Challenges To Building An Open Learning Organization In Higher Education: A Scholarly Personal Narrative

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by

Robert Skiff

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Abstract

Higher education is undergoing rapid changes brought about by the ongoing financial crisis, globalization, and the rapid advancement of information technology. This scholarly personal narrative will apply assemblage theory and system dynamics to analyze the financial, cultural, and political constraints hampering change processes at traditional institutions of higher learning. Using this analysis as a starting point, the author will describe an open learning organization that addresses these issues, and how these principles have been applied to create Oplerno, LLC.—a new kind of higher educational institution.
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CHAPTER ONE: INTRODUCTION

At the age of 18 in the summer after my freshman year of college, I worked as a laborer for Breadloaf Construction. It was a tough job, where I spent every day from 7:00 a.m. until 3:00 p.m. with a pick and shovel hand-grading what would become the newsprint storage facility for the Burlington Free Press. I got the job because the masons had screwed up and bricked in a section of the wall that was supposed to allow a Bobcat into the area. Using this piece of machinery, the foreman and carpenters would have graded the floor, allowing an iron-reinforced concrete slab to be put in. Since the Bobcat couldn’t enter the building, the construction company was forced to hire laborers to work under a tin roof for two months on a job that could have been done in two days. The cost of our wages was a lot cheaper than tearing down the wall and putting it back up. I got the job not because of my skill but because I was one of the few people who applied for it. I needed the money.

Working under a tin roof on a construction site in the heat of the day is hard. It is especially brutal if you are working a pick and shovel in the compacted clay soil of Vermont. Every day the foreman would measure out the amount of ground that we needed to level. If the area was higher then expected, we loaded up a wheelbarrow time and time again, slowly bringing a half acre of ground to level. I watched the foreman and supervisor perform complex calculations and measurements using a surveyor’s tool. I glanced at blueprints, ductwork, and wiring that I had no understanding of and I worked the pick, shovel, and wheelbarrow.
One day a truck arrived with a large load of lumber. Dave Snow, my supervisor with his white beard and huge arms, called out, “Skiff! Get over here.” I put the shovel down and quickly walked over to him. “I need you to unload that lumber truck, college boy.” It was a huge task and would take me the rest of the day, but I would be out from under the furnace that was the tin roof and floor. “Yes, sir, Mr. Snow,” I replied. He answered, “Plato don’t mean much here, does he.” I laughed in the uncomfortable way that only 19-year-old shiny pennies do when called out for what they are.

When the truck was unloaded after about three hours, Mr. Snow came up to me and said, “Just so you know, I’ve read the Republic. Don’t be one of those people who can talk education and the allegory of the cave but who know nothing. There is a difference.”

It was sage advice. All around me that summer, I experienced a world where theory and action were combined in amazing complexity fueled by hard work. Trigonometry was applied; materials science, physics, and muscles deployed; and class critique and satire used to varying effect. I found many of my supervisors, bosses, and fellow workers were much better scholars—“having or showing knowledge”—than many of my professors at Middlebury. This collection of individuals created a functioning building and edifice that still stands 27 years later. The lesson I took away from that formative experience remains with me to this day: there is real wisdom and learning in a creative process that relies on praxis—the combination of theory and action.

Some formally educated people operate under the illusion that the more letters after your name, the smarter you are. There are also people—we all know them—who
will work into the conversation their institutional affiliation and rank within five minutes of meeting them. They love the title, prestige, and social position associated with their place in academia. They don’t see that intelligent and well-read people with much to contribute populate the world beyond their discipline and institution. They hide behind pseudo complexity to maintain their expertise, measure influence through citations in peer-reviewed journal articles, and wait patiently for tenure, promotion, and retirement.

This cadre is not the majority in academia, but it is a sizeable fraction of what Bourdieu named *Homo academicus* (Bourdieu, 1984). In a culture that values status and looks at learning not as an end in itself but a source of capital, we valorize methodological and theoretical orthodoxy. We forget what learning and education is for—to enrich the lives of individual human beings, not institutions or their agents.

At a certain point, I desperately wanted to join this club in the false belief that with membership would come respectability and validation. I’ve realized over the past five years that the goals of higher education are good and represent the foundation of an engaged and just humanity. However, it is the class and social structure reinforced through institutional power that makes invisible the knowledge and wisdom of the many. The desire to hold on to the center position where social, cultural, and financial capital accumulate is blinding the few in institutional positions of privilege to the rapidly changing world that exists just outside their experience. Their place within the current system constrains them.

Higher education is in a state of transformation, and its institutions are in crisis brought on by social, technological, and economic changes over the past 20 years. It is
not possible to avoid the shifts that are upon us. No matter if you’re a student, staff, faculty member, or administrator, the way in which you learn, teach, recruit, publish, and compete has already changed—you just have not experienced the results quite yet.

I know what many of you must be thinking: Who is this guy, and what gives him the right to speak this way? Over the past five years, I’ve been a student, an adjunct faculty member, an administrator, and the founder of a new kind of higher educational institution. I’ve served on academic committees, been to conferences, and experienced both the best of all that higher education has to offer and the worst of insider academic politics. From these various perspectives, I’ve watched these disruptive forces slowly build in higher education. I want to warn of what is to come in an attempt to save what is the most important relationship in education—the relationship between the teacher and the student.

My long journey through academia highlights much of what I’m speaking of here. I’ll intermix my story with those of the people and institutions I lived among. By examining the actors, we will see some of the forces that are at play in academia today.

On Being a Student/Aspiring Academic

In 2007, after working for 14 years in secondary education at a private school I cofounded with my father and wife, I realized it was time to move on. Most private secondary educational institutions fail because the founders hang on too long and outlive their usefulness and relevance. Successful ventures need new blood and ideas—turnover at the administrative and faculty level is actually the sign of a healthy institution, especially in an era dominated by rapid cultural, social, and technological change. After
working as dean of students, admissions officer, IT director, social science teacher, bus
driver, and a hundred other functions within a self-contained institution, I had hit a glass
ceiling. I was at the top of the ladder at that institution, but there was no way I was going
to go anywhere outside it with just a BA from Middlebury College. It was time to get
some more letters after my name.

A life in academia is predicated upon the collection of advanced degrees—those
letters after your name. Degrees also serve a sorting function that reproduces class and
social structures that have existed for a thousand years (Bourdieu, 1984). In Homo
Academicus, Pierre Bourdieu defines them in terms of symbolic and social signifiers that
are representative of social and cultural capital (Bourdieu, 1984). They are the “golden
ticket”—a license, if you will—to practice a craft.

It is this last function that was critical to me. No higher education institution
would hire me with just a BA to teach about education, technology, or leadership, even
though I had cofounded an innovative and effective secondary school, developed a social
science curriculum for grades 7 to 12, and created a computer modeling exchange
program with a regional government in China. I still needed the golden ticket that
advanced degrees provided.

Just like a five-foot-six kid who dreams of becoming a basketball player, I was
delusional. Sometimes the desire to achieve your dream blinds you to the world you’re
actually living in and your place in it. My plan was simple: finish a M.Ed in a little over a
year, worm my way into the Ed.D program, transfer into the Ph.D program once that got
approved, write a wonderful dissertation, apply for a tenure-track position, and live happily ever after.

How naïve was I? Such a dream might have been possible just 10 years ago, but today it is a dream deferred. It is not stretching the truth to say that many people who teach or administer graduate programs are selling a ticket for a trip to a world that no longer exists. Henry Giroux in *Neoliberalism’s War on Higher Education* writes about ways in which faculty and administrators have corporatized higher education through business practices that valorize institutional profit and individual compliance (Giroux, 2014). I think he is pointing out only part of the problem.

There is also the issue of a firmly entrenched cadre with a vested interest in maintaining the status quo. Most of the faculty and administrators I have encountered want the best for their students and society as a whole. However, there are also those whose motives are less than altruistic and more self-serving. Their numbers are small, but they do have a big impact. They assemble institutional power that places a premium on maintaining their place within a hierarchy that controls social and financial capital. (Giroux, 2014; Lobaczewski, 2007)

As an Ed.D student, I started my doctoral program with two interesting professors. One introduced us to the literature surrounding “the development of educational leaders, women in leadership, social justice leadership, and teacher supervision and evaluation.” It was an excellent class. The other professor’s course involved educational philosophy. Let me describe the context of both.
The global financial crisis in 2008 was not over in the fall of 2009 when I took these courses. Many people were concerned that large stimulus programs and the Federal Reserve’s policy of quantitative easing were creating the possibility for a bond market dislocation. This would create an overnight spike in interest rates for all United States Treasuries. Why is this important? Let me explain.

The cost of 10-year United States Treasuries determines the interest rates that are charged not only on homes and cars but also on student loans. As the interest rate increases, the long-term cost of servicing a loan also rises. Thus, a 3 percent loan on $1,000 for 10 years means that the total cost of the loan will be $1,158. However, if the interest rate rises to 6 percent, then the total cost is $1,332. When bond markets fail and interest rates rise quickly, it is not uncommon for rates to go to 12 percent. If that were to happen, the total cost of the loan would be $1,721. The interest payments alone would almost match the cost of the loan.

During those first classes, I collaborated with fellow Ed.D student Scott Baker on a paper entitled “Blowing the Last Bubble: The Frailty of Financing Higher Education and the Risks It Poses to Our Students, Communities, and Institutions.” Our analysis was spot on:

The current level of debt that students are burdened with is having the opposite effect; it alters or limits the choices they can make after graduation. Instead of experiencing a truly liberal (from the Latin “to free”) education, they are increasingly indentured to big banks, bondholders, and global financial interests. (Skiff & Baker, 2009)
We sent a copy of this paper to all the major administrators on campus, believing they might be interested in the subject. No one from the administration contacted us, and when we presented our work at a research presentation, only a few friends and family members showed up.

That golden ticket of an advanced degree also gives you a license to speak and be heard within the academy. There were many occasions during my first two years of classes when tenured professors made comments about the validity of peer-reviewed journal articles. Publishing in peer-reviewed journals was looked upon as an important goal of scholarship and a critical ingredient in the professionalization of all disciplines. In a methodology class, I was specifically told that citation of non-peer-reviewed material should be a rare thing in scholarly research. There was also emphasis on how the elite journals were the best place to publish. Lastly, the point was made that publishing in elite peer-reviewed journals was a great way to secure promotion and tenure. I believe Bourdieu is correct when he states in *Homo Academicus* that this system values the creation of scholarship which reinforces the accepted beliefs and cultural capital of the very people in control of academia—the senior scholars themselves (Bourdieu, 1984). New analysis and maverick ideas have a hard time getting traction in this kind of environment.

Peer-reviewed journal articles also take a long time to get published. After submission, it can take years for your work to make it into the hands of other academics
and get cited in their journal articles. In addition, your work lives behind a paywall that is only accessible at an affordable price if your institution pays for it. Publishing companies make money, but the authors of the articles receive nothing but a citation that can be placed on their CV. All of these gate keeping functions slow down innovation. New research and knowledge is not disseminated widely and quickly because access is limited and expensive (Peterson, 2013).

In the elite peer-reviewed journal *Nature*, the editorial board wrote an article entitled “Coping with Peer Rejection.” It was surprisingly honest in owning up to rejecting for publication some very important scientific research, “…including the rejection of Cerenkov radiation, Hideki Yukawa’s meson, work on photosynthesis by Johann Deisenhofer, Robert Huber and Hartmut Michel, and the initial rejection (but eventual acceptance) of Stephen Hawking’s black-hole radiation” (Nature, 2003). *Nature* recommended that scholars with new ideas just keep at it and find other places to publish. Just how much is this current system slowing innovation and knowledge dissemination? Would Darwin, Copernicus, or Newton even stand a chance of getting published in a peer-reviewed journal today?

I’m not very smart when it comes to academic politics. I did not submit “Blowing the Last Bubble” to a journal for publication. I wanted to get the analysis out to as many people as quickly as possible. Instead, I published it on Academia.edu.

The founders of Academia.edu got tired of working within the peer-reviewed world. Rather then submitting, they decided to create a whole new system. On their policy page they write:
Our view of scientific publishing is that once you have finished writing a paper, you should post it immediately on the internet [sic]. Peer review should be done post-publication, and it should be done by the community, Reddit-style, not by just two or three people. We believe peer review will be more robust that way.

(Academia.edu, 2014)

The steps to publish were quite simple. I created a personal profile linked to an e-mail address and then uploaded the paper. It is now on a searchable database and is listed on most major search engines.

The results speak for themselves. I placed the article on the website sometime in early 2011. Over the next several years it has been downloaded 2,781 times from over a hundred countries.

**Tuition Fees, Being Adjunct**

There are all kinds of fees you pay as a graduate student. Tuition is certainly one of them, and your ability to navigate various financial aid and scholarship programs trying to meet that cost often determines the level of stress you are under. In most cases—and this is especially the case for nontraditional students—your income drops dramatically while in graduate school. It is possible to cobble together a series of jobs that will make up for some of the loss of income you will face, or if you are lucky enough to have an employer pay for your education, then the financial stress is lowered. Most of us depend on the patronage system within graduation programs for our living.

The first year of any graduate program is about picking an advisor and navigating the politics of apprenticeship. The biggest fee you pay is your initiation into a system of
patronage that will determine your opportunities for scholarships, grant support, and even that first tenure-track job. In meetings with an advisor in my program I was told at different times:

- “Your job is to study. It is not to get involved in things that do not concern you.”
- “Would you like to work on my project involving ________?”
- “You get a job through my recommendation—that is how it works.”

Never underestimate the power of your advisor to make or break your experience or nascent career. It is very important to remember that as a graduate student accumulating academic capital, it is your relationships with faculty that determine your success or lack thereof within their network. As a graduate student, you are entering a multiyear apprenticeship in a guild controlled by the faculty who make up your college. The origin of the word college is from the Latin collegium, which means “joined by law.” A collegium also was the name associated with various guilds, gangs, and groups that banded together for mutual protection and aid on the seven hills of Rome. This more than 2,000-year-old definition still fits most colleges today.

I did a horrible job of attaching myself to a powerful faculty member and working within his or her research agenda. I’ve never really been a joiner. This lack of patronage within the faculty, combined with a broad set of academic interests, made me quite vulnerable. I just did my own thing, took the classes I needed, and continued to take intellectual and professional chances. Using the Internet, I reached out to networks outside my program to discuss educational finance and theory. I read outside the
proscribed materials and avoided any attempt to absorb the institutional norms that are part of the social and cultural professionalization that Foucault, Lyotard, and Latour have made the focus of their research (Foucault, 1977; Lyotard, 1993; Latour, 2013).

A sense of unease that started to grow within me was made even stronger by my experiences as an adjunct faculty member. The definition of adjunct is “a thing added to something else as a supplementary rather than an essential part” (Google, 2014). There is nothing more disheartening than to realize you are a disposable, nonessential person.

