Magee, the On-staff Director of the Student Art Association here at MIT. The 1st meeting was set up with the sole purpose of helping me wrap my head around the idea and understand which points were and were not appealing to the Council for the Arts as a prospective funding source.

The first meeting held as input positive feedback about it being a prospective 150th Anniversary Event for MIT, specifically on 4/30/2011, the date of a public open house expected to draw 25,000+ people to MIT. In addition, the idea of a clock workshop was exciting. I had brought along printed photos of the clock sketches and the photos shown in Section 4.

It was also recommended that I attempt to gain the confirmed support of the Mech. Eng. Labs that I hoped to use to create the clocks. Other suggestions were made with regard to potentially altering different pieces of the clock from a design perspective. I highlighted the clock face as a primary design target, but I politely took any advice that I was given, demonstrating interest by writing it down.

The second meeting was after my initial proposal and before my supporting material was due (see the portfolio included in the appendix.) The second meeting was simply me with Susan Cohen, reaffirming that I had met with people in the Mechanical Engineering Department, and updating her on the progress in terms of team members. To provide an idea for the strategy I was using before meeting with her and submitting supporting materials, below is a Work Breakdown Structure created for a project management class after the fact, but accurately so.
Figure 27: Work Breakdown Structure for communication and building of Clock Workshop concept.

With the advice of Susan Cohen and Sam Magee, my thesis advisor, as well as course administrators in the Mechanical Engineering Department, I was poised to form my final plan to get funding and launch the program.

6.2 LaserKard

LaserKard was my first startup venture, and as such I was both daunted by the task of spending sums of money on manufactured goods (minimum order quantities can be troublesome from a designer’s perspective) as well as excited and enthralled by the prospect of investing in assets that could contribute to value creation.

Though I received advice from many sources, the two sources that I would like to highlight here of key relevance are MIT’s Venture Mentoring Service (VMS) and my Design and Manufacturing II Lecturer, Professor Sanjay Sarma, who prefers to be known simply as Sanjay. The founding CTO of Zipcar, Roy Russel, also offered a bit of advice to my first venture. I knew Roy, as he is an alumnus of my fraternity.

VMS has often expressed their goal to me of developing an entrepreneur’s mindset in terms of what’s happening in the near-term (with a long-term context). Louis Goldish, one of our VMS mentors, often asked me about LaserKard, ‘What are you doing in the next 5 weeks?’ He pushed us to understand the reality of the situation. When we wanted to sell the product, one of the main pieces that he pushed us to focus on was our supplier. We decided early on that we would not
produce the cards ourselves, and based on VMS’ advice, our supply chain was a primary early target.

Professor Sarma’s advice to me was through meetings that we scheduled outside of class. I spoke to him about the applications of lean manufacturing, emphasizing that I saw the exciting process of creating a product as a learning experience. Who better to ask than an expert on lean manufacturing and supply chains? He advocated VMS’ suggestion that we keep our supply chain local so as to be able to monitor quality. I recall his speaking at length in class about the ‘evils’ of inventory. Beyond basic humor, this was a key piece of our dealing with expensive low-volume orders in order to retain the power to vary our system.

Roy Russel, of Zipcar, offered up the notion that we did not require a website and system for filling thousands of orders, but rather only the first few dozen. He cited Zipcar’s early progress, iterating through several car-tracking systems during his time there. He advocated our focusing on only as much as we would need in the near term future. This would allow us to focus on quickly iterating through different designs, both of the product and the online sales platform itself.

Figure 28: The LaserKard online design studio was a lesson in designing usable online user interfaces. We had much help and feedback on making this grandmother-poof - i.e. our grandmothers would be able to use it.

Though I could describe the start-and-stop process by which a small supply chain was created as we experienced it, I will instead elucidate the value that advice provides in the context of the fledgling idea that the cards were at the time.
The value of the advice was to allow us to think in a more farsighted manner. Though what we were doing was not terribly unique, it was all new to us. And that’s perhaps the key to their advice – it offered an ability to look ahead and anticipate potential failings, though it most certainly did not always prevent them. Examples of these failings include mainly working with suppliers that could not fulfill their commitments, but at the same time, the advice helped us work through these difficulties.

6.3 LMC

The LMC’s early launch was driven by the advice of one very centrally located advice resource and now, good friend, Paul Spangle, then Assistant Director of Student Activities. He provided advice in three main areas: programming, internally focus, and externally facing. His advice offered a way to broaden our scope and realize our vision.

For programming, he offered an early focus to our organization. We came to him with the idea that we could create improvisational jam sessions based around centralized equipment. Knowing that it would be difficult to raise the money to obtain the equipment, he posed to us the question that perhaps we should prove the music scene on campus before requesting equipment.

The notion of proving the concept was one that hadn’t previously occurred as a key focus in our minds at the time. To this end, he offered as an idea for us to create a concert series. We couldn’t be kept from his office for much of that semester as we developed the series. This was a remarkable piece in that it allowed for us to verifiably show that there was a music presence on campus and that it was in high demand.
Internally, Paul helped us to create a framework over our first year that allowed us to grow from simply the three of us creating and running a concert series into a full-fledged organization. In the spring of 2008, only a few months after we had begun, we sought to recruit an executive board. Though Tom (my co-President) and I had both taken People and Organizations, a class taught by MIT’s Sloan School of Management, we were uncertain as to what shape this event and community-focused organization should take.