During my first year in graduate school, I scrambled to earn a living while taking classes. I was lucky enough to secure a few sections of online course work at a local private educational institution with a great distance-learning program. The courses were already configured, but they needed some modification every time they were run. The company’s support for faculty was excellent. However, it was still a pretty tough job due to a constant feeling of uncertainty over how many classes I would be assigned the next term. I was paid between $1,500 and $3,500 per course for my online teaching. If the class had fewer than five students, the pay for the class was lowered. Sometimes the class would even be cancelled due to low enrollment. No matter the size of the class, the maximum amount of pay I could receive was around $3,500. Furthermore, the changes that I made to the course content became the property of the institution that I was working for. Sometimes I would add to or modify the content of a class, spending hours thinking about and designing a better test, activity, or assignment. These changes became the property of the institution, and it was free to do with them what it wanted.
One of the biggest issues I faced as an adjunct was the limitation placed on how many sections I could teach. At this particular private college, I was limited to three sections every semester. If I were to get one more section, it would have qualified me as a full-time employee and made me eligible for mandatory benefits. Given the three-course limitation, my pay would never exceed $28,500 a year. This assumes that I taught nine sections per year. I never made that much money—not even close.

When you are an adjunct, you are disposable. If the institution needs you at the last minute, you get hired. If they don’t, you won’t. If they like the changes you make to your class, they automatically assume ownership of them. I suppose it might be argued that I could have always gone somewhere else to teach, but the same rules apply everywhere. While you can argue that this situation makes sense for higher education from a financial standpoint, it is clearly exploitative. For example, one educational institution offers online classes and charges around $1,500 per student for a three-credit class. The smallest class I taught was 5 students and the largest had 35, but most had between 10 and 13 students. If we look at the average cost to teach the class and the return on investment (tuition – [salary + infrastructure cost]), online courses generated between $11,000 and $14,000 per section in profit. In the year I taught six sections, I probably generated between $25,000 and $40,000 in profit for that institution.

An individual’s labor is their own, and as much as possible they should share in and benefit from the profits of their work. Adjuncts do not. They have no agency. If they object to their treatment, they do not get another class and their course materials—which
they may have created or modified—are given to someone else to teach. They are the disposable labor upon which modern higher education is being built and maintained.

**Wikis**

A week before I started in the Ed.D program, I received an e-mail from a supervisor in my department asking if I would like to come in. I had not yet secured any funding or employment that fall. The supervisor was in a bit of a bind and needed to find someone to teach a course on technology in the classroom. I jumped at the chance for two reasons: I needed the money, and I thought it would be an opportunity to show off my teaching ability to both the students and the faculty. I also wanted to be a good soldier and help my supervisor. I was given very little direction on creating or teaching the class. The book I was handed was pretty outdated and concentrated on computer usage rather than networks and/or other collaborative technologies.

This situation might seem rather shocking to non-educators, but most adjunct faculty have experienced the same thing at one point or another—being offered a class just before the semester starts is fairly normal. As contingent labor, an individual adjunct faculty member cannot refuse to take a class—the income means a lot, along with the chance that the class might become a regular offering.

One of the best things about being a new graduate student or adjunct employee is that you really do not know what you can and cannot do. You are free to experiment. This is especially the case when developing and teaching a class at the same time. At most institutions of higher learning, course outlines, syllabi, and even course materials go through a rigorous process of review by various faculty and administrative committees. I
was blissfully unaware of these and other constraints. I could not order textbooks for the class—they would not arrive in time for the start of the term—so I decided to teach by doing and create a highly interactive class that would use all kinds of network technology.

The University of Vermont uses Blackboard, a content management system (CMS), in all of its classes. However, with less than one week before the start of the term, there was no way for me to learn how to use the software, publish the course work online, and create an innovative and exciting learning environment. Forced by these constraints, I bypassed Blackboard and created a wiki to serve as a CMS.

A wiki is a website that users can modify and change through a web browser rather than having to change HTML code on a remote server (Tangent, LLC. 2012). The level of openness, transparency, and accessibility depends on the creator of the wiki. This contrasts with a CMS such as Blackboard, which limits students’ ability to participate in content creation to discussion boards only (Blackboard, Inc., 2010). I created a wiki that was highly collaborative, transparent, and open. Students could not only participate in discussion boards, they could also create content, modify lessons, and collaborate in ways that I could not completely control or keep track of. Since the course content was also open to the web, anyone on the Internet could participate in the discussions and watch the class unfold (Class of EDSC11UVM, 2012). This created a dynamic learning environment that not only altered the way in which the students interacted with me but also the way in which we exchanged information and created knowledge together.
I spent the first couple of classes explaining how a wiki worked and about the collaborative nature of the class. Instead of talking about how technology could empower student learning from a theoretical standpoint, we would apply theory to practice. A wiki in and of itself does not create a dynamic environment of exchange. While the editing tools allow for the students to change the content and engage in unconventional forms of communication outside the classroom space, this norm must be supported and encouraged by the teacher. In the case of EDSC11, students were encouraged to not only post their comments in discussion groups but also change the content of the wiki pages, which added to the creation of knowledge in this learning environment.

The page “Learning Games” is an excellent example of this dynamic. The purpose of this lesson was to introduce students to the idea that simulations and gaming are also pedagogical tools (Class of EDSC11, 2009). Students were asked to explore issues of identity and knowledge formation within the context of virtual worlds through the creation of avatars in the game World of Warcraft. In addition, they were asked to read an article on computer modeling and simulations by Mitchel Resnick of MIT (Resnick, 1994). Students were encouraged to play with two simulations—one an H5N1 virus pandemic, the other a trench warfare game—and reflect on how they might be integrated into a biology or history class (Class of EDSC11, 2009).

The technology of the wiki also creates the ability for teachers and students to communicate asynchronously. This ability opens up the possibility for different kinds of human behavior and information exchange to occur (Landow, 1994; Taylor & Saarinen, 1994). Some students used this ability to research, write, and collaborate late at night and
early into the morning. You might even argue that this newly created technological
ability allows for the creation of a more complex and critical pedagogy (Landow, 1994;
Benkler, 2006). The structure and function of this technology helps to create a context
that empowers and also constrains individual agency in very different ways.

At the end of the term, the students had produced more text and information than I
could process and grade. They had interacted with people outside the classroom and took
ownership of their learning. As a teacher, I also had learned quite a lot about how to use
technology to empower instructors and students. I outlined some of those important
lessons in a research paper for an independent study.

1. Teachers exert a powerful influence over the formation of online learning
   environments.

2. The amount of data generated by online learning environments soon becomes too
   large for the teacher to control and edit. This information overload on the part of
   the teacher allows for students to gain greater control of both knowledge creation
   and information exchange in these educational environments.

3. When students have the ability to form their own networks of knowledge creation
   and information exchange, they have the ability to produce work that is both
   complex and sophisticated.

4. Lesson content is improved by giving students the ability to modify, check, and
   improve their content.

5. Students will communicate with each other and the teacher outside of established
   face-to-face meeting times if the technology and classroom culture allow for it.
These interactions can occur at all times of the day and night and add much to the learning environment.

As a teacher, the experience also showed me that technology could transform pedagogy and that the way in which we taught needed to change in order to embrace this exciting frontier.

The students loved the class, but I never had the opportunity to teach it again. It was offered to a tenured faculty member with no explanation. I was disappointed but understood why that decision was made. From an institutional perspective, I could see the reasons behind the decision and I agreed with most of them, but from a personal perspective I didn’t like it.

The Quickening

There is a wonderful woman who works in the Department of Education and Social Services at the University of Vermont. Ginny (my name for her) commutes to Waterman every day and teaches a couple of classes and then travels around to various schools. She spends a lot of time in the car going from place to place. During those first few weeks as a doctoral student, I served as Ginny’s teaching assistant. I got to spend a lot of time listening to her lectures and watching her work. In a class of between 35 and 45 students, she would create all kinds of activities designed to teach undergraduates about various educational movements and philosophies. She was in constant motion, but always with a smile and a friendly word. It was a master class in pedagogy.

During my time as Ginny’s teaching assistant, the president and board of trustees at UVM announced the results of another transformative initiative called the Spires of
Excellence. This event, combined with a budget shortfall, resulted in rumors about layoffs at the university. While various tenured and tenure-track professors worried about changing course loads and working conditions, the contingent labor force was concerned for their jobs and their livelihoods. People were nervous, and that was made clear to me one day after a particularly long class with Ginny. She was a bit emotional and obviously had a lot on her mind. I asked what was wrong, and she said she was concerned about her job. It was an amazing revelation to me. Here was a smart, intelligent, and engaged teacher who clearly was well respected by her students. Her classes were full and the amount of work and care given to her students was excellent, but she felt insecure about her job.

“Take a look around,” I said. “You have 45 students in this class, and each is paying around $2,000 in tuition for it. That means your generating at least $90,000 in revenue with just this one class. If you include the other five courses you teach, I bet that number exceeds $250,000 a year. I know you’re not getting paid near that amount. The people in administration are not dummies—believe me they know what each person generates—so I bet your job is secure. Remember, not only do the students love you, but you’re making the university money.”

What is the point of this story? There is something seriously wrong with an institution where a middle-aged woman who has devoted most of her life to teaching, and who has clearly made great pedagogical and economic contributions to the institution’s mission, does not feel secure in her job.
Universities and colleges are in trouble. While the need for education has never been greater, their business and delivery model is breaking. (I’ll explain why in Chapter Two.) Like many struggling businesses with a deep social mission—and higher education is a business, despite its social mission—it is at war with itself. Rising costs of salaries, benefits, and debt service combined with subsidized student loans and discounted tuition has put tremendous pressure on administrators to increase revenue in any way possible. Virtually every economic, political, and/or cultural crisis within a budget cycle creates a moment of transition where the institution’s leadership puts forth some kind of restructuring plan. It is during these times when the academics with the least amount of social, political, and economic capital realize that in some way their situation will change, and not for the better. If you’re a staff member, you might be fired, have your hours cut back, or be asked to increase your area of responsibility. If you’re an adjunct faculty member, you will see your class size rise and your pay either remain the same or go down. Regardless, you realize that the institution you have worked for considers you contingent labor—you are a replaceable cog in the machine, a mere widget.

There is a lot that is good about higher education, but the way that we organize it as an institution was for a world that no longer exists. It’s time to create a new system that rewards great teachers and empowers students to take control of their own education in a way that could not have even been conceived just 10 years ago. There is no technological, policy, or political fix that will be easy or painless.

In the narrative of academia, we tell the stories of the powerful and privileged among us while largely ignoring the rest. We write about and defend tenure, the
professorate, and the integrity of peer-reviewed journals, yet we largely ignore discussions of long-term debt, the poverty of staff, and the self-reinforcing class system consisting of the faculty, adjuncts, administration, staff, and students. To our credit, the issues of race, class gender, and sexual identity are important in our critique of the world outside, but in many cases we ignore self-examination of our world within, of such issues as labor exploitation or the cycle of poverty inherent in higher education today. It is nice to think that we are in charge and our agency is secure, but we share the stage with many other actors who have their own agendas. In the academy, we ignore this dynamic at our peril.

Just as in Galileo’s time, individual agency occurs within the context of social, political, and technological assemblages/networks that influence institutions at the individual and collective scale. Too often we concentrate on the “individual in charge” (what a funny phrase, especially if used to describe a university president) while ignoring the structures and networks that are guiding his or her behavior. It is so much easier to assign evil intentions, conspiracy theories, or simple “incompetence” to the actions of others rather than looking at the deeper forces at work.

The telescope was one of the technological innovations that unleashed forces that caused a reordering of networks of social, political, and economic capital in Europe during the seventeenth century. That does not mean social change happens through technological determinism. It does mean that networks can be reordered when technology allows for new actors to take the stage and for different conflicts and tests of power and privilege to occur.
Today, a group of networks/assemblages is challenging many sacred institutions in higher education. It’s not any one factor—the Internet, smartphones, content management systems, MOOCs, the US Treasury bond market, the “edifice complex,” outsourcing, neoliberal economics, the use of contingent labor in academia, the rise of China and India, open source journals, or any number of things—but all of them combined that is generating change in the world of higher learning. The tenured professor, the 18- to 21-year-old student, the administrative building, and even the physical classroom are things that come to mind when we think of college or university. Learning and education will never cease to be valuable, but where it happens, who controls it, and what its purpose is will change over the next 10 years. Those of us who love the ideals of education, with its emphasis on teaching and research, need to recognize that profound change is already underway, and we need to become active participants in this transformation rather than ignore the inevitable crisis that is to come.

**Welcome to the Assemblage**

A university is a thinking and breathing assemblage made up of distinct parts, feedback loops, heuristic systems, and networks of exchange. By recognizing it as an assemblage, new tools of analysis can be used that allow us to understand how a human being’s agency within its assemblage is constrained. It allows us to understand just how we have been assimilated and to what extent resistance and change is possible.

When I started my doctoral program, I was initially quite excited by the prospect of taking classes and interacting with the faculty. I knew many of them from the master’s program; others were old family friends and/or former associates, and each had a deep
commitment to learning and teaching. However, as I spent more time working with and for the faculty, it became quite clear to me that their agency was constrained within various networks, structures, and assemblages that forced them to take positions seemingly at odds with some of their beliefs. For example, while we critiqued issues relating to class structure, there existed an unspoken hierarchical social structure centered on academic rank and capital. Clear distinctions, roles, responsibilities, and respect existed between senior tenured faculty, non tenured faculty, adjuncts, staff, and students, and arduous procedures, forms, and rules—stated and unstated—governed the behavior of each individual. This structure formed limits of possible action and agency within the context of institutional higher education.

In order to understand how any assemblage or institution works, you need to build a simulation of it based on data from the real world. That way you can test your understanding based on various changes in real work data and suppositions that you are making. Your simulation must be able to capture the complexity of capital flows (social, political, cultural, and/or financial) along with the ever-changing structures of power and control.

In 2009, the University of Vermont, like the rest of the world, was in the middle of a financial and political crisis. The environment was quite tense, and people were concerned about their jobs. At this time, I decided to build a simulation of the university that would allow me to understand the financial and capital constraints that it was governed by. The model was created using three kinds of knowledge. First were the published public records about the university budget, along with all kinds of outside
documentation on student loan rates, financial aid information, and faculty, administration, and staff contracts. The second kind of information I used was my knowledge and experience in starting Vermont Commons School from a financial and systems perspective. (While many might claim that a secondary school is very different from a university, structurally they share many common elements.) The last kind of knowledge I deployed to create my simulation was system dynamics modeling.

Most people think quite linearly. In other words, they act based on the belief that if they perform $x$ action, then $y$ will be the result. Many forget that correlation does not equal causality. Instead, the world is ruled by complex feedback loops involving many networks of relationships. The average human mind unaided can understand one or at most two feedback loops and predict the results of an interaction (Meadows, 2008). When you start using system dynamics modeling, your ability to capture the complex dynamics of an institution is not limited to just one or two feedback loops. Instead, you can capture the complex interplay of forces in a way that allows you to assert your agency to change the nature of the system or, at the very minimum, understand how your actions are being constrained by the assemblages and networks that you are a part of. In system dynamics, this is called mapping.

Student loans, adjunct faculty, wikis, technology, assemblage theory—these forces and ideas were all swirling around in my mind during my second year of doctoral studies. I felt that the “system” was broken, but I needed to understand what was really going on. I sat down in front of the computer and identified some of the human groups that made up the university. These included the students, faculty, administration, and
staff—the people that inhabited the university. I then listed such factors as tuition, financial aid, and student loans and slowly created a network that allowed me to trace the financial capital flows—money. Then I started to trace the interactions between these groups.

It is perfectly obvious why you would want to list the human groups that make up a university; after all, it is the people that make up an institution. However, when we start to think about capital flows, the questions becomes a bit trickier. What do we look at, where do we get the data, and how do we track it?

In order to understand how any assemblage or institution works, you need to build a simulation of it based on data from the real world. That way you can test your understanding based on various changes in real work data and suppositions that you are making. Your simulation must be able to capture the complexity of capital flows (social, political, cultural, and/or financial) along with the ever-changing structures of power and control.
CHAPTER 2: THE PROBLEM OF TRACKING CAPITAL

There are various kinds of capital—social, political, cultural, and financial. Much ink has been spilled in the attempt to define all of them, and arguments prevail to this day what each type of capital is. Some of these are easy to understand and measure, while others are elusive. I’m going to embed this discussion of capital by defining social, political, and cultural capital within the context of Bourdieu and Foucault.

In *Homo Academicus*, Pierre Bourdieu traced the impact of social capital—the skills and abilities that a human being accumulates within an institution—by examining higher education in France from the 1960s through the 1980s (Bourdieu, 1984). He measured how degrees earned from various institutions translated into tenured positions at prestigious institutions in France. In addition, he also showed how innovative scholarship always appeared at the edges of these networks and was eventually adopted by the centers of patronage after much struggle. In his work, Bourdieu used what we now call mixed methods—combining a qualitative analysis of tenured professors’ CVs with quantitative methods to help understand the way in which social capital is produced in higher education.

Michel Foucault had a slightly different take on the idea of social capital and showed in both *Discipline and Punishment* and *The History of Sexuality* that the idea of cultural capital—the assets that an individual can use to mobilize institutional authority—was embedded in various disciplinary and policy practices (Foucault 1977, 1990).

Tracing the way individual human beings use social and cultural capital at an institutional level is limited. A researcher can examine the position and title of a person in
charge of a unit, division, or institution within the context of published policies and budgets. However, it is very difficult to see how individuals actually deploy their power and use it to influence decisions and accumulate social, political, or economic capital. Let me illustrate this idea with a story.

When I was a first-year teacher at Colegio Americano de Quito in Ecuador, I did not have a textbook for my history class. At the beginning of the school year, I scrambled to create a series of readings and activities for my classes. I used sections of books, articles, and readings cobbled together from many different print sources. My primary problem was that I needed to assemble these assorted materials into a packet and make 70 physical copies every week for my students. Being from the United States, I was habituated to a culture and institutional practices where I simply made photocopies myself. At Colegio Americano, however, I needed to get a signed permission slip from the chair of the history department and the administrative secretary to make these copies. Then I had to submit the form to the men who worked in the photocopy room. They would make the copies and then deliver them to me.

I followed the procedure as it was explained to me and I waited. I waited a long time—two weeks. Still no copies arrived at my classroom.

When I went to the photocopy room and talked to the guys working there, they said they had no idea what had happened and would deliver the materials to me the next day. That did not happen. When I went into the faculty lounge for lunch and told the other foreign teachers of my situation, they began complaining about their own issues with the photocopy room. They were the same as mine. One of the more experienced
teachers said, “Look, you have to give the guys in the room a gift—become their friend and help them out. Then they will help you out and you will get your copies.” Some of the teachers got really angry about this. They said it was unethical and talked about how back home in “the States” they would be able to run the copy machine themselves.

After this comment, one of the Ecuadorian teachers walked over and said, “Look, that Xerox machine is really expensive. It is not easy to fix and it provides jobs. If one of you breaks the machine, those men will be out of work while it’s getting fixed.” That put the situation in proper perspective (and put us gringos in our place).

Over the next couple of weeks, I got to know the guys in the copy room, practiced my Spanish with them, and started doing them small favors, such as buying them lunch in the faculty cafeteria. I realized how little these gentlemen were being paid in salary. This realization, along with the fact Ecuador was suffering from hyperinflation at the time, was reducing the purchasing power of their wages between 10 and 20 percent per month. Like any rational human being, the men used their social capital (control of an institutional resource) to increase their financial capital—money, food, and resources (Soto, 2002). Soon after, whenever I submitted my photocopy requests, they were returned the same day.

The photocopy example illustrates the limitations of relying on an analysis of policy papers and institutional documents to examine networks of capital and their impacts on people, because the incident obviously would never have appeared in such documentation. However, it is also difficult to analyze the deployment and use of social capital to increase cultural capital within an institutional or cultural framework. As
illustrated by the photocopy example, power in many institutions/cultures is used in ways that are not transparent and public. It includes many informal interactions and relationships that are not captured in reports. E-mails, schedules, and texts might allow us to do a network analysis of the social capital of a college, but it would fail to capture hallway conversations, gossip, and lunch invitations that are very much a part of institutional power dynamics. There are also important ethical issues raised by the gathering of such information.

Given these constraints, it is only possible to trace one kind of capital as it flows through an institution—money. Budgets are a place where social capital is deployed by both individuals and assemblages in the never-ending struggle to increase cultural capital within an institution. I cannot study the struggle between these groups—their discussions take place behind closed doors, both physical and institutional. Game theory, psychology, psychosis, and power politics all play important parts in these complex conflicts. I would need to gain insider status—just as Bruno Latour did at the Council of State in France or Nancy Munn did among the Gawans while they practiced kula shell trading—in order to analyze both the public narrative and the and the private reality of this game of capital (Munn, 1986; Latour 2010). Instead, I am limited to analyzing what information I can access, and that means public data in a publically available budget.

**Building a Simulation of a University**

Simulations and models are important tools in modern management. Excel spreadsheets are a very simple kind of simulation, and the formulas that they are based on can be considered models. These models can capture some of the relationships between
individuals and institutions. The most important role that simulations can play in managing complex modern organizations is that the assumptions used to create these models can be made clear to constituencies—but only if leadership desires it and the community chooses to participate. It is in the creation of the assumptions/formulas where the real battle over cultural capital occurs in an institution. Let me illustrate this point using another personal example.

At the Vermont Commons School, the schedule was always changing. As the executive staff modified the curriculum, we changed not only the length of classes but also the number of sections that each class had during the week. Certain classes were only able to be offered at particular times of day. (Physical education, for example, always occurred in the afternoon because we used the facilities at a local fitness club as our gymnasium.) As we debated changes in the academic program, one of the constraints we always faced was having to determine whether the change would fit into the schedule. Would the change be possible within the context of the other constraints that we were under?

At the time, the Director of Academics created the schedules personally, and she did most of this work herself. As such, she had veto power over any change in the academic program. At some point, a major academic change was discussed and she said that it was not possible under the constraints of the schedule. A faculty member suggested that he could write a program that would allow us to see if these suggestions could be implemented. The Director of Academics opposed this on the grounds that the schedule was too complicated.
That was not a valid argument. All of the constraints could have been modeled, and the formulas used to create such a model are relatively simple, especially for a small secondary school. Her opposition to the proposal was centered around her loss of institutional power and its corresponding social capital. If you control the schedule of an institution, you have a lot of power. How many times have you witnessed an administrator say, “I’m sorry that is not possible given the current schedule”?

The same thing happens at meetings in institutions whenever the issue of profit sharing comes up. Educational institutions, like many other assemblages, are dominated by “funding formulas.” Have you ever asked what these formulas are based on or seen one in action? Where the formulas are discussed, who participates in their creation, and their public accessibility is a reflection of social capital within the institution. When you make the creation and management of these formulas more transparent and participatory, you alter the networks of social, political, and financial capital. Information is power—but so too is access and participation.

System Dynamics, Stakeholders, and UVM

Jay Forrester and Peter Senge two of the most influential advocates of the “learning organization” concept. Forrester has argued that understanding complex feedbacks in industrial processes is a key component to creating what Senge has called (in a book of the same name) the “fifth discipline.” This is an institution that constantly adjusts to its environment (Forrester, 1961; Senge, 1990). The authors both used extensive simulations and conceptual models to study organizations and believed that the management structures of all institutions could use their techniques to generate growth,
prosperity, profits, and efficiency. Senge’s elevation to the status of a management guru in the 1990s generated an ontology that called for a complete redesign of business practices that most Fortune 500 companies could not implement. It was looked upon as being too “soft.”

This is a rather superficial interpretation of both Forrester and Senge. They have pointed to a new way forward, but the challenge of their method to traditional systems of management is very threatening. Simulations and the kind of learning organizations they create are very disruptive to the hierarchies and established networks of social, political, and economic capital for one simple reason: everyone gets to participate. Although academics and administrators love to talk about openness and the participation of “stakeholders,” most will support it up to the point where their power and privilege are questioned. There is a lot of unnecessary mystery within organizations, and many individuals derive their power and influence out of controlling information and its analysis. Control of information allows you to control the agenda, but only for a while—eventually reality catches up.

The idea was simple: build a simulation of UVM and share it publicly with as many people as possible so everyone would understand the various constraints that everyone else existed under. They could play with various parameters, especially in the area of finances, and discuss strategies that would allow them to transform CESS within the context of UVM. This was all very logical, but it was naïve because I did not take into consideration the issue of social capital. To be more blunt—people do not want to give up the powers and privileges they have accumulated unless they are going to get something in return.
The power of simulations is that they allow people to look at strategies for change and evaluate the results from multiple perspectives. However, one thing needs to be kept in mind—all models are not created equal. Good models are transparent and make the assumptions of the model clear to the users (Forrester, 1961; Meadows, 2008). One of the difficulties in making these assumptions apparent is the way in which models are created. Models express relationships mathematically, and the equations can be quite complex. Excel spreadsheets, SPSS, and Mathematica are all useful tools, but they are not very accessible to the average individual (Bass, 2000; Wolfram, 2002). However, many of these models can be expressed effectively and clearly using symbolic languages that represent complex equations and relationships. Once you know the basic grammar, it is relatively easy to express relationships, feedback, and complexity in a way that is more accessible.

One of the most powerful tools that I use to create simulations is a program called iThink. Barry Richmond—a student of Senge, Forrester, and Meadows—created it. Richmond made system dynamics accessible because he created a graphical user interface composed of three major symbols that could be combined in infinite variety and complexity.

Richmond’s symbols are called stocks, flows, and rates. A stock is anything that can be measured. For example, people can be a stock, as can money, bacteria, and even abstract concepts such as happiness (provided you measure it in a particular way, e.g., determining happiness on a scale from 1 to 10). It is represented by a rectangle. A flow is a process that either increases or decreases. It is analogous to a verb—a thing that
describes action, such as increasing or decreasing. It is represented by a pipe with a valve in the middle and an arrow at both ends to show where the flow originates and where it is going. The last major symbol is a rate. Rates are things that influence how much or how little a flow is affected—a circle represents a rate. By combining stocks, flows, and rates, you can describe all kinds of relationships within a system or organization pretty easily.

When you first start to build a model it is really important to define a process you are trying to capture. The scope of your model is very important. If you are attempting to build it based on a real object or process, you must examine the kind of information you have access to. That information determines the kind of model you will build and the technique used to create it. If you are using a model to influence some type of policy or strategy, you need to understand the audience you’re building for. You might be an excellent modeler, but if it is not in a form that the stakeholders can understand, then you shouldn’t even bother. Finally, you must have significant social capital within the organization in order for this tool to be utilized (Senge, 1990; Meadows, 2008). These last two steps are critical in any change process.

When I started to build the model to capture the financial dynamics of UVM, I concentrated on the financial capital flows between various stakeholders, but I also identified a few assemblages that were important to look at from a policy perspective. I also needed to ground my analysis using the information I had available—in this case, publicly available budgets that contained revenue and expense information (University of Vermont, 2014).
You can demonstrate understanding of a system if your model can capture the dynamics of the data set you are working with over time. However, you always need to remember that your understanding is limited by the data you are working with. The model I created could not capture the cultural value of a department, the influence of tenure, the impact of student loans on families, or the value of any employee or department. It could only show how some of the relationships between various stakeholders and assemblages create financial imbalances that can lead to collapse.

A good model allows you to identify the leverage points in the system to deal with financial issues. It also identifies rates of growth that are not sustainable over time and trends that are disturbing. However, the best use of the model is that you can play with the assumptions easily and see if it is possible to change these trends. For example, the model allows you to change the rate of growth (or decrease) in the state appropriation and see how that impacts the cost of tuition. You can also look at increases in endowment spending or return. This allows you to quickly examine whether it makes sense to spend a lot of time on one particular strategy or another. A simulation can allow all the stakeholders to quickly evaluate if a particular plan will work—and who will benefit.

**Modeling UVM**

UVM is an educational institution, but it is also a business with a mission. It needs to make sure that the revenue coming in matches the expenditures; otherwise it can’t perform its mission. The source of most revenue at UVM is student tuition. Therefore, the breakdown of students into different programs is a very important element of UVM’s operational model, as illustrated in the following diagram:
There are three main sources of tuition revenue: undergraduate, graduate, and non-degree programs. UVM charges different rates for in-state and out-of-state students. Undergraduate tuition revenue generates the most amount of money, far surpassing graduate and non-degree programs. When I created the model in 2011, undergraduate tuition generated almost $250 million in revenue for UVM compared with $20 million from graduate tuition. Total out-of-state tuition (undergraduate and graduate) generated about $220 million, while in-state students generated $45 million. Models allow us to see how the parts of the system function together while also reflecting various political, cultural, or financial contingencies. For example, while it is easy to recognize the important role of UVM as an institution in Vermont, many people do not realize how dependent it is on out-of-state students.
You can diagram the population of students at UVM and determine their tuition revenue, but that is not the only thing that is important in terms of the institution’s revenue. Every year the State of Vermont gives UVM and the other Vermont state colleges a sum of money. This is also a very important part of the revenue stream. The Vermont state appropriation for UVM is a direct $40 million payment. In the future, UVM hopes to create a large endowment, and the income from this fund will also be used to support the college’s programs. All of these revenue streams can be represented and linked to create a total revenue figure.

iThink/Stella allows you to aggregate or disaggregate the various figures. You can also link stock/flow elements in new ways to quickly calculate, for example, the amount of student loan debt for the total student body as well as the average debt per individual. There are, as I have stated before, some limitations to this approach because it is very dependent on the quality of the data you are able to collect. However, the greatest utility of this approach is that people can quickly gain an understanding of the complex revenue streams at UVM.