Paul had seen many student groups, and he offered a great sounding board for our ideas on how to divide labor throughout the organization. The main internal point that he drove home over time was sustainability. This has ultimately led to the continuation of the organization past Tom and my imminent graduation.

Regarding the external focus, Paul understood that with such an early idea it was vital for us to keep our commitments and be mindful of how we worked with other groups. To this end, we chose to forego clear external partnerships until we had the system running. 2010 Campus Preview Weekend Battle of the Bands was an event in which we were able to give this a test run by partnering with MIT Camp Kesem, a camp for the children of cancer patients, and also partner with a fraternity and dormitory on campus. By staying focused, we were able to concentrate on and clarify our idea.
Paul enabled us to see beyond our immediate tasks to the larger implications of what our actions would mean when continued past the following weeks and school year. He pushed us to maintain a certain level of awareness that I believe was vital for the success of the project.

6.4. Industry Perspectives

Nate Ball:
**On receiving guidance and sharing with that in mind.**

There were lots of people that helped in developing our business with the government. When people see how we want to help Soldiers, and that's aligned with their core values as well, they're usually glad to help however they can.

We were genuine in that we believed in what we were doing. We were very open about seeking advice, and about taking it.

We worked for a long time on figuring out how to navigate government sales. We pitched to a lot of military brass through connections with the Institute for Soldier Nanotechnologies. Over time, we developed a better understanding of what the military was looking for, both in terms of technology and responsiveness as a supplier.

For instance, on a rapid acquisition effort, they want the technology fast – in 90 days or less, and a contract under $100K is usually easier to fund. When we were able to put together a proposal that met the customer’s requirements for both the technology and the delivery structure, we got our first sale. It took us a year and a half to figure out what the government wanted for that type of project. But after speaking with them a lot, we were able to speak their language unpretentiously and match our capabilities to their needs.

My thoughts and response:

Nate and his team were encountering a culture that they didn’t know about. It seems that they were able to learn much from their encounters with the military officials from which they learned often by trial and error (through pitching.)

In addition, they received guidance from those within the military that understood the mission of the Atlas powered ascender, regardless of the lack of strategic knowledge the team possessed. Through building this belief, they were able to build up a healthy information network, such that they could move forward to their first sale and ultimate successful contracting relationship with the United States military.

John Harthorne:
**On changing a long-held belief in his startup, turned not-for-profit organization.**
We thought that the government should create a fund. Winners come out of the challenge and would ask for X money [in investment.] The government fund would agree to put up 49% of that amount and the company would find, in 6 months, investors for 51%.

The government would not renew the initial fund, but rather we would create a private fund to make it evergreen.

But then we spoke with many different investors. And they advised us that the government would not be impartial all the time, i.e. if companies need jobs in China, or say – disrupt an industry.

They told us that actually, you’ll just scare investment away. You don’t want to burden the companies with issues from the government. It turns out now we found out that prize money creates the catalyst. This was obvious, but non-intuitive at the time.

**My thoughts and response:**

John and I also spoke about how they had switched to a not-for-profit model and it followed a similar trend. There was an inherent assumption that he and the team held, with good reason, of course that the idea could be for-profit. And after some time and much guidance, they came to understand that creating the competition as a revenue-generating model was simply an infeasible course of action. Changing MassChallenge to a not-for-profit model was a key takeaway from guidance they received.

What is inspiring is not only that they were able to garner guidance from trusted sources, but also that they were able to listen to what was important and implement the suggested changes. This exemplifies the kind of leadership to me that allows teams to take ideas from concept to implementation without initial expertise.

**6.5. Conclusion**

Starting these ideas from concepts, I had little subject matter expertise and less knowledge about how to launch them within the greater MIT community. Without the advice of others, I am certain that my teams and I would have taken much, much longer to complete even the most basic of tasks.

Whether it was connections, guidance (both internal and external), or mentorship, trusted sources of advice became mentors to us, providing us with the means to take ideas into reality.
7. Unity. A core mission allows stakeholders to rally around the idea.

This is a short section, but one I believe that is essential to allow the idea to move forward. At this point, advice has been given, the idea has evolved through sharing, and yet, there remains a lack still of official support for the idea.

This is a unique point in the process of idea growth where a vast amount of information on the actual background and support has been collected. If there were a ratio of potential to actual progress, this would be its peak.

7.1. Gift of Design

The core mission behind the clock workshop was a multi-faceted one. On the one hand, there is product design from an aesthetic perspective, something often overlooked at a technical institution such as MIT. From another angle though, there is the emotive perspective – the clocks were gifts for loved ones, after all.

One could call the centralized goal of the clock workshop positive product design. That is a term that I coined just 30 seconds before writing it here, but nevertheless it embodies the spirit of the project.

Figure 30: The class (4 of 6 students) and me. From Left: me, Brian Cass, '11, Lauren Lo, '13, Nancy Ouyang, '13, Elina Hu, '13.

The multiple facets of the core mission allowed key stakeholders to empathize. The MIT Council for the Arts understood the clock workshop’s potential as an artistic endeavor, while the
The idea of gift clocks was beginning to have a body and both the Council for the Arts Director, Susan Cohen, and the Head of the Mechanical Engineering Department, Professor Mary Boyce were considering the project and saw what it could mean for their organizations.