UVM doesn’t just generate money; it also spends it. In the debates around higher education, there is lots of discussion about the “edifice complex,” i.e., the building mania that occurs on many college campuses. I modeled these expenses and included them in the simulation. (They took the form of debt service in the model.) I also included such major budgetary items as physical plant expenditures, among others. However, all these costs are small compared to salaries and benefits for UVM’s employees.
Three primary human groups are represented in this portion of the model—faculty, staff, and administration. Faculty are not broken down by adjunct and tenured/tenure track instructors in the publicly available budget (University of Vermont, 2014). The same is true of the administration and staff—the college does not disaggregate the data. That makes sense from a certain point of view, but it also does not allow you to examine the relationship between administrative and teaching costs. Everything and everyone is lumped together.

Unfortunately, nothing creates more discord in families, businesses, and institutions than a discussion centered on the appropriation of money. In the 2011 budget for the College of Arts and Sciences, administration and faculty salaries are combined and staff salaries are separate (University of Vermont, 2014). Does such an arrangement make staffing cuts inevitable when the administration and/or faculty are looking to trim the budget? Individuals naturally look for others to sacrifice before sacrificing themselves or one of their own.

Models become quite unwieldy as simulations if they are too disaggregated. In addition, I wanted my potential audience to understand the dynamics divorced from personal or interdepartmental rivalries that occur between faculty, staff, and administration. In the end, I created a structure that would illustrate how the dynamics of salaries and benefits were a major driving force in rising education costs and that it was not any one group that was to blame—everyone played a role.
Figure 2.
CHAPTER THREE: CHANGES OVER TIME

One of the wonderful things about iThink/Stella is that you can also create tables or graphs based on numbers generated by these models that allow you to quickly see changes over time. In this model, I also included the faculty pay increases as negotiated by the United Academics and other unions. Administration and staff are not cheap either, but by far the largest expense are salaries and benefits for all employees. That is to be expected; after all, they are the ones doing the work of educating the student body and governing the institution. What is not captured in the model is the distribution of salaries between the tenured/tenure track faculty and adjuncts or administration/faculty.

I also included financial aid as an expense in the model. However, it is important to remember that financial aid not only takes the form of U.S. government programs but also as discounted tuition. Discounted tuition takes the form of grants based on scholastic merit or the financial need of the student. There are other important expense streams that are captured in the model, but they do occupy the dominant role of faculty salaries and student financial aid.

I spent a lot of time playing with the simulation. I looked at various strategies and trends. I ran simulations that assumed the State of Vermont would increase its appropriation dramatically. That didn’t impact the bottom line enough to change the trend in rising tuition. I decided against lowering the faculty/administration rate of pay increase in the belief that the union would rebel and vote to strike if pay increases rates were less than 2 percent per year. Tuition rates rose anyway. I looked at changing the percentage of out-of-state students. Tuition rates rose dramatically. I cut administration salaries—it had
very little effect on the overall trend. I increased class size—that did have an effect, but not a big one on the bottom line. If increased class size means lower quality instruction, then the quality did indeed go down.

I played with all kinds of possible changes, but the only way I could significantly change the behavior of the system was to do three things—dramatically increase government subsidies, grow the number of students, and cut salaries of faculty. While some combination of these three would achieve an impact, the simulation showed me that the structural dynamics of UVM would make it impossible to generate dramatic changes without major conflict unless everyone recognized that there was a collective problem. Reform movements can succeed, but usually only during a major crisis or after a collapse.

The power of a model lies in the transparency it produces and the conversations it can create. Walk into any meeting at an institution and the most closely guarded secrets center around information and policies. Many groups have a vested financial and political interest in the status quo and keeping things as mysterious as possible. If everyone participates, then those in a position of power or privilege lose some of their influence. Tenured faculty are one of these groups that have much to lose if everyone developed an understanding of the financial dynamics in any higher education institution. For example, if faculty are the biggest expense at a university and if tenured faculty make up a large percentage of the tuition cost at an institution, shouldn’t we look at some form of shared sacrifice so that budget cuts do not fall disproportionately on staff or administration? Shouldn’t we start a conversation about productivity and how to
measure both good teaching and number of students per class at an individual faculty member level? Those are uncomfortable questions and conversations, but they are made easier when you have a model or simulation that everyone can access. I built the model and was excited to share it with people who I respected and admired to see if I could start the conversation.

**Know Your Place**

I started by sharing the fact that I had created a model with a few people in CESS. I also used a modified version of the model at a presentation on local school financing in one of my advisor’s classes. One afternoon I was called into the office of a senior faculty member. She/he stated that I needed to share the subject of a conversation I had had with a senior level administrator. “I need to know what you talked about and what was said,” then she/he added, “You are in a lot of trouble.”

I refused to comply. I had nothing to hide, but the threat of punishment for having a conversation was bullying, plain and simple. “Many of the faculty feel that you are telling them what to do and have overstepped your bounds,”He/she said.

I replied. “Can I meet with them and clear this up?”

“They do not feel comfortable doing this.”

There were some pretty bad repercussions for me. I was finished professionally in CESS. My grades and engagement suffered. When I applied to transfer into the PhD program, I was denied. One professor told me the reasons was because I didn’t have a clear research agenda, a close faculty mentor, or the analytical skills to be successful. I was the problem. I was in fear of my advisor and many of the other faculty members. I
encountered comments such as “Who got that for you?” when I was named to the executive committee of CPED. Another faculty member told me, “You have been a most difficult student.” A last little dig came from a senior faculty member who walked into my workspace one afternoon and announced, “You understand that your funding ends this year. You will need to be out of this space after classes.” I trusted no one in my program after that.

In such an environment, the kind of conversation I was trying to initiate was not possible. My model and simulation were useless in this context. You can only be a change agent in an institution if you have the social, political, financial, and institutional capital to make it happen. Working within the system only works if you are part of it. Change in traditional higher educational institutions cannot be driven by the students but will always be controlled by the senior faculty and administration. Lesson learned. Never forget your place—in my case, a graduate student. Transgress, and you will pay a price.

Starting Over

After my funding ended, I left that workspace and started to work at UVM’s Bailey/Howe library in the morning and the public Fletcher Free Library in the afternoon. I started work on a dissertation about SNAP/NSLP and direct certification under the mistaken belief that the project would be apolitical and relatively easy. I encountered roadblock after roadblock but pushed through for a while. I took stock of my situation and future prospects. They didn’t look good. Most jobs in higher education are dependent on references from faculty, and I did not trust that I would receive many (if any) good
ones. In addition, what I was finding out about direct certification was not heartening. It was a depressing time.

After one particularly difficult day at Bailey/Howe, I walked down College Street and went into Fletcher Free Library, climbed the stairs, and sat in my favorite seat on the second floor.

My mind wandered, and I again took stock of my situation. I needed a break from the SNAP/NSLP work. I thought about CPED and the simulation I created. I felt completely screwed professionally. I had started out my program with such hope, and it had turned into a complete disaster. The only thing I achieved was isolation and alienation. I had assumed that I could navigate through the program, achieve a PhD, and get a tenured position somewhere. I was so wrong and so far from even finishing. I was backed into a corner and felt so small that I just wanted to disappear into a black hole.

But I couldn’t. I had to come up with a way to salvage something. I must have looked out those windows for a while. I let my mind wander some more, got a little more angry and depressed, and thought about all the things I would do differently if I could turn back time. I decided that I would not have gone back to graduate school or applied to the EdD program; instead I would have found a completely different line of work.

In this low moment, something entered my mind—a stray chain of questions:

“What if your model is correct? What if there is no way to change higher education within its current form? Could you create one from the ground up that lowered the costs for students and increased faculty pay?”
Life needs meaning and purpose. I had a direction to travel and a problem to solve—that made a big difference to me. But there were a lot of suppositions to those questions. I looked out those beautiful windows on College Street and took out a notebook.

**Students, Teachers, and Learning**

I started by creating a list of what I disliked about higher education from my perspective as a student:

1. My choices in faculty were limited.
2. It was difficult to review the credentials/teaching style of professors before I signed on to the class.
3. I had to apply and be admitted into a program in order to learn.
4. Classes cost the same whether my professor was good or bad.
5. Teaching was secondary to research.

I then wrote down what I disliked about being an adjunct faculty member.

1. I had no job security.
2. I did not own the courses I created; the institution did.
3. The pay was determined by the institution and not by my performance.
4. The wages were low no matter what I did.
5. I could not teach what I wanted or was excited about.
Next, I listed the constraints I was under.

1. I have little money.

2. I cannot afford a building.

3. I have no credibility in higher education.

4. I have no social or political capital to draw upon in Vermont.

When you are engaged in a creative activity, it is important not to force an immediate answer. Sometimes the best thing you can do is define the problem. That is what I accomplished in those first hours. I defined my place and the resources I had to work with.

Lao-Tzu offers a wonderful piece of advice in the *Tao Te Ching*:

Thirty spokes join in one hub

In its emptiness, there is the function of a vehicle

Mix clay to create a container

In its emptiness, there is the function of a container

Cut open doors and windows to create a room

In its emptiness, there is the function of a room

Therefore, that which exists is used to create benefit

That which is empty is used to create functionality (Lin, 2006)
Sometimes when you are trying to solve a complex problem, you need to look for the empty spaces—those things which are invisible but provide functionality because of what they do not do. Form is emptiness and emptiness is form—each contains the other within it.

With this in mind, I reversed the constraints upon me and created a set of design guidelines for a new institution:

- “My choices in faculty were limited” became “Unlimited choice in faculty.”
- “It was difficult to review the credentials/teaching style of professors before I signed on to the class” became “Review credentials of teachers before you choose to take the class.”
- “I had to apply and be admitted into a program in order to learn” became “Open enrollment.”
- “Classes cost the same whether my professor was good or bad” became “Vary the cost of the classes.”
- “Teaching was secondary to research” became “Teaching comes first.”

From there, I wrote down what I wanted the faculty members of my budding institution to have:

- “I had no job security” became “Job security.”
- “I did not own the courses I created; the institution did” became “Faculty own their courses.”
“The pay was determined by the institution and not by my performance” became “Pay determined by performance.”

“The wages were low no matter what I did” became “Pay the faculty as much as possible.”

“I could not teach what I wanted or was excited about” became “Teach what you are excited about.”

All that I thought was bad about my higher education experience could form the design characteristics of a new institution, perhaps even the beginnings of a new educational movement. These bad experiences could be resolved if I could design something different and help give it life by making it real.

**It Is All about the Student/Faculty Relationship**

Education should always be about the teacher and student. Whatever strengthens that relationship is good and whatever weakens that relationship is bad. It is this relationship which impacts learning the most. Every idea or solution that I came up with had to improve the relationship between faculty and student while maximizing their agency.

If teaching and learning were going to be my focus, then I needed a completely different institutional design. Building a brick and mortar institution was not possible. I didn’t have the money. I started to look around at various virtual classrooms—what in the business is called LMS, or learning management systems. I looked at Blackboard and Angel, the largest of these systems and owned by the same company, as well as Moodle.
I read all kinds of LMS technical manuals and made appointments with their sales representatives for demonstrations.

A classroom is the place where students and teachers interact. The “place” does not have to be a physical location, but what must remain at the center is the interaction (Freire, 1993; Resnick, 1994; Taylor & Sarrinen, 1994). I’ve been a student in many classrooms where the professors stood up and lectured. They spoke for most of the entire class and drew notes on a chalkboard. Is this type of pedagogy any different from that offered by YouTube videos? The only difference I saw was in the delivery method. I’ve sat in other classrooms where teachers facilitated excellent discussions and worked with students to explore complex ideas, but interaction was limited to the assigned classroom time. Is this a better pedagogical technique than a virtual classroom, where interaction occurs via video, audio, and text, both in a synchronous and asynchronous environment with people living all over the world? Should a learning environment be open 24 hours a day, 7 days a week and not be limited to class time and office hours?

There are all kinds of traditional learning institutions that talk about accessibility and inclusion. They take pride in their scholarships, financial aid, racial/economic diversity of their student body, and “eliteness.” But how can you be accessible and inclusive when students are forced to move from their hometowns and countries in order to attend school? How can you claim to be accessible when classes are only offered at a certain location during a specific time of day, where you need to be physically present in order to participate? If the classroom is still looked upon as a physical space, you are limiting the number of people who can access the system. Is it any wonder that higher
education in the United States is so focused on the 18- to 24-year-old demographic? Should it instead focus on making higher education accessible to everyone at all times regardless of time and place?

Again, the major LMS systems at the time were Blackboard, Angel, and Moodle. To be honest, they were pretty disappointing. Either they cost a lot of money to implement—Blackboard wanted over $100,000 to set up a basic system—or they didn’t have a really good graphical user interface (GUI), were a pain to support, and were lacking in network security. Moodle didn’t have video support, its GUI was awful, and it forced you to invest in costly servers. Angel was owned by Blackboard and, while it was a pretty good product, its future was uncertain.

The biggest problem that all these LMS programs shared was their business model—it was predicated on vertical integration rather than openness. Vertical integration was all the rage in the late twentieth century and remains so in the early twenty-first century, but it has its drawbacks (Drucker, 1993; Amin, 1995). For example, Blackboard tries to sell you a bunch of products besides an LMS and then adds on extra costs to support these services. The cost structure is based on the institution rather than the individual. Thus, no matter how much a student needed out of the institution, he or she still had to pay the same amount of money to get it. In order to create a basic system, I was going to need to come up with around $100,000 per year and around $60,000 in implementation costs. That was way beyond my budget.

The best LMS I found was from an upstart company called Instructure. They produce a program called Canvas. What was really nice about this program was that it
had an open API. That means that it publishes the source code. This has a lot of advantages. First, such open source software is much more secure—vulnerabilities in the software are exposed quickly because everyone has access to it. Second, since the code is open, it is easy to build extensions in the program or integrate the software with other programs. This lowers the cost of software creation and maintenance. Most importantly, Instructure charged a per-user fee and offered free accounts to faculty. All I needed to do was come up with money to support 250 students at $20 USD apiece—total cost to me around $5,000. That certainly was lower than Blackboard. I could swing that cost.

Canvas also had the best virtual classroom space. The program allowed video, audio, and text-based synchronous and asynchronous interaction. This means that students not only could avoid having to be in the same place to interact, but they could have discussions that would be spread out over a day so that students and faculty from all over the world could participate. Canvas could even be accessed using a smart phone! Accessibility to higher education is often talked about in terms of dealing with finances and student loans that would enable an individual to attend classes at a physical institution. What about the billions of people on the planet who cannot move from their communities? Wireless access is becoming ubiquitous in urban areas all over the world. The costs of a smart phone is cheap, and while typing on them is a little tough, it is better than nothing.