7.2. LaserKard

The business cards were about proving the idea to potential customers, investors (our parents), and in many ways, ourselves. What we began to understand was the notion that we were transforming a handout commodity into a scarce luxury good.

Understanding the use case of the business cards enabled us to successfully close early sales as well as justify the high price point. When we sold them on our website, prices were as follows: 4 cards for $29, 30 cards for $99, and 50 for $149. Knowing that we weren’t selling regular business cards, I began to respond to the invariable questions about pricing by benchmarking at other laser etched plastic and later, metal, business cards: $3.75 to $8 with minimum order quantities and a $50 setup charge.

We removed the hassle by lowering the price and removing the minimum orders and setup fees. Beyond just pricing out the competition, the higher price point necessitated a very specific use case.
We advocated LaserKards by stating the use case ‘rather than the machine gun approach, as with paper business cards, [the user was to] use LaserKards like a sniper rifle.’ This analogy that a special business card could complement their standard card in a method that made them remarkably effective allowed customers to understand what they were really buying.

The core mission of LaserKards was simply to provide users with something that helped them stand out to important people. Once we understood that, it was as if a fog had been lifted.

7.3. LMC

It felt as if we understood the core goal of the LMC from early on, waving the banner of live music while espousing the slogan of ‘bringing live music back to MIT.’ While I admittedly was unsure that live music had ever left, I felt fairly certain that there had to be a live music presence hiding at MIT. How else could we have had so many students approach us, inspiring Tom, Alex, and me to start the club?
The ragtag nature of the early concert series allowed us to understand what we really needed and what we didn't. Music and performance were important, yes, and as we grew we came to understand that our focus on live music was with three entities in mind: students listening to the free shows, the student bands themselves performing shows and recording music, and the club's executive board learning how to organize a community.

The thing that all of these groups had in common was their shared interest in promoting and participating in live music. We centralized our mission into 3 statements (taken from our bulletin board poster on MIT's main hallway, the Infinite Corridor): 1) bring music and those who enjoy it together, 2) provide a quality venue for MIT musicians, and 3) promote musicianship at all levels in the MIT community.
Having a core mission in the LMC allowed us to expand and grow into new programs like our free beginner guitar lessons while new members could still understand what the main goals of the club are. In addition, having those three bullet points were key for fundraising presentations and espousing the club to would-be members or performers on campus.

7.4. Industry Perspectives

Jim Laughlin:
On the beginning of Jake, Life is good’s beret-wearing main trademark character, and the idea that ‘Life is good’ being a rallying point.

One party, there was a certain image that people gravitated towards. There was something magnetic about it. People at the party wrote different phrases next to it, like – ‘this guy’s got life figured out’, ‘I want to date this guy.’ It was the first image of Jake, beret and sunglasses, and underneath was written, ‘Life is good.’

They put that design on a few shirts selling at a fair in Cambridge. Those shirts sold out rapidly – 45 min. They had never seen something sell so fast in 4-5 years - that made
them think that they’ve really got something with that idea - something that they could build a brand with.

Those three simple words hold a simplicity and big expressiveness that people respond to. There was just a huge response to the ‘Life is good’ shirts among all of their designs.

For Bert and John, this confirmed their belief that people were drawn to that optimistic message; that the glass was half full.

The optimistic message, colors, childlike simplicity, and simple words attract people.

My thoughts and response:

There seems to be something so beautiful about that statement, ‘Life is good.’ I was initially drawn to the brand, in fact, by my mother who enjoyed their positive message. Beyond my own interactions with the brand, what fascinates me about Life is good is that they seem to have isolated a very specific thought and feeling around which people rally.

They brand all of their products with that message, and in many ways, it seems that their customers, based on my discussion with Jim, identify with that message and make it their own.

7.5. Conclusion

Agreement is a subject that I thought about a great deal as these projects progressed. A core mission is the epitome of that. There is something almost magnetic about having a deeper meaning within an idea. It somehow allows others to make it their own.
8. The 1st Yes. Initial support allows further endorsement.

In the highly variable and dynamic system of idea growth, there is a point at which the tide turns. It is as if one’s team is toiling out in the cold, and someone established finally yells, ‘I suppose you’re working hard! Come on in and have something warm.’

That warmth and security is the lifting of the last real barrier to initial implementation, I believe. That is to say, it is one major player offering initial support. This could be monetary, in the form of a strategic partnership, or a mere signed endorsement.

Whatever form it may take, the initial buy-in of a key stakeholder seems to allow the gaining of a kind of momentum, which may in turn allow others to invest or support the idea. Though I understand that much more research would need to be done to form a harder conclusion, I believe that there is a sort of bowling pin effect, whereby one pin leads to others falling.

8.1. Gift of Design

For the clock workshop, there were only two supporters. The Council for the Arts (CFA) had a very established system with which I had some familiarity. In addition, there was a level of regularity in that the funding interviews are held at specific times throughout the year with funding decided upon and awarded the day after.

Logistics aside, what’s important here is the element of strategy that comes into play. At MIT, my mind has expanded to think of establishing projects as a strategic endeavor; I have come to believe that, given the same set of circumstances, one could bolster or fail to establish a project based only on the approach.

In an attempt to keep options open, I followed the strategy that we used in the past when asking for funding for the LMC from the CFA. I asked for the sum of the project costs from the CFA. I cited that the Mechanical Engineering Department had pledged shop space and project guidance; the CFA could provide the funding.
Figure 34: Nancy Ouyang, '13, with her clock face, for her parents representing a Chinese character in abstract form. The CFA paved the way for this by providing funds for purchasing unique materials with their initial donation. Credit: Tony Pulsone

After my interview failed to completely connect (my opinion only), they agreed to fund $1200 for materials, leaving the other $2000-3000 for others to fund. Though they had funded only one third of the required costs, they had given me more than enough to kick off the project.

Part two of this strategy-in-flux was to take the now monetary support received to the Head of the Mechanical Engineering Department. The facts at this point were that everything was lined up, even with materials funded, and that if the Mechanical Engineering Department could fund machine time ($2/minute for cutting on the water jet machine), we would be off and running.

The Department agreed and gave us $2000. Was it because the CFA had funded us alone? I’m sure not. However, I am quite sure that the hybrid approach to funding was something that both parties were quite amenable toward. And why not?

8.2. LaserKard

LaserKard has a very simplistic story of a similar funding domino effect. Simply put, I have never seen it happen so dramatically as happened with this project.

I must preface this with the disclaimer that both Robert and I come from families that one could call in the middle or upper-middle class. That is to say, our parents do not have millions in disposable income. I note this only to provide a sense of context to the following case.

I spoke with Dr. McIntyre, Robert’s Father on the phone twice about the idea as I recall. Robert had spoken with him multiple times before about the project as he had become involved in the few months prior. He asked me how much I expected to return on his potential investment of $2000. I thought and honestly responded some multiple from five to seven. He believed it to be less, initially as we were still learning, and agreed to give us the funding.
Though I had felt positive about the prospect of Robert’s father investing, one is never sure until a commitment is made. I was so excited that I instantly was motivated to share (see Framework, steps 2 and 3 for a thorough explanation of these tendencies.) I called my best friend and then I called my own father.

His immediate response was asking me who exactly had funded us. When I told him that it was Robert’s father, his immediate response was, ‘I’ll match it.’ I am still unsure as to exactly why, and I am unwilling to speculate on my father’s exact intentions. What I do know is that he wanted us to approach the project as a learning experience, and that, for whatever reason, he was motivated by Robert’s father’s action to take action in kind.

8.3. LMC

The LMC was more of a long shot. What was involved essentially revolved around that 1st semester’s concert series. We sought to understand the music scene on campus and prove it to the extent that we could get initial support to move away from simply borrowing the equipment as we did for the first five shows.

We set up a meeting with the organization that controls much of the space at MIT, the Campus Activities Complex. This was our chance to amaze them. Based on an idea I had about interviewing the musicians from the series, Alex and Tom filmed a video of interviews interspersed with concert video I had shot. This, along with a professionally bound brief portfolio allowed us to impress the powers that be.
We asked them for $4000 for a speaker system for the Student Center where we held our shows. They redoubled and gave us $6000 based on improved cost estimates. They wanted a system that would last once they had decided to invest.

Once the CAC was onboard, we were able to quickly gain the support of the Council for the Arts, in part because we were able to guarantee some kind of storage space. Because the CAC owned the initial equipment, we proved to the student group that organizes office space that we had demonstrated need for our own storage space. In a simultaneous award, we received the top space allocation priority among the hundreds of student groups, and also received $3000 for microphones from the CFA.

This was a bit of a strange turn of events – a Catch 22 of sorts. We had to have space to assure that equipment would be safe and locked up, but we had to have equipment to get space. Based on the CAC’s equipment, actually stored by them, we were able to receive both.

Beyond the contradictory statutes of the initial establishment of the group, there was something further that was intangible about the first $6000. One could feel the level of credibility we had in the room rise a little when we mentioned that we were already a vetted, funded organization. This, along with our being committed to being a sustainable organization allowed the CFA to go beyond their usual rule not to give organizations capital equipment (equipment meant to be used long-term).

Figure 36: Me on the LMC drum set, which, at a cost of over $3000, is one of the highest quality drum sets on campus (the best non-jazz band drum set.) Credit: Chris Welch, ’13.
The LMC has since been able to raise over $16,000 from various groups and alumni, and the wonderful piece is that it all goes to furthering the mission. The essential link, I believe, was that first belief that the CAC had in a team of only 3 students with a video, collared dress shirts and khakis, and a few glossy bound portfolios.

8.4. Industry Perspectives

John Harthorne on acquiring Desh Deshpande’s support and the events thereafter.

In April, we decided we had enough data to go talk to Desh Deshpande – I had worked with him briefly through the Global Startup Workshop. We purposely withheld some high-potential leads. I contacted Desh – ‘hey, remember me?....’ He gave us a date and time.

He had half hour slots set up for 4 hours. We sit there in the Kendall Marriot lounge waiting. Everyone’s pitching to him. Then, it’s our turn. We pitch him. He says that it’s good – and we think it’s a good idea. He says that someone should do it.

But he had just one question – ‘Have you quit your jobs?’ We had taken a package introduced by Bain that had us leaving in May.

[Desh] agreed to provide us with some introductions – we would send him a draft email with a reminder – and he would make the introductions. They included MIT’s President, Susan Hockfield, the President of B.U. (Boston University), Babson, Tufts, lots of lawyers, investors, and some rock star entrepreneurs.