The point is, the technological hurdles to universal, high-quality, globally accessible education are coming down, but cultural and financial ones remain.
Marketplaces Are Not Always Evil

I had found classrooms that I could use in the form of the LMS Canvas. However, that was just the first step. How do we connect the teacher and the student?

There is justified anger over the excesses of corporate capitalism today. Global corporations have assumed power that is almost unchecked and engage in plutocratic behavior that sacrifices people, the environment, and cultural diversity of all kinds to the god of profit (Hardt & Negri, 2000; 2004; 2009). Every day we are confronted by insider deals, insular elites, and regulatory secrecy that places our common heritage in jeopardy. Corporate capitalism is a huge problem because it operates in secret and for the benefit of the few.

Resistance to the excesses of capitalism or any other exploitative hierarchical system may take many forms. Marx argued that eventually the capitalist system would collapse under its own weight and be replaced with collectivism and leadership of the proletariat (Marx, 1887). The historical record as interpreted by Thomas Piketty in *Capital in the Twenty-First Century* shows that the accumulation of wealth by smaller and smaller segments of the population is almost inevitable (Piketty, 2014). For Piketty, the solution is high taxes and redistribution of wealth—the usual policy prescription in the twentieth and early twenty-first centuries that empathizes the power of the state to solve societies issues. But just who is going to do the redistribution, and who will it benefit? Those who control the politicians and bureaucracy usually do (The Invisible Committee, 2014).
The power of capitalism lies in the mutual support of its networks. There is something dynamic and self-organizing about capitalist networks (Benkler, 2006). They adjust quickly through the agency of their members more rapidly than most hierarchical systems (DeLanda, 2006). This is probably the reason for the failure of most command and control economies when compared to their more decentralized counterparts (Fukuyama, 1992). Yet these nonhierarchical systems can be captured and manipulated, especially if you control information flow and access.

This past decade has shown us all kinds of examples where networks—in the form of financial markets—have been manipulated. In the 2008 financial crisis, the normal methods of both risk assessment and price discovery prevented buyers and sellers from knowing the value of the asset they were buying. In the case of mortgage-backed securities (MBS) sold by JP Morgan, the company made “serious misrepresentations” (financial speak for “lied”) about the value of these assets to investors (Shepherd Smith Edwards & Kantas LTD LLP, 2014). JP Morgan was able to take advantage of these investors because it controlled the information flow and manipulated it to its own advantage, stealing billions from investors and the public in the process. The only way JP Morgan was able to do this was because of its dominance of a particular part of the network that matches sellers and buyers of MBS. It controlled the market because it controlled the information flow.

In higher education, individual institutions control the price of tuition and classes. They control when classes occur and who offers the courses. It is a one-price-for-all at the undergraduate and graduate level. Institutions even collude on offering a common
standard for the evaluation of financial aid to prevent bidding wars for scholarship candidates and tuition costs (Carstensen, 2001). The Chronicle of Higher Education states:

Consumer perceptions of the quality and value of an institution are important, but so is price. Any applicant or parent makes a trade-off between institution’s price and perception. Low-interest loans, scholarships, and grants are basically no different from the rebates and low-cost financing that automobile manufacturers offer to make their products more attractive (Carstensen, 2001).

Access to teachers and their information is also controlled. As a student, your course selection is limited, and you have limited means to evaluate the quality of an instructor before you sign up for a class. Student reviews and an instructor’s writings, job experience, and grants are generally not easily accessible to the student. We have all experienced classes where a professor was not a very good instructor. They might be excellent at research, but their skills pedagogically were not a good match for your learning style.

For example, earlier I mentioned a lecturer who was an excellent teacher and whose pedagogical technique was very engaging. I have also taken a class where the professor used outdated methodologies and created a very authoritarian atmosphere. The class did not meet my expectations or those of many of my classmates. That professor makes almost double the level of the lecturer (University of Vermont, 2014).
You can argue that these individuals are different because they have different levels of experience, education, and responsibility. However, if teaching is the purpose of education, shouldn’t they be compensated differently based on the views of the students who are being taught? At most institutions of higher learning, compensation is not based on teacher performance; it is determined by degree earned and years served. This is not a reflection of pedagogical ability. The institution controls information flow, the market, and the choices offered to students. How much real choice does a student have? It may be more of a distribution system designed to maximize the capital of senior faculty and administrators rather than student choice or adjunct faculty pay.

Markets are constructs and reflect cultures that create them. They can generate tremendous diversity—think the Internet, the kula shell trading of the Gawan, or the diverse trading networks of pre-colonial North America (Woolf, 1982; Munn, 1986; Benkler, 2006). Markets can also be manipulated into exploitative regimes that generate inequality, such as JP Morgan, the Opium Wars between China and Great Britain in the nineteenth century, commodity-dominated countries, and neo-liberalism (Hardt & Negri, Empire, 2000; Piketty, 2014). Markets can work, but only if there is transparency and information flows equally between agents exchanging one thing for another. You need to be committed to transparency and maximize the amount of information that can be shared. Then you have to maximize choice for all parties. If this happens, you can avoid the possibility that one agent or network will dominate. Markets are at their most repressive when they appear to be free and transparent but are rigged to benefit a small group of people.
Let me illustrate these points by using a decidedly nonpolitical, nonpartisan example. The popular game World of Warcraft (WOW) is played all over the world and has millions of participants. World of Warcraft has marketplaces located throughout the game that operate in the major cites of its imaginary world (e.g., Stormwind, Undercity, Ironforge, Darnassus). There are over one hundred different realms where between 6 and 12 million people buy and sell all kinds of goods in an interconnected marketplace (Blizzard, 2004; Castronova, 2005). Players who want to sell something list the good, the price, and the amount. Buyers search for exactly what they would like and buy the goods with a virtual currency that they collect by finishing quests, killing monsters, and trading in the marketplace. You can even trade your virtual gold in for real gold. In 2009, WOW generated over $3 billion in economic activity. “More than 100,000 people in countries such as China and India earn a living through online games...” (Palladino, 2011). The transactions, pricing, and access to the markets are open and very transparent. Since anyone can participate, the economic activity that happens in a day is truly staggering.

I’m not really sure when I made the connection between virtual marketplaces and higher education, but at some point I began to wonder: Could you just get rid of the structures that mediate between teachers and students? Could markets act as a network of exchange that would allow for students and teachers to find each other without all the overhead, bureaucracy, and policies that make higher education so expensive? Students at any particular institution have very little choice about who they are going to study with once their institutional choice is made. What if you modeled your institution after the marketplaces in WOW, where anyone could offer a class (as long as they had a master’s
degree), and anyone could learn whatever topic they would like as long as they had the prerequisite skills? Why not allow the teachers to set the price of a seat in their class? Why not let the students choose the teachers based on what they wanted to learn, when they wanted to learn, and the cost of the class? Why not create a marketplace and base it around the Agora—the center of ancient Athens where learning and commerce came together. There are lots of examples of such places throughout history, including the Srivijaya Empire of Sumatra and the acclaimed Buddhist monastery at Nalanda, India, to name just two. These were times and places where teachers and students connected in a marketplace, and systems of exchange and patronage developed.

Would a marketplace actually work as a way to organize and operate an institution of higher learning? What would the business model need to look like in order for it to be sustainable? If you gave teachers and students more power, would it be possible to increase their agency relative to those of institutions and administrators?

**Faculty Own Everything**

One of the first persons I shared this idea with was my father. Robert Skiff Sr. is a former college president. At 36 years old in 1977, he took over the presidency of Champlain College. At the time the school primarily offered professional two-year associate degrees. Along the way, his team created one of the first online educational degrees and transformed the college into a four-year regional institution known for its innovative programs and adaptability.

I told him about my idea of a market-driven institution, which he acknowledged was “very different from the current system.” We talked about getting accreditation for
the classes, governance, recruiting the faculty, and admissions for the students. “This is an enormous task,” my father said, “but it just might work.”

I saved the most controversial part for last. “Faculty should get the bulk of the tuition payments from students,” I said. “They should get at least 80 percent of the tuition revenue they generate. This will create real incentives to reward great teachers again. If they are able to set their own rate of payment and own their course content, then they can earn a good living, especially if we keep the classes to under 25 students per section.”

“Why don’t you just split the tuition 50/50?” my father asked.

“The whole point is to create incentives for faculty to teach. If we split the money 50/50, then they need to charge a whole lot more for a course. The beauty of this system is that since they own the content, faculty will develop it without cost to the institution. Development of a course, certificate, or degree program costs thousands of dollars. If faculty are incentivized to create and own their own courses, then development costs fall dramatically. If a faculty member charges $500 for a class and teaches 20 students, he or she can earn $8,000 a section. That is a lot more money than they would get anywhere else. If they charge $1,000, then a faculty member can earn $18,000 a section. Paying $1,000 for a three-credit class is still cheaper than the local institutions and makes us very competitive nationally and internationally.”

“What classes are you going to offer initially?”

“Faculty decide what classes to offer. I’m not going to pick and choose or try to recruit specific disciplines. That is something that raises the costs in higher education dramatically, and institutions do a poor job of picking the next discipline and course to
develop. There are also layers upon layers of committees and politics that you need to navigate in order to create a new course or program. Shouldn’t an individual faculty member be able to develop a course, have it reviewed for quality, and then offer it without all the politics? Let the students decide if the subject is worthy of study! Let the students be in charge of who they want to work with! We need to be an open learning and teaching organization.”

Over the next month, I started to talk with more people about this idea of the open learning organization. I asked a few friends what they thought about it. I have a lot of crazy ideas, and a lot of them do not work out. Sometimes they are conceptually ill conceived, some do not make economic sense, and others have failed simply because I couldn’t pull it off. If you are going to be creative, you need to understand that failure will be a constant companion. When you are creating something that does not exist—when you are going from nothing to something—there will be a lot of detractors and critics (Thiel, 2014). These people provide great feedback for your ideas, but you must always remember that they do not see what you do. Your inspiration might prove quite scary for those closest to you, so be aware that creation is not for the fainthearted, and costs are paid even for the attempt.

I did not talk with anyone at UVM about this idea when it first came to me. I was scared of their reaction and didn’t really trust that it would not be used against me in some way. Instead, I reached out to some of my friends who were also adjuncts, as well as professionals who had abandoned teaching because of poor pay, circumstance, or just plain burnout. They liked the idea—but they questioned if it was even possible to create.
When the comments became too negative and/or critical, I circled back to the idea of faculty owning the content and setting the tuition rate. No one disagreed the current system was broken. Everyone wanted to get back to teaching, and they wanted to be rewarded for it. I explained the basic concept of faculty control of content and cost and how it meshed with student knowledge and choice. The concept received nothing but positive feedback. However, most people did not think such a system could be created. I could also see in their eyes that they had little faith I could make this happen.

A close friend of mine told me, “You need a business plan and a name.”

**Writing It Down/Building a Virtual File Cabinet**

I had been looking for a name to describe what was being created. I played around with various names like Academy and Agora, but those were based on ancient Greek ideas of learning. I wanted the name to be global and accessible to everyone regardless of where they lived and who they were. Names are really important in business. If your name is in English, then so is your market. I was creating an “open learning and teaching organization,” so I wrote that down in a notebook. After a few frustrating weeks, I stumbled upon taking the first couple of letters from that description. “Op learn tea org” became “Op learn te org” and then “op le te o” and then finally “op lern o,” which became “Oplerno.”

The name worked because it had no meaning, and it was easily pronounced in multiple languages. The rights to it were also available on the Internet. I bought oplerno.com, set up an e-mail account on GoDaddy, and bought a Moleskin notebook. Then I created a Google voice account, got a phone number for free, and forwarded all
calls to my cell phone. Oplerno now had a telephone number. When you have a domain
name, e-mail address, and telephone number, anything is possible!

On April 3, 2013, in that little notebook I wrote the following:

1. Transparency
2. Empower the grassroots
3. Maximize diversity and complexity
4. Self-organize whenever possible

These four ideas formed the design principles that would form the foundation of Oplerno.

Then I started drawing a rough outline of the organization, thinking about the various pieces and how they would work together.

Figure 3.
If you look closely, you will see students, faculty, and then Oplerno on top of two things—a marketplace and a portfolio, with all kinds of arrows pointing in various directions to different things. I thought about Oplerno as an assemblage—a combination of people, technology, and energy flows (Latour, 1996; 2009). My job was to bring the pieces together and get the feedback loops working (DeLanda, 2006). That accounts for so many arrows going back and forth. I knew even then that a hierarchical structure with command and control functions would not work. I needed to create an organization that was self-organizing, operated with a great deal of autonomy, and was quick to react. It also had to be really lean so that costs could be kept low. This would help students find affordable classes and also increase faculty pay.

The next thing I did was sign up for an account on LivePlan.com. LivePlan is an SaaS (software as a service) company that provides templates, forecasting, and presentation tools for start-ups (Palo Alto Software, 2013). I used it to create a professional-looking business plan that could be shared and worked on remotely by any number of people in a network. Most importantly, LivePlan guides you through the process of conceptualizing your mission, product, team, production costs, marketing, and budgeting so you can evaluate if your business idea is even possible. A business plan should be a living document that is constantly modified as you gain more information and understanding. LivePlan allowed me to share the document easily—in fact I could give people the ability to edit the document and share in its ownership. I got a free 90-day trial. If I could get a little funding, then I would get a subscription for $15 a month.
I worked on the business plan in the mornings at Magliano’s coffee shop in its old location in the basement of KBH. Coffee shops are incubators of business because they provide a cheap place to hang out along with stimulants that help focus the mind (Dash, 2001). I drank a lot of café Americanos so that I was not freeloading while using their Wi-Fi. In the afternoon, I would ride my bike up the hill and continue to work on my first dissertation at the UVM library.

I also created a folder in my Dropbox account called Oplerno. This would allow me to share reports, files, programs, and other information with anyone. That is no small thing. Ten years ago, the ability to work in this fashion was not possible. Dropbox created an efficient way to sync data between computers. Essentially, I had created a file cabinet that anyone granted access would be able to use. We didn’t need to work in the same place; I could work with anyone in the world remotely. I created an Excel file in the folder and named it “Budget.” I listed all the costs that I had incurred so far: domain name registration, e-mail account, cell phone bill, some legal fees, and a few café Americani. Less than $200 had been spent.

Just a few years ago, starting a new business was quite difficult. You needed to spend a lot of money just to get off the ground. You couldn’t easily share your business plan and other documents. Now, my file cabinet and everything in it was accessed via a computer because there was no need for an office. I didn’t spend money on rent because I didn’t need to.
Free from the usual logistical and financial hardships of launching a start-up, I developed the business plan and concentrated on the idea of Oplerno. The mission statement was pretty easy:

Oplerno is a global educational institution dedicated to transforming higher education by maximizing the information available to students about their styles. Oplerno allows students to take control of their education by becoming sophisticated purchasers of courses that document the skills they want to develop. Oplerno’s faculty has complete control over the creation, content, and teaching of their courses. They are encouraged to be innovative and own the intellectual property they create in their classes. The fundamental goals of Oplerno are to lower the cost of education for students, increase the quality and diversity of programs offered, and further educational opportunities worldwide. (Skiff, 2013)

Mission statements are critical in an organization because they provide direction and sense of purpose. They act as a signpost for everyone involved by communicating the direction you want to go. They also need to contain measurable goals.