And this was based only on an ugly presentation deck. With us, we brought a letter of support that we had drafted, and asked Desh if he wouldn’t mind signing it. Would he sign the page right then? It was a vague letter of general support. You know? Innovation is important. Jobs are important. These guys are good, etcetera.

The letter was addressed to Secretary Greg Biolecki, who controlled the federal distributed aid money for Massachusetts.

Out of 25 meetings (introduced from Desh) – not only did they reply. In fact, the slowest reply was two and a half hours based on a recommendation from Desh. We brought his letter of support. Seeing it, they told us - if Desh signed it, we want in.

My thoughts and response:

What is clear here is that they had done their research before-hand, were serious about an idea, and then approached a serious player. What is also clear is that once he agreed to support them, they had what has been called far greater leverage, and were able to contact the Who’s Who of Boston area entrepreneurs and leaders within the ecosystem.

What amazes me is the concept that Desh’s word and respect within the community were able to so rapidly gain them access to the time of busy individuals. It seems as if he acted as something of a gatekeeper. Once he had judged that they were serious, he gave them the keys.
The initial support garnered seems to surely allow further endorsement.

8.5. Conclusion

Managing to create projects on a shoestring budget is perhaps something of an entrepreneurial art. Perhaps even more interesting, though, is the process of increasing commitment that allows an idea to go off of what is essentially welfare and move to a more self-sustaining model.

It is as if an idea has to grow up, gain legs of its own, and begin to truly produce to make it to and past the point of initial implementation. If it were a startup – one could say that this would be Series A financing. If it’s a non-profit, it might be the establishment of an endowment or even the first major donation, depending on what stage of development it has seen.

Though variability seems to invariably play a role in the endgame manifestation of these situations, it seems also that there is some beautiful turning point at which it becomes logical for an idea to take on a life of its own – to go from being just a thought to an established organization, cause, or company.
Thesis Conclusion

Again, this is the framework:

1. Inception. The idea is born.
2. Wow-Factor. Harnessing novelty to gain initial traction.
3. Excitement. Being personally excited allows others to feel the same way.
4. Sharing. An intensely freeform sharing – espousing the idea to anyone, anywhere, at any time.
5. Civility. Kindness and courtesy are essential in sharing.
6. Guidance. Advice from trusted sources provides direction and greater perspective.
7. Unity. A core mission allows stakeholders to rally around the idea.
8. The 1st Yes. Initial support allows further endorsement.

I began with several projects and a notion that the approach my teams and I had taken might be interlinked. After a thorough examination, I would say that not only are they linked, but this process has certain properties.

First, it is a process of design. Haphazard or not, attempts are made to architect components and it is by its nature iterative and evolutionary.

Second, it is of the utmost importance that these projects and ideas possess a great deal of meaning for people. With the business cards it meant having a product that was well-designed and manufactured performing the task of standing out very well. For the LMC and the clock workshop, these goals and intents were more altruistic, but nevertheless pragmatic in nature. The LMC does build musical skills within students and give them a physical place to play. The clock workshop did teach real technical skills, despite being primarily aesthetically focused.

Lastly, the process relies on sharing. Over the course of the term, speaking to various industry experts as outlined in the interviews, I came to understand that sharing is perhaps the most vital component. It allows us as humans to create and draw connections that are worth more perhaps than the pieces of knowledge themselves.

The projects I was involved with as well as the industry experts' projects all involved sharing heavily. With the exception of Seth Godin describing idea assessment as an inner debate, all those interviewed described it as a very external process. And let us not forget that Mr. Godin has built a career around sharing his thoughts with millions around the world, having coined the term permission marketing.

What I hope has been created in this thesis is a framework that allows not only me in the future, but others as well to create projects that amaze and cause one to wonder how it was even possible in the first place.
I have remained fairly scientific in my manner throughout this work, but I will take now to voice my unfettered non-academic opinion with regard to entrepreneurship and this framework.

I believe this to be the beginning of a method with which I can approach serial entrepreneurship in my life as a whole. I have had the privilege of contributing to many new projects, and though I am still young and inexperienced, I believe that I will never tire of exploring the new.

To me, starting projects, ventures, and companies reminds me of a famous quote by Nikola Tesla.

"I do not think there is any thrill that can go through the human heart like that felt by the inventor as he sees some creation of the brain unfolding to success... Such emotions make a man forget food, sleep, friends, love, everything."

I don't wish to forget all those things, but I live seeking the kind of passion that drives that response.
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Figure 34: Nancy Ouyang, '13, with her clock face, for her parents representing a Chinese character in abstract form. The CFA paved the way for this by providing funds for purchasing unique materials with their initial donation. Credit: Tony Pulsone

Figure 35: A prototype for the first cards for sale with our company logo.

Figure 36: Me on the LMC drum set, which, at a cost of over $3000, is one of the highest quality drum sets on campus (the best non-jazz band drum set.) Credit: Chris Welch, '13
The Framework (illustrated)
Gift of Design, Clock Workshop Portfolio for the MIT Council for the Arts (CFA)

Using this brochure, I communicated the idea initially to the CFA, which gave $1200 of the $3700 we asked for. In addition, I printed glossy copies of this to give to the Head of the Mechanical Engineering Department, Professor Mary Boyce, as well as to show my Academic Advisor, Professor David M. Parks. Professor Parks was helping to head up the Mechanical Engineering Department’s representation at the public MIT 150th Anniversary Open House that occurred on April 30, 2011. This booklet was pivotal in communicating the idea visually.