One of the key goals of Oplerno was to be a global organization that linked students and faculty together no matter who or where they were. That may seem like a rather grandiose idea for a fledgling organization, but it is not. There is no reason today why an educational institution cannot operate globally, with faculty and students working together from anyplace on the planet. There are no longer technological limitations but
only organizational/cultural ones, but it is important to be very deliberate in the choices you make in regards to organizational management if you expect to be successful.

Finding a Team

You can’t do anything alone. This is especially the case in startups. No one is the master of all and as a founder you need to recruit a diverse core team. I didn’t have all the skills necessary to create Oplerno and my biggest weakness was a lack of technological knowledge in the area of software development and systems integration. Oplerno was not just going to involve using an LMS. It needed a marketplace and skills portfolio program. I described both in the business plan.

The Marketplace. This location is where students select the courses they want to study and choose the instructors they would like to study with. Faculty own the course content and charge what they think is appropriate. Students choose their teachers based on their interests, needs, and the teacher’s expertise. Students use this information to evaluate the price that the faculty member is charging for the course and may either pay the fee as is or put in an alternative bid. The Marketplace has the potential to transform the education environment by helping to eliminate some of the inefficiencies in allocation of educational capital and labor. Oplerno will act as the market maker in the transactions between students and teachers. (Skiff, 2013)
This was a going to be a very sophisticated and expensive piece of software—or so I thought. However, the most important thing about it was that it created choice for both the students and the faculty.

I also realized just how badly the current transcript/grade system was. For example, in my second year of the Ed.D program, I took a course in research methods. I earned a B+. What did that B+ really mean? The skills that I learned in the class were pretty rudimentary. The instructor had us use notebooks, colored highlighters for coding interviews or data. This professor didn’t even have use any of the excellent software programs like Nvivo or Dedoose. It was not a very good class, but I received a better than average grade. What did I really learn during those 12 weeks? Did I actually have any documentation that reflected the skills that I had learned? All I had was B+ next to the name of the instructor on my transcript.

Under the section entitled “Products and Services” described the portfolio system that I wanted to build.

**The Portfolio.** The centerpiece of student learning and evaluation is an electronic portfolio that records all the skills acquired during their course of study. This does not replace the student’s transcript but provides additional documentation for potential employers and collaborators and can be shared with student authorization. (Skiff, Oplerno Business Plan, 2013)

A few paragraphs later I described the purpose of the portfolio:
In the beginning, the development of students’ skills portfolios and their creation of a sophisticated database. This database can be used by employers to search for individuals with one or a combination of skills necessary for either contract or long-term job assignment. If a student grants permission to a prospective employer, Oplerno will also provide that company with a copy of the relevant skill portfolio information that will allow for a detailed analysis of the student’s abilities. This data-rich system will allow for a much more sophisticated analysis of skills and abilities than is currently available from university transcripts. (Skiff, 2013)

The database involved lists of skills and actual examples of the student work that is signed off by the instructors. The system is conceptually far better than a transcript both for the student and the potential employer. Most importantly, it keeps the faculty member honest and focused on the student’s learning.

Finding an individual or group with the skills to create these two programs and the various infrastructures to support it was going to be a challenge. When I first started to look for people to build the marketplace, I contacted a couple of local Vermont companies that specialized in creating software programs. I showed them a draft of the business plan. We drafted a quick scope of work description and then started to talk pricing. One organization wanted 30% of the ownership and $100,000 in cash to handle the tech infrastructure. I walked away from several equally ridiculous offers from local Vermont software developers.
I also talked a few people in my network. In several cases, I came pretty close to finding the perfect person. My first real attempt at recruitment used my social network. A parent of a former student recommended that I speak with another friend of his. After the introduction, I showed him the business plan and we came pretty close to coming to an agreement. In some ways it would have been a perfect match. He has executive experience at a leading high tech company and works in cloud computing, but the opportunity costs for him were too high. I can’t compete with a seven figure salary. Still the experience of pitching and recruiting a top executive was a good one. I did get him to signup as a Board Member a year after we met.

The second offer I made was to a recent graduate of an Ivy League college graduate who majored in art and computer science. While she lacked experience, I was very impressed with her combination of both art and computer programming skills. Individuals with both these skill sets are rare, she could have designed the GUI along with programming the marketplace/portfolio. I’ve found that the most important thing to look for in a team member is raw intelligence—experience can be acquired but stupid is forever. Just after she agreed to take on the role as Oplerno’s Director of Technology—she was offered a $100,000+ a year job from a major player in database programming market. I told her that she should take it and that this opportunity was too good to pass up. I hope to hire her fulltime one day and by recommending that she ditch Oplerno for the opportunity I’ve been able keep in contact with a potential great hire for the future.

You can also take meetings and attempt to steal talent from other companies but this is generally not a good practice in Vermont. One individual who was recommended
to me by an early adviser was pretty good with the technical skills. I engaged in the back and forth and tried to convert him into being a partner. It was a foolish act on my part. When your looking for good people, trying to convince them to join or accept you is pretty dumb. Since I did not have the backing of a large VC firm belief in mission statement and the business plan were the only assets I had. One of the biggest issues in economic development in Vermont has to do with the lack of dept in our labor market. Vermont exports its young people and has an aging population (Ethan Allen Institute, 2008). This means that the pool of potential partners/employees is low. This lack of local numbers means that the costs of hiring these people are also high. This forced me to look for a creative solution.

In yet another example of how technology is creating disintermediation and rendering location meaningless in the world of globalization—I stumbled upon a social network called AngelList. This website provides an open network that allows startups to connect with investors, potential employees, team members and founders. Traditionally, venture capital firms served this function and they were generally located in big cities in the developed world. That has changed dramatically in the last couple of years. The beautiful thing about AngelList is that it is open, transparent and accessible. I created a profile for myself and a company profile for Oplerno. Afterwards, I started to search for potential partners. However, the most important thing the site did was help me make a mental transition about working with people remotely.

Working used to involve being in the physical presence of someone. Now with Dropbox, Skype, Google, video-teleconferencing, the only thing preventing the creation
of diverse global teams is opportunity and a change in attitude. Everyone of us has their own bias and blind spots. We are the product of a unique set of circumstances and experiences that are constructed which influence our world view (Marx, 1887; Bourdieu, 1977; Geertz, 1980; Durkheim, 1980; Munn, 1986). If you want a build a team with great skills and a diverse outlook then recruit a team that reflects this point of view. I grew up watching Star Trek and its series of crews reflects an evolving sense of what makes a great team. The original series (TOS) you had three men—two of whom were earthlings and from the United States. They engaged in a series of Cold War/Western morality plays. In Next Generation, the most politically correct of all the various series, had a leadership team that reflected gender, race and class roles that were dominated by mainstream Euro/American categories. Their missions centered on a lot of post-colonial and technology issues. However, my favorite series was Deep Space Nine. The crew was diverse and their roles on the team transcended their sex, race, sexual identity and class. The most memorable episodes were those where the characters drew upon the strength of their differences rather than their individual identity. I’ve always strived to create a team like that on Deep Space Nine. While I might not be living on an outpost in the Alpha Quadrant—I could use the Internet to create the same kind of diverse team. I just needed to let go of the idea that they would be found in Vermont.

That is the unique feature about the age we live in. If you want access to people from all over the world it is just a click and search away. However, working with those people requires a different kind of skill set. First, you need to be comfortable working with people having a very different set of beliefs and ideas than you have. You need to be
well versed in listening and with people disagreeing in subtle ways. Second, you need to be very comfortable in the digital environments dominated by virtual worlds (Castronova, 2005). Let me give you an example. I would suggest you spend time playing World of Warcraft, because this MMORPG is a global game that helps you develop leadership, communication and planning skills (Castronova, 2005). Gamers know the strengths and weaknesses of remote teams intuitively and can use the technology to its full advantage. They share lots of information and constantly change roles depending on the problem being addressed. If you are over the age of 40—with a few exceptions—you don’t take to it naturally. I’m 47 years old and the only way I was able to keep up and see the possibility to work remotely was because of my experience playing World of Warcraft, watching Star Trek, playing AD+D and spending time outside the United States. I live and work online and nothing in my academic training prepared me for this.

Using Angelist, I placed a description for a Director of Technology on our profile page along with a listing of equity stake and salary.

**Director of Technology.** This individual will be responsible for the development and management of the information infrastructure used by students, faculty and staff of Oplerno. This individual will have experience in Open Architecture Software development and will work directly with the Instructure (CMS) to ensure its compatibility with Oplerno's proprietary software platforms. He/She will have experience in managing software development projects, IT infrastructure and issues of scalability. (Skiff, 2013)
The other thing that I did was to use AngelList as a search engine and looked through potential candidates and contacted people from all over the world. There was no way that I could pay to have people relocate to Vermont. That would have cost quite a lot of money in addition to paying for visas and legal advice. I decided that working remotely would be the only option.

I probably contacted over 100 people and looked at several thousand resumes sitting in Fletcher Free Library, Bruegger’s, Bailey Howe and the Davis Center. Eventually, I received a response from Adrianus Warmenhoven a computer programmer and security specialist in the Netherlands. Networks are very important and sometimes they allow you access to other assemblages of social, political or economic capital. You need to find allies and ways to connect yourself to other networks/individuals, because in the beginning relationships and connections are very important (Latour, Aramis or the Love of Technology, 1996). Finding the right co-founders is also critical to the success of the startup (Thiel, 2014). I spent a fair amount of time communicating with Adrianus. He was intrigued by the business plan and also my vision for higher education. He was not able to take the position. However, he did say that he knew someone who might be very interested in the position and would contact them.

The next day I received an e-mail from Daniel Crompton. Daniel lives in Amsterdam and works with Adrianus. His experiences and knowledge programming, social media and education are very impressive. Over the past 15 years he has assembled an impressive skill set. In our conversations, we had a very frank exchange about vision, strategy, lack of financial resources and the timeline regarding the economic
sustainability. He taught me quite a lot about social media, the process of vetting technology. He also told me that in the winter his partner would be giving birth to their second child and that he would be unavailable for a month or two. He agreed to come on board and became a co-founder.

At the same time I also searched my network for a Director of Operations. Someone who could help manage the various academic, business and support networks for students and faculty. In this case, I did not use AngelList and instead looked at my own network. I approached a few senior administrators at local colleges. They were very polite to me but clearly thought my ideas were either mad or I was not capable of making this vision a reality. “I just can’t risk it right now, I’m making a good living and while I agree with your basic analysis I can’t do it.” After a couple of months, I contacted a former classmate and business partner Dan Kirk. He had relocated to Oregon. He had experience in student affairs, business creation, faculty support and was smart. Most importantly, he had great potential to become a COO of a large company. He told me that Oregon was now his home and that there would be no relocation to Vermont. That was fine with me. Two months before Daniel came onboard, he agreed to become the Director of Operations.

You will notice that Oplerno’s founding team was more along the lines Star Trek: TOS. The team was geographically and culturally diverse but it was made up three men. While I tried to recruit women and traditionally under represented groups into my team the barrier was always one of money and/or risk. Dan and Daniel agreed that they would work other jobs while creating Oplerno. Daniel’s skills as a computer
programmer/security expert allowed him to get contract work on all kinds of projects.

Dan had a job as a customer support specialist. No one would be paid a salary. Not everyone has the option to take a chance on an idea that may or may not work out. High risk/high reward is not a strategy you can follow unless there is a safety net under you. That is a privilege not everyone has. I’ve lost a lot of good candidates for various leadership positions because of issues involving risk. I am really honest about what I can pay—which is nothing—and difficult road ahead for Oplerno.

The Office

Many companies and startups do not structure themselves to allow for caregiving of family members and are not very employee friendly. They force people to relocate, work a set of regular hours and in one location that is called an office. The cost of all these in terms of stress and financial impact is very large. If Oplerno was going to recruit the best people that I would need to change the way that we would work together. I would also need to be flexible. We would also need a virtual office space where they could gather. While Daniel was starting to work on the Canvas/Marketplace integration, Dan and I looked around for a “virtual office.”

Offices are not just physical spaces but also serve as cultural signifiers. They tell you who is important—these people have the corner office and a nice view. The architecture also points to the vision, mission and history of the institution. Most importantly and office creates the foundation for how services/products are created and delivered. Offices should also add to the productivity of an institution and the happiness of the people who work in it. They are also really expensive not only in terms of rent, but
also in wasted productivity and stress creation via the commute. A small office costs between $500 and $3000 a month depending on the size and view in Burlington, Vermont. Everyone commutes between 30 min and 2 hours everyday. At the end of the week this adds up to one day of lost productivity every week. The commute steals time from employees. Offices also create a culture were people feel the need to show up at a certain time and do something no matter what. In addition, if the space is of low quality it can also add to your company’s health care costs due to bad air, dangerous building materials and stress.

Oplerno was about working with people all over the world—faculty, students and staff. As we were thinking about work, I instituted the idea of “manage by task not by time.” Daniel was in Europe. Dan was in Oregon. I was in Vermont. There was no way for us to have a 9 to 5 work schedule together. In fact at some points we were separated by 9 hours. Everything that needed to be done at Oplerno could be completed through a series of discrete tasks. These would need to be tracked. Instead of communicating in a physical space it was important to come together virtually. Everyone would need to manage not their time but the tasks they needed to complete. This flexibility lowered the stress level of everyone. There was no expectation to be available at particular time so work happened when you wanted it to rather than at some predetermined time. All that was required was a timely answer to an e-mail question.

It is amazing how quickly the complexity of an organization increases with just three people. Soon keeping track of all the projects, messages and information overwhelmed our Dropbox and e-mail folders. We had to find a virtual office with
sophisticated project management characteristics. This program would need to be cheap, hosted on the cloud and allow for integration between Canvas, Marketplace and any other programs that we might use and create. It needed to be secure with good encryption and security profiles. It had to be open source so we could modify it at will. Many institutions make the mistake of buying software that cannot be easily modified. This forces the institution to become dependent on outside contractors for any upgrades. Most importantly, this creates the situation where the institution is forced to conform it behavioral and managerial function to the software program rather than the institution’s norms (Senge, 1990; Benkler, 2006). How many of us have experienced the hamhandedness of a new software integration at the hands of the outside consultant? How many of us work under the tyranny of some software program for a critical function that just stinks?