The Gift of Design.

Engineering Art. A Workshop Creating Custom Water-jet Clocks.

Kevin Rustagi, with Parhys Napier and Paula Te.
Workshop Overview

8 novice designers will endeavor to give the gift of design, through the intentional creation of a marble/granite/aluminum face clock.

They will be guided in this process through the construct of a workshop held by 4 Senior Mechanical Engineering students.

This is a part of a thesis, the MIT 150, and mechanical engineering, but most of all, it is a chance for 8 students to engineer artistic design. Their paint brush is a machine allowing extreme freedom, and the real question is: What gift will they design?

We start with a rough sketch.

Why hold a workshop?

Design should be accessible. Part of the reason that I began building clocks is an intense desire to explore the possibilities of technology in the context of creating an art piece.

That this art has meaning makes it all the more worthwhile. I see clocks as a way to bring people together around the notion of gratitude and generosity. Too often, we forget those that love and support us.

In the creation of a designed clock, students will establish a deeper emotional connection with their friends and family. Their art will be a method of expression that has a purpose.

To the right is a concept for a guitar clock that is a gift for my best friend, who plays the guitar.
Why gifts?

The concept of designing a gift is important for two distinct reasons. First, it creates an implicit regard for the details of the product. Second, one begins to think of the design as a process.

What stories exist behind the idea? Who are you giving it to? What makes them special and how will your artistic design convey that?

I thought about my younger sister, Michelle, studying painting in art school currently. Her artistic vision is extraordinary. So, an eye-themed clock would be perfect for her. (full disclosure: she also helped a bit on the design detail)

Who's involved?

Applications: After a brief application release period, we have received over 20 applications for the workshop ranging from freshman to seniors, mainly in Mechanical Engineering, and all excited to experience product design.

TA's include:


Parhys Napier: MIT '11, Mech. Eng. Background in Control Systems, has designed a prosthetic leg and foot for developing world applications.


Extra support will be garnered from the Mech. E. Department should extra help be required.

Next, we take a trip to Louis W. Mian, Tile Co. (shown to the right) to select materials; granite, marble, and other unique materials. John Mian, who watches the shop, was very enthusiastic about having the students visit to select and purchase their materials.
Design Guidance

Design within a framework will allow students to grasp the key question of which materials, colors, and style they will use. The purpose of their design toward the recipient will be emphasized.

Students receive 6 tiles (1 spare) to create a clock of less than 4 square feet in dimension. Stock clock mechanisms will be used for simplicity.

How are the clocks made?

The waterjet machine is a unique tool allowing rapid precision cutting of marble, granite, aluminum, and plastics in many different patterns. Mr. Fenner of MIT Course II Pappalardo Labs has graciously agreed to provide us with essential access to the machine as well as assembly time in the shop.

The waterjet can cut almost anything <0.75" thick. The clock materials will be <0.375" thick.
Workshop Schedule

I. March 5 // March 26 - (3) Saturday sketching workshops. These begin with the basics of sketching and purpose exploration. Computer sketching will conclude these classroom sessions. Mixed in is a field trip to select materials, discussion of the design process, and creation and review of their final sketches.

II. March 28 // April 8 - (2) weeks of Waterjet cutting time - students will arrive early in the mornings at scheduled times with Pappalardo Labs.

III. April 11 // April 22 - (1-2) weeks of assembly time. This should take <1 week and the second week is meant only as a buffer.

April 30 - MIT 150 Open House.

The clock shown at right was created by Kevin in 2008 and shows dual aluminum and plexiglas cuts.

Budget Breakdown

As the workshop is part of Kevin's thesis and the Mech. Eng. Dept.'s MIT 150 Exhibition, they will contribute $2080 (currently in approval stages) for machining time.

The students will contribute the $20 cost for the clock mechanism and battery.

Suppliers: Louis W. Mian Tile Co., Lowe's, Amazon.com, dockworks.com

Backup Suppliers: builddirect.com (Tile), clockparts.com

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Cost (1)</th>
<th>#/person</th>
<th># students (incl. TA's)</th>
<th>Total (multiplied column)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiles</td>
<td>$11 (avg.)</td>
<td>7</td>
<td>12</td>
<td>$924</td>
</tr>
<tr>
<td>Clock Hands</td>
<td>$18</td>
<td>1</td>
<td>12</td>
<td>$216</td>
</tr>
<tr>
<td>Contact Cement/Epoxy/Caulk</td>
<td>$18 (Amazon.com)</td>
<td>0.4</td>
<td>12</td>
<td>$86.40</td>
</tr>
<tr>
<td>Mounting Supplies</td>
<td>$12 (avg.)</td>
<td>1 set</td>
<td>12</td>
<td>$144</td>
</tr>
<tr>
<td>Machine Time</td>
<td>$200/hr.</td>
<td>1.7</td>
<td>12</td>
<td>$4080-2080*</td>
</tr>
</tbody>
</table>

Total $3,707.44

*$2080 will be covered by Mech. Eng. Dept.
Goals

As part of the April 30th MIT 150 Open House, the clocks will be exhibited to demonstrate how engineers can create artistic pieces through design.

Stories behind their concepts and their intention for recipients will be highlighted as well. MIT students will experience design, engineer art, and share that through a seminar at the 150 Open House. The workshop will allow students to give back to those who have impacted them and do so with a form of art.

The final prototype of my sister's eye clock pre-assembly.
The Commonwealth of Massachusetts
Secretary of the Commonwealth
State House, Boston, Massachusetts 02133

November 16, 2009

TO WHOM IT MAY CONCERN:

I hereby certify that a certificate of organization of a Limited Liability Company was filed in this office by

LASERKARD LLC

in accordance with the provisions of Massachusetts General Laws Chapter 156C on November 16, 2009.

I further certify that said Limited Liability Company has filed all annual reports due and paid all fees with respect to such reports; that said Limited Liability Company has not filed a certificate of cancellation or withdrawal; and that said Limited Liability Company is in good standing with this office.

I also certify that the names of all managers listed in the most recent filing are:
ROBERT MCINTYRE, KEVIN RUSTAGI

I further certify, the names of all persons authorized to execute documents filed with this office and listed in the most recent filing are: ROBERT MCINTYRE, KEVIN RUSTAGI

The names of all persons authorized to act with respect to real property listed in the most recent filing are: ROBERT MCINTYRE, KEVIN RUSTAGI

In testimony of which,
I have hereunto affixed the
Great Seal of the Commonwealth
on the date first above written.

William Francis Galvin
Secretary of the Commonwealth
LMC Presentations

Fall 2009 Summary Used in Initial Fundraising Campaign

We bound this synopsis and provided it at our initial fundraising meetings with both the Campus Activities Complex (CAC) and the Council for the Arts, who purchased $6000 and $3000 worth of equipment for club use (non-exclusive with the CAC) respectively.

MIT Live Music Connection

Fall 2009 Summary

Co-Presidents: Tom Cervantes & Kevin Rustagi
Treasurer: Alex Arambula
Goals of the MIT Live Music Connection

The MIT Live Music Connection (LMC) is a group of musicians and musical enthusiasts from the MIT community. The group was founded as a way to bring together musicians on campus to share ideas and resources. Our mission is the following:

- Bring live music and those who enjoy it together on campus
- Provide a centralized, quality venue for MIT musicians
- Promote musicianship of all levels in the MIT community

Need on Campus

Many students come to MIT with a talent and passion for music. However, existing groups and resources overlook the needs of many musicians; groups such as MITSO, the MIT Jazz Ensemble, and A Cappella groups serve very specific genres and are limited by instrument and skill level. Shared equipment is scattered across campus dorms and is often unreliable and inaccessible. One-time events such as Fred Fest and Bexley Rocks reach only select groups due to their location on campus. The LMC is unique because it welcomes a broad range of genre and skill levels. Our Fall '09 Concert Series provided the MIT the opportunity to enjoy multiple performances in a quality, centralized venue.

LIVE! @ MIT Concert Series, Fall '09

The LMC made an impact on campus with the Fall '09 Concert Series. Five shows were held in the student center featuring 7 different bands, with an average of 50 people attending each show. Information regarding dates and band info is shown in the table below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Venue</th>
<th>Bands (genre)</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/16</td>
<td>Mezzanine</td>
<td>Levi Schmidt (Solo Acoustic) The Guitar Knives (Rock &amp; Roll)</td>
<td>75</td>
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<tr>
<td>10/30</td>
<td>Coffeehouse</td>
<td>Intergalactic Space Gunk (Funk) Supa Dupa (Gypsy Pirate Rock)</td>
<td>45</td>
</tr>
<tr>
<td>11/13</td>
<td>Mezzanine</td>
<td>Capricho (Flamenco Fusion) Castle Bravo (Rock &amp; Roll)</td>
<td>85</td>
</tr>
<tr>
<td>11/20</td>
<td>Coffeehouse</td>
<td>Hester and the Prynnes (Jazz)</td>
<td>30</td>
</tr>
<tr>
<td>12/4</td>
<td>W20-491</td>
<td>Levi Schmidt (Solo Acoustic) The Guitar Knives</td>
<td>20</td>
</tr>
</tbody>
</table>
Future Plans

The success of the Fall '09 Concert series and enthusiasm from performers, attendees, and music fans have encouraged the LMC to proceed with the following plans for the upcoming Spring '10 semester:

- **Continue the Concert Series into Spring '10**
- **Solidify LMC group sustainability**
- **Host events promoting musicianship and networking**

Six shows are scheduled for Spring '10; the Student Center venues have already been reserved through the CAC. 12 bands have expressed interest in performing¹. Sustainability will be achieved by inviting new members to join our team, and by obtaining the equipment necessary to continue the Concert Series. The LMC is also prepared to offer a variety of other events that promote musicianship and networking; a few of these are summarized below:

<table>
<thead>
<tr>
<th>LMC Events</th>
<th>Essential Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bring Your Own Guitar</strong></td>
<td><strong>Live Sessions</strong></td>
</tr>
<tr>
<td>Musicians of all skill levels are invited to bring their acoustic guitars and share songs at this fun event. Beginners will have the opportunity to learn chords from experienced players; experts can jam with their peers.</td>
<td>Band practice in the garage isn't quite the same as playing live on stage. MIT bands will have the opportunity to practice with a &quot;live&quot; setup, complete with stage, lights, and audio equipment courtesy of MIT LMC.</td>
</tr>
</tbody>
</table>