Dan Kirk found a great program called Podio (podio.com). It was open source, had great data integration and was very easy to modify. There were also hundreds of free add-ons that could tweaked to fit our specific needs. Most importantly, it was cheap and could grow with us. It was also hosted on the cloud but we could also migrate our data to another location and host it ourselves if necessary. The cost was $7.95 a month per user. We had created an office environment/digital assistant for $24.00 a month. It even worked on a Smartphone. This allowed me to keep track of what was going on from any location with a cell signal. Podio quickly allowed us to coordinate our administrative workflow and create spaces where we could work on accreditation, finances, faculty recruitment, course development, media relations and overall strategy. The foundations
for Oplerno were created and while all this was going on I dealt with the legal structures of the institution.

**Avoiding “The Flake Out Factor”**

Legal documents dealing with the organizational structure of any organization are very important to the long-term success of the institution. They are especially important in a time of crisis. When things are going well and the leadership team is doing its job these documents are not looked at very much. It is when there is a crisis or power conflict between stakeholders that the legal structures come into play. It is then when you either curse the founders or praise them for their foresight.

A lot of people told me that Oplerno should be a not-for-profit (NFP). There were some advantages to this approach. First, we could accept donations for a tax break. Second, most of the reputable institutions in higher education were also NFP. Third, Oplerno would be perceived by the public as being “of service” to the community rather than a money making operation. There were some big downsides to being a NFP. The Board rules an NFP. Board members are recruited because of their money, wisdom and/or the work that they will perform. It is generally voluntary. Their interests are not always inline with that of the institutions long-term goals and some use their memberships to help themselves to perks and privileges (Craig, 2015). They also require a lot of managing. Initiatives, new programs, strategic plans must all be approved by the Board. Usually Board meetings occur biannually so the rate of adjusting strategy usually occurs in yearly cycles for minor decisions and multiple years for major changes. This does not really work in today’s environment. Another big drawback is the need to
constantly fundraise. Funders are a tricky group. There are those who believe in the mission of the NFP and want to use their capital to create change in society.

There are also many who are on an “ego trip.” These individuals donate to get a seat on the Board in an unspoken pay to play agreement that predominates much of higher education. This usually gives them the power to influence policy and even decisions by the leadership team. Regardless, big funders can become a nightmare to manage especially when their wishes diverge from the institution’s mission. For example, at Vermont Commons School a wealthy individual attempted to use the threat of pulling funding to change a very important policy at the core of the institution’s mission. Social, financial and political pressure can be very difficult to deal with. It is at that moment when you are asked to compromise your beliefs that the strength of an institution is defined. The choice was simple give in to the “ego trip” and preserve yourself—but only for a while. Maintaining the integrity of the mission and your vision can be very difficult. At Vermont Commons, we knew that if this “ego trip” got her/his way then changing this policy would hurt the students. We also knew that this would open the door to further involvement by donors. Vermont Commons avoided compromise because we had the financial, social and political network that allowed us to avoid taking the money or bowing to outside pressure. Many do not.

Higher education institutions cater to funders. This has caused higher education quite a bit a trouble. It buys a lot of buildings, endowed programs and an annual fund but also makes you beholden to many business and corporate leaders. They expect a seat at the table—they are not donating out of the goodness of their hearts. It is delusional to
think that their support does not come without a cost. Non-Profit Higher Educational Institutions deal with potential compromises of their missions by funders just as much as for-profits. The trick is to create the legal, financial and operational infrastructure that makes the mission almost impossible to alter even if you get pressure from funders.

I’ve had enough of the politics in educational not for profits.

**Operations Agreement/Faculty Contract**

A purpose of lawyers is to create binding legal documents that reflect the thoughts and ideas of the person paying for their service. In my case, I needed to create a document that would allow Oplerno to operate as a LLC. It would also need to protect the investors and founding team that I was recruiting. Most importantly, it would have to invest me with control over Oplerno so that I could make sure that we did not compromise our mission and guiding principles. This can be achieved in a couple of ways.

1. Maintain governance over the institution by controlling who can buy and sell ownership units.

   This is achieved by writing into the Operating Agreement that the majority owner must approve the transfer of units/stock between either individuals and/or institutions. In other words, you get to approve of who is going to buy a seat at the table. Startups and other new institutions do not give enough thought about how to avoid those who are out for a quick profit turnover. Most investors—be they venture capital or private placement equity want a

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1 A copy of the operations agreement is located in Appendix C.
return on their investment. They will sell at the moment that maximizes their profit/capital. They do not care about the mission or the institution. The end (money) justifies the means.

2. Super Majority Rules.

Oplerno, LLC. invests the majority unit holder with a lot of power. As long as he/she maintains at least 60% direct control then almost any major decision or change in policy can happen. State, Federal and International law must still be followed. However, this structure allows the founding team to innovate without constantly asking a board for permission. Many institutions require approval of major policy actions by vote of the majority of board members. Again, a startup requires the ability to innovate and change quickly. In our case, I wanted the founding team to have the ability make major changes to any aspect of the institution without having to deal with the politics of board governance. However, the most important reason for super majority rules is…

3. Avoid dilution at all costs.

The easiest way to take control of a startup is to dilute the founders and the early employees. Early financing usually involves the issuing of new units and sometimes the number that is added is substantial. Many founders of innovative startups are left with nothing and the usual cause is rapid dilution after initial funding or after the first few rounds. In order to avoid this issue you need to control as many units as possible and prevent any issuing of extra units unless explicitly authorized by your founding team. Many things
drive dilution—need for more funding, an excessive run rate which causes you to burn through funding cash quickly or the desire to take profits out of the company. These three needs should be avoided if you want to maintain the ability to operationalize your vision without undo outside influence. Remember that dilution is how VC’s pick the pockets of founders to gain control.

The lawyers were not happy with me when I told them that I wanted an Operating Agreement that protected Oplerno in this way. Like all good lawyers they warned me that this was not the standard way of looking at things. They also said that it is almost impossible to maintain control. In capital-intensive enterprises they are probably correct. Finding enough financial capital to produce a factory or other manufacturing facility is quite difficult. It forces you to make compromises. In the end the lawyers produced the document exactly like I wanted. It was a very tight document. Oplerno was different and we could bootstrap the creation of our best asset by giving away the most valuable intellectual capital away to the people that produced it—the faculty.

Karl Marx defined socialism as an economic system where the workers owned the means of production (Marx, 1887). At the beginning of the industrial age the means of production took the form of factories, looms and tools. Peter Drucker in the Post-Capitalist Society recognized that in many ways economic systems based on ideas and services were changing the classic notions of capital (Drucker, 1993). These goods were no longer monopolized by individuals who had traditionally controlled their means of
production. A idea can be created by anyone and since the tools used to create these ideas were cheap and available control was no longer in the hands of just a few but many (Hardt & Negri, 2009). This is especially important to remember when applied to the issue of education—online education most of all.

The lawyers were a bit take aback when said that I wanted to create a contract where Oplerno signed over the rights to the course materials that faculty produced. Then I told them to write a section stating that faculty would be able to set their own tuition rate and would be guaranteed at least 80% of the tuition revenue generated in a class. I still think they regarded this split as a crazy idea. However, lawyers do what they are told in the end and they produced an excellent faculty contract. Oplerno was almost ready to go public.

**Crashing a Conference/Calling in a Favor**

In the fall of 2012, UVM hosted a symposium “Precipice or Crossroads: A Symposium on the Future of Public Research Universities.” (University of Vermont, 2012). The former President of the College Daniel Fogel hosted it. The conference brought together the senior leadership of many institutions of higher learning nationally. I didn’t have time to attend the entire three day event, but I did go to the final panel on the Future of Higher Education. It was recorded by C-Span and I got to ask a question. 2 hours and 47 min in I asked about the impact of MOOCs on the business model of higher education (CSPAN, 2012). I talked to long and clearly the question annoyed a few of the speakers. However, the best part of the conference was afterwards.
Goldie Blumenstyk is a reporter for the Chronicle of Higher Education. She was covering the conference and came up to me afterwards. “Who are you and what are you working on?” I told her that I was a graduate student working to complete my Ed.D. I told her about the article “Blowing the Last Bubble” and the perfect storm facing higher education of rising costs, student debt and MOOCs. She pressed me a little further. I did tell her that I was working on a project but I couldn’t really talk about it now. However, I asked if I could have her e-mail address. I would contact her when I could talk. She gave me her card and I filed her address away.

Ten months later the foundations were created. Daniel had just started to work on the marketplace. Dan had created a website. We had a faculty contract and a few faculty who were interested in working on this. It was late July of 2013, we decided to go public. I wrote Goldie an e-mail.

Dear Ms. Blumenstyk:

I met you last fall at a conference on Public Land Grant Institutions at the University of Vermont. I was the person who asked the panel about how Universities and Colleges were going to makeup for the loss in revenue from MOOCS. In addition, I wanted to know why they were partnering with Coursera and EdX in cannibalizing their most profitable classes. I did not receive an answer.

Afterwards, we talked about the broken higher education financial model, student debt bubble and the eventual faculty resistance to MOOCS that would
develop over the next year. You asked me what I was working on…I told you that when it was completed I would contact you. You were kind enough to I would appreciate the opportunity to talk with you about Oplerno and see if started to reach out to different media outlets and wanted to give you the first crack at this story. You were very kind to me at the conference and I wanted to return the favor.

Thanks for your time,

Robert Skiff
Founder CEO Oplerno

It took her a couple of days to get back to me. Goldie does not suffer fools and she is deeply skeptical like all good reporters. She wrote the first story on Oplerno and it appeared in the Chronicle of Higher Education (Blumenstyk, 2013). The tone of the story was great—skeptical but hopeful that we might be able to pull it off. Goldie talked with members of our Board of Advisors, some potential faculty. The comments after the article were vicious, as I knew they would be. The Chronicle is an insider publication catering to traditional academic institutions—their faculty, staff and administration. There is no way this audience would like our mission or business model. However, Goldie was the only person I knew from a national publication that might write about us. At this point any publicity is good publicity and the price was right—free publicity is the best.
Oplerno website traffic exploded. I watched the number of people visiting the sight climb and watched them move from the landing page to the faculty recruitment page. In a little over one week over 120 faculty had applied for a position. They signed contracts and we gave them accounts on Canvas. Some even started to create classes but Oplerno made a critical decision not to start recruiting students.

The Challenges of Approval and Working Within the System: Part One

Higher Education is a highly regulated market with huge barriers to entrée. These two factors make it extremely difficult to start and found a new institution. In many ways this regulation is a good thing—it can prevent lowering of academic standards and abuse. However, regulation can also be used as a tool that slows down innovation and prevents competition. Out of the team, I was the unofficial Chief Academic Officer—working on accreditation was my responsibility. One of the principles that we followed was no recruiting of students until we had received our accreditation or some other form of official recognition. Before I go any further, it is important that we draw the distinction between various levels of accreditation.

Accreditation basically means that a NGO or government has granted you permission to confer a degree on an individual. Laws in the country where you operate govern this degree granting authority. For example, in the State of Vermont the Agency of Education regulates all institutions of higher education (State of Vermont, 2015). The Board of Education in the State of Vermont grants institutions accreditation or approval to offer courses for credit. In the United States, the Department of Education recognizes various NGOs as also having the authority to grant accreditation. This can occur at the
national or regional level. Nation States also have their own educational regulations and authorities and are very protective of their ability to control and regulate education within their boarders. Many of the regulations, cultural customs and policies were created in an era before the Internet. In this era the way to learn was through the exchange of knowledge between the teacher and student who needed to be physically present in the same space together. It was quite easy to control education during this time—that is no longer the case. For example students from Quebec, Iowa, Jiangshu Province, Bali and Quito can access an online course, be taught by a professor in Thailand through an LMS provided by a company in Salt Lake City, Utah who locates its serves in Maryland. The financial transaction can happen via a server located in the Netherlands while student data is stored on a server in Iceland but the headquarters is located in Vermont. There are 11 different jurisdictions that can claim to have some type of oversight regarding accreditation and educational. The same issue occurs with any educational institution but some choose to ignore this very big issue. Coursera, EdX and Udemy have decided to just abandon the idea that their courses would generate transfer credit or that they would become part of the traditional educational establishment.

Given this complicated regulatory environment, I thought that Oplerno would be on the best legal and ethical ground if we followed the same methodology used in internal tax law and accounting as it relates to online commerce. In this field the question to be asked is where does the transaction occur and who are you paying taxes to. In most cases tax is owned at the point where the transaction occurs and is paid at the tax rate of that location. In the case of Oplerno, our transactions occur in the Netherlands but since
we are located in Vermont—our tax rate is determined by that jurisdiction. Vermont has high standards in regards to education and clear regulatory procedures. Vermont was the best place to start the process.

The Agency of Education in the State of Vermont has posted online the documents and application forms to become both an approved and degree granting institution. I downloaded the application and started to fill it out, I also made a courtesy call to find out just who was in charge. Never underestimate the importance or power of mid level bureaucrats. They control not only the interpretation of regulations and the use of government power (Latour, 2010). They are the ultimate gatekeepers. Kathy Hilgendorf was the coordinator for higher education and the liaison with the Vermont State Board of Education. She is a real professional who has very high standards. After reviewing the application I noticed that there were a lot of questions that did not apply to Oplerno. We were not located in a building so I could not describe “the physical plant.” Oplerno was not already running so I could not describe our “students.” At that time, Oplerno was just starting to develop our classes so the “academic program” was only in its most basic form. Oplerno is also a for-profit and in a state strongly influenced by progressive anti-corporate political parties I was unsure how our whole business model would be received. We talked on phone for a while and I sent her a couple of e-mails with more information on Oplerno and our vision. After a few weeks we setup a meeting in person.

2 At that time the Agency had not yet become a Department so I’ll use this term until that transition.
James Scott’s *In Seeing Like A State* talks about the unintended consequences of policy prohibitions on the health of society (Scott, 1999). The book argues for a holistic and systems theory approach to the application of law and regulation to various environmental, political and social problems. He also talks about the importance of data and record keeping in government. Government spends an inordinate amount of time collecting data and processing it. I thought that if I was completely transparent with Ms. Hilgendorf and the Agency of Education about our finances, mission and internal communications that things would be much easier. Most importantly, since Oplerno had decided not to recruit students until receiving approval there was no possibility of running afoul of regulations regarding advertising to students. My goal was to develop a level of trust between Oplerno and the Agency of Education.

First meetings are pretty awkward. We spent a lot of time talking about the process of approval and accreditation. Before they even asked, I offered to share our business plan, financials and even grant them access to Podio. I wanted them to understand that we were a serious educational institution with high standards and ethics even though we did not have a building. I also said right from the very beginning that Oplerno was not interested in competing with Vermont institutions of higher education for students. We would largely avoid recruitment here. Instead, I wanted Oplerno to act as a source of transfer students to our state’s colleges.

The process was pretty clear—fill out an extensive application, pay a fee, be evaluated by outside evaluators and then go in front of the Board of Education. This was
the first time an online educational institution was being evaluated by the Agency of Education and our application would need to be perfect.