¹See attached list of interested bands

**Essential Items**

The Fall '09 concert series was made possible by pooling resources from across campus. Hosting five successful shows allowed us to identify the equipment necessary to make the LMC sustainable. The following are needed to provide quality sound and recordings for a live show²:

- **Digital Mixer**
- **Power Amp**
- **Portable Rack**
- **Passive Speakers + Accessories**
- **Floor Monitors**

²See attached Line Item spreadsheet
### Line Item Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Category A</th>
<th>Category B</th>
<th>Category C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presonus StudioLive 16.4.2 Digital Mixer</td>
<td>$1700.00 (15%)</td>
<td>$670</td>
<td>$1000</td>
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<tr>
<td>Power amp (QSC GX5)</td>
<td>$370.00 (10%)</td>
<td>$100 (x2)</td>
<td>$850</td>
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<tr>
<td>Gator GRC PU Pop-up rack</td>
<td>$400 (10%)</td>
<td>$100</td>
<td>$750</td>
</tr>
<tr>
<td>JBL Speaker Pair (JRX 115)</td>
<td>$600 (10%)</td>
<td>$100</td>
<td>$270 (x2)</td>
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<tr>
<td>Monster Cable speaker cable pair</td>
<td>$120</td>
<td></td>
<td>$350 (x2)</td>
</tr>
<tr>
<td>On-Stage Speaker Stands (SSP7585)</td>
<td>$90</td>
<td></td>
<td>$250 (x2)</td>
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<tr>
<td>Yamaha A12M Floor monitor pair</td>
<td>$350 (10%)</td>
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<tr>
<td><strong>Subtotal: $3630</strong></td>
<td></td>
<td><strong>Subtotal: $1550</strong></td>
<td><strong>Subtotal: $4340</strong></td>
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*Discounts have been confirmed through musiciansfriend.com. Only items from Category A have been confirmed.*

Grand Total: $9520
MIT Bands Interested in the Spring ’10 Concert Series

<table>
<thead>
<tr>
<th>Band</th>
<th>Genre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capricho</td>
<td>Flamenco Fusion</td>
</tr>
<tr>
<td>Castle Bravo</td>
<td>Rock &amp; Roll</td>
</tr>
<tr>
<td>ExFix</td>
<td>Alternative</td>
</tr>
<tr>
<td>The Guitar Knives</td>
<td>Rock &amp; Roll</td>
</tr>
<tr>
<td>Hester and the Prynnes</td>
<td>Jazz</td>
</tr>
<tr>
<td>Intergalactic Space Gunk</td>
<td>Funk</td>
</tr>
<tr>
<td>Jennifer Greer</td>
<td>Pop/Jazz</td>
</tr>
<tr>
<td>Levi Schmidt</td>
<td>Folk/R&amp;B</td>
</tr>
<tr>
<td>Los Camachos</td>
<td>Rock &amp; Roll</td>
</tr>
<tr>
<td>The Shallow Romantics</td>
<td>Indie/Alternative Rock</td>
</tr>
<tr>
<td>Supa Dupa</td>
<td>Gypsy Pirate Rock</td>
</tr>
</tbody>
</table>

*We have also had contact from a number of non-MIT performers wishing to play*
Fall 2010 Presentation for Council for the Arts.

We used this presentation to follow up a $4500 commitment by the Council for the Arts with a presentation to dozens of Council members at their annual meeting. Based on this presentation, one of the alumni gave us $1000 simply because she felt vested in the cause.
Mission

- Live Music
- Venue
- Musicianship
Concert Series

- 3 Semesters Running
- 16 Shows
- MIT Bands and Artists
Concert Series
20 MIT Bands & Artists

Capricho - Flamenco Fusion
Supa Dupa - Gypsy Pirate Rock / Folk
Castle Bravo - Classic & Contemporary Rock and Roll
Hester & the Prynnes - Jazz
K C Quilly - Indie / Hard Rock
The Ghetto Soul Revue - R & B
Intergalactic Space Gunk - Jazz Combo
Crossroads - Classic Rock
Jennifer Greer - Smooth Jazz
The Shallow Romantics - Hard Rock
Jebari Holloway - Reggae - Solo Guitarist / Singer
Technicolor - Funk / Dance Electronica
Never Theory - Rock and Roll
Electabuzz - Jazz Combo
The Capacitors - Hip Hop
Exfix - Acoustic / Hard Rock
Gigantic Ant - Contemporary Progressive Rock / Jazz
Levi Schmidt - Folk Singer/Songwriter
Circle of Lewis - Indie Rock
The Guitar Knives - Rock and Roll
(this slide held the promotional video featuring artist testimonials from the 1st semester's concert series.)
CPW Battle of the Bands

- 7 MIT Bands
- Camp Kesem Fundraising
- MIT Admissions Judges
Tim the Beaver Presiding
The LMC CD

- Official Student Band CD
- 11 MIT Bands, 20 Tracks
- Free Online
Open Source Music
Jam Sessions
Open Source Music

Guitar Lessons
The Future.

- New Membership
- Partnerships
- Sustainability
Big Ideas.

- Technology & Music
- The MIT Music Lounge
Thank you!
Questions?

MIT LMC

lmc.mit.edu