“If you have any concerns about what Oplerno is doing please let me know. We want to be an asset to Vermont and its educational system.” I said.

There was a lot of work to do.

The Problem of Who Can Raise

Low expenses create options in a startup. As I explained above, capital constraints force you to be innovative. You also need to be able create the legal and operational foundations of your institution without incurring costs in the thousands. Finally, startups require that a founder have the ability to support him/herself for several years without a salary from the company. When you searching for co-founders, it is important for you to be upfront about salary and benefits. Oplerno had no money to pay salaries all anyone could work for was equity. There are strengths and weaknesses to this approach. Daniel and Dan had other sources of income that they could draw upon. We could wait to gain initial traction with faculty, students and other organizations. There were a lot of expenses—most related to legal and accounting work. Like many startups, I was forced to go to family for some initial capital.

Capital—especially financial capital is critical to the creation of new businesses. It is no coincidence that most new businesses are started using some form of family investment. It is also no coincidence that as the cost of capital rises business formation becomes a risky proposition(Piketty, 2014). This means that the individuals who have traditionally created new institutions have been those from groups with high levels of
capital accumulation. This is one of the central points in Piketty’s excellent analysis of economic history in *Capital in the Twenty First-Century*. However, Hernando de Soto in *the Other Path* studies the how the costs of regulations and government gate keeping make business formation very expensive and also prevents capital accumulation (Soto, 2002). De Soto outlines the legal steps necessary to create a new legal business in Peru and the costs. The time and money needed are prohibitive for most people (Soto, 2002).

These two forces pervade in most countries to some degree or another. Only a few individuals from select groups have the combination of capital and personal connections within a supportive polity that creates the possibility for innovative business formation and disruption. It is no coincidence that silicon valley is the center of online startup culture in the United States. The high net worth individuals, social/political/financial networks and a supportive political/cultural environment combined with a constant source of smart people (graduates of Stanford and other colleges) creates powerful forces that help generate success (Kotkin, 2000). These powerful network effects where access to these groups becomes a critical factor in startup success.

“Some people are born on third base and go through life thinking they hit a triple.” These wise words from Barry Switzer describe the advantages place, class and institutional affiliation have on success in the startup world. In terms of my own experience, I have been luckily enough to have family who not only believe in but have the capital to take a chance on Oplerno. Most people do not and lack of access to this
initial funding is—in my opinion—a major barrier to business formation in the country and indeed the world.

Over the course of the first year of Oplerno our legal, accounting and government costs were around 75% of our expenses. In order to be a legal business we had to spend almost $18,000 USD. I secured a loan from my parents for $25,000 during the first year. The ability to risk that capital is an advantage that most individuals or families have. Social networks also play a huge role in both advising and guiding startups. Two out of the three advisors/board members of Oplerno were people I have been connected to personally. One is a partner at a VC firm in California—we were in the same fraternity in college. The other was a parent of a student when I taught at Vermont Commons School. The ability to call them up ask questions and be guided by their advice has been critical to the moderate success that Oplerno has achieved so far. Each of them have been willing to take a chance on working with me.

Ayaz ul Haque is Managing Director of Venture Capital firm Exalt Capital Partners. He has had a very successful career and grew up in Karachi, Pakistan. He was also my younger brother in DKE. If there is any advantage that elite traditional higher education has it is in the cultivation of social capital and networking. During those brief four years just before Middlebury rightly banned fraternities, DKE was one of the most culturally diverse places on campus. It had about 1/3 non-US members and a higher diversity of races/ethnicities than on campus. It was not socioeconomically diverse. There was a German Count, an English Lord, Thai Prince, the largest landowner in Australia. Last names of famous American, Latin American and European families along with the
sons of successful business people populated its membership ranks. There were just a few unknowns like myself.

The kind of social capital that was accessed allowed for the cultivation of alliances and friendships that can last a lifetime, but only if certain rules are followed. While I was a member of DKE during college, afterwards I did not enter the kinds of fields where these social connections prove so important. I became a teacher and my political and social views grew at odds with the brotherhood. In the ensuing years most of these brothers have joined the leadership teams of major financial institutions. It is in these circles that college, club and fraternity are so important. These networks represent an informal system of filtering out and shielding. They are just gangs where briefcases take the place of motorcycles and mayhem. I can still e-mail and also get the occasional call but the relationships are largely transactional and I have nothing to barter. However, I can still ask for advice and maintain a tangential connection. The biggest misperception of outsiders is that these networks fund their own out of a sense of obligation. They do not. Profit is the only motive along with ROI—return on investment. It does not matter if you were a member of the club, college or fraternity your idea must work and be exploitable. These social networks do get you a meeting and can provide access to the capital, but you will pay a big price in control, profits and ethics. There is also a lack of funding for outsiders because the only people who can access capital are those who are already members of the club. That is changing but only slightly.

At the very beginning of Oplerno, I figured that we would eventually need some kind of outside investment. After I wrote the business plan, I contacted Ayaz to get some
feedback. He was honest and brutal while clearly giving me the guidance necessary to start thinking about what it would mean to raise capital. Ayaz taught me about how VC and private investors evaluate companies. Ayaz shopped our idea around to a few angel investors—people who might be willing to fund us. We didn’t get any real interest.

Oplerno had not yet attracted enough faculty or students. At the end of 2013, Coursera, EdX and Udemy were hot investments and a small startup like ours did not attract much attention. No one was interested in a non-approved/accredited institution. Over the next year, Ayaz prevented me from making a big mistake of concentrating on raising money rather then building Oplerno as an organization. It was wise advice and has allowed us to learn from our mistakes without burning through cash. As long as our run rate was low we could wait for the right opportunity and grow organically. We could play the waiting game.

A value proposition of higher education that is based on social networks is a valid one, but it only works for a few privileged individuals and elite institutions with large endowments. Shouldn’t we aspire to create a more egalitarian system where anyone can get a great education at a low cost? Haven’t we all had enough of the elites? I remain deeply conflicted about using these networks to generate capital. That is why the first attempt at raising money for Oplerno was though the crowd funding site Indiegogo.

**Crowd funding**

Since around 2009 the ability to raise money to fund projects has become a lot easier though the use of websites like Kickstarter and Indiegogo. They allow individuals to create causes/businesses, post videos interact with people receive money directly from
donors. These crowd funding websites cannot be used to generate investment capital in exchange for units/shares. That would be a violation of several SEC and US Securities laws. Kickstarter and Indiegogo are most successful when there is a product that you are pre-selling. For example, the most successful kickstarter campaign has been for the Pebble Smartwatch. It raised over $20 million USD (Wikipedia, 2015). They presold watches on Kickstarter to generate capital to produce the watches themselves. It completely disintermediated the usual way that consumer products are developed and distributed by cutting out both the funders and retail distributors. This allowed the company to not only test market a product but also generate a lot of buzz in the media which provided free advertising.

Oplerno was not a consumer product. It was an idea with around 100 faculty and a few courses underdevelopment. In our operations meetings Daniel, Dan and I talked about the need to raise some money if only to create a proof of concept and do some marketing research. I believe that Oplerno is a movement and not a business. We need to create a community and that interacts and believes in what we are doing. While we had been written up in a couple of newspapers and a journal the spark was just not there. Could a crowd funding campaign help light the fire? We looked at successful campaigns and found out that yet again Oplerno did not easily fit into any particular category—we were not a consumer product. This was not a film or art project as social movements go. We were a bit fringy not to mention the fact that our courses were not yet approved. We lacked credibility and social, political and educational capital of our more established peers—of which there were none.
All crowd funding campaigns require a 2 min video. This is basically an advertisement that outlines your plan and the need you are meeting. We also needed a plan to engage the web in the story of our campaign. Lastly, there were the prizes. Every campaign has different levels of support and the rule in crowd funding is that if someone gives you a donation they need some type of prize. It took several months to get film our video, get the prizes and create a basic social media plan. We launched the Indiegogo campaign on December 3, 2013 (Oplerno, LLC, 2014). Dan Kirk saved us from my very poor filming and production values, Daniel did an amazing job getting the word out on our social networks. Our web traffic increased and we also attracted more faculty. I have a tendency to push the envelope a bit to far and thought for sure that we could attract $100,000 in donations. We did not. Instead, after a lot of work Oplerno received $10,645 in donations from friends, family and other supporters. The bulk of the money was given to us by people who had some connection to Dan Kirk. As part of the campaign we said that everyone who donated would be listed as a founder on the website.

The process taught us a lot. First, social media was an effective way to get the word out. Our web traffic during the campaign increased quite a bit. Traffic is very important because it translates into views and potential faculty members and content. Using the crowd funding techniques allowed Oplerno to raise the profile and also some capital which we could use to pay for the next phase of our development. The biggest disappointment regarding the crowd funding was the fact that if did not create the kind of groundswell that we had expected. I had at lest expected a little national publicity and
that didn’t happen. Still all the free publicity cost us nothing and we had raised $10,654. That was good result.

The Challenges of Approval and Working Within the System: Part Two

As the Indiegogo campaign was winding down, I finished the approval application and wrote out a $1000 check to the State of Vermont. This application is included in an appendix at the end of this dissertation. It includes the business plan, financials and the answers to all kinds of questions that the Department of Education has regarding new institutions.3 The Oplerno team was justifiably proud of all the documentation and the progress we had made in the past eight months. Now we had one final hurdle—approval and then we would be off. However, it is never as simple as all that.

Kathy Hilgendorf was very clear about the fact while Oplerno was a new kind of institution, we would still be following all the relevant regulations regarding higher education in the Vermont. However, she quite rightly realized that descriptions of the physical buildings needed to be replaced with extensive explanations of both the information technology we would be using. As part of the evaluation procedure, an outside consultant would review our application with experience in online education and another member Vermont State Department of Education.

I do not like being powerless in a situation like this when so much depends on the makeup of committee members. Get the wrong one with a bad attitude and an agenda

3 This application is included in Appendix C at the end of this dissertation. It includes the business plan, contracts, financials and the answers to all kinds of questions that the Department of Education has regarding new institutions.
and its over for Oplerno—approval would be an impossibility. Get the right ones and the committee would strengthen the application in front of the Board of Education. The last step was the most critical and with the largest possibility of failure. Our review committee consisted of Ms. Hilgendorf, a Deputy Commissioner of Education and the Graduate Dean of a private university in Vermont. I sent them all an e-mail containing a link to our application and waited for an appointment. It took about a month to get everyone together. To keep busy I worked on a research project, recruitment of faculty and the Indiegogo campaign and waited for the interview.

On January 8, 2014, I was questioned by the committee. It was friendly but very nerve racking. I got asked all kinds of questions about our admission procedures, quality control of the courses, finances and governing policies. It went on for around two hours. It was a very good conversation and my initial fears were wrong. At the end I was told, “This is the most through application that I have read during my time at the Agency. We will strongly recommend Oplerno for approval.” It was a proud moment. Now there was just one last step—a meeting with the Board of Education.

The Vermont State Board of Education (BOE) is a political body made up of appointees of the Governor that have been approved by the Vermont State Legislature. It is supposed to be an independent body, but like all government creations is highly political. It serves as a gatekeeper of sorts, passing regulations and overseeing educational policy (State of Vermont, 2015). In an era of elementary/secondary education crisis, higher education reform and an unfavorable economy the BOE does not necessarily remain on the same page as the agency or the executive branch. From time to
time the BOE will assert its authority in areas that it thinks is important. In 2014, we were coming into an election season and the yearly budget crisis. It was difficult to gauge just what kind of response Oplerno would receive.

The Department of Education asked that Oplerno be placed on agenda of the BOE at the next meeting. Cathy Hilgendorf told me that no institution recommended by the Agency had ever been denied approval by the BOE. I felt really confident that we would sail through. So when Oplerno was placed on the next months agenda, I got the team all ready to launch or admissions website and placed everyone at the ready for our big media blitz with a press release and even a potential celebration. However, something made me pull back and I told everyone to hold off on announcing that we were going to get approval. I asked if I should attend the BOE meeting and was told that it was not necessary. I followed this advice and on the big day waited for news about how the vote and gone.

We were not approved but neither was the application denied. Instead, the BOE had postponed the vote for the next meeting. Several of the new members of the BOE had some concerns. What they were was difficult to say. However, it was clear after viewing the transcript that they had no idea what Oplerno was and clearly had not read the application or the supporting materials from the Agency. It was also clear that there was both a bureaucratic and political battle brewing.

In the winter of 2014, Coursera and EdX were having problems. The MOOCs had shown their weaknesses in terms of both learning outcomes and student completion. In addition, online for-profits like the University of Phoenix, Corinthian Colleges and
DeVry had shown themselves to be predatory in their lending practices and full of fraud (Perez-Pena, 2014). It makes sense that the BOE would be concerned about the issue of both online education and for-profits. However, I did not want Oplerno to become a scapegoat for these issues in higher education. In addition, it was also clear that there was going to be a battle between the BOE and the executive branch over school consolidation, educational policy and taxes. Political power struggles are not immune from tit or tat battles. I didn’t want Oplerno to become a pawn in this conflict. I cancelled the website launch, the press releases and media campaign.

After a couple of days, I called the Agency of Education. They were stunned by the decision to postpone the vote. I told Ms. Hilgendorf that I wanted to be there at the next BOE meeting to answer and questions they had. I would also bring copies of our application for approval. There was very little that she could do other then place our name on the agenda again and wait for next month for a vote. She told me again that this had never happened during her tenure. That was a bit scary to hear. It pointed to opposition and quite possible denial of our approval application. I would have to wait until that meeting to find out just what Oplerno was facing.

It was a long month.

I tried to anticipate the questions that they would ask. I tried thinking about the objections that would be raised. I had good answers for the issues that would come up around admissions, academic quality, access, advising and governance. Everything had been written down in the application. If the BOE members read the document and looked at Oplerno with an open mind they would follow the recommendation of the Department
of Education. I made copies of the approval application and even created tabs for all the
different sections that I might need to reference in the meeting. Ms. Hilgendorf and I
agreed that she would take the lead in the presentation. I couldn’t undercut her or the
DOE. When the day arrived I dressed in my most conservative suit, polished shoes and
tie and prepared for the grilling.

Never go into an important meeting without knowing the players. I had done
research on everyone in that room. You do not get named to the State Board of Education
because you are a maverick. You get named because you are a known quantity. It was
pretty clear that I was going to have some trouble with a few members who were college
professors and in the higher education business. There were also a couple of people who
were involved in social services in the not-for-profit sector. I didn’t expect a very warm
reception from them either. There is a very cozy relationship between the public
education and social services sector in Vermont. For-profits are automatically suspect in
their eyes. The chair of the BOE was a former Speaker of the Vermont House Stephen
Moorse. His extensive experience in business, foundations and politics clearly made him
an important gatekeeper for the both the Democratic Party establishment and also an
elder statesman who could guide policy.

As the various items were discussed it became quite clear that many members of
Board of Education wanted input into policies of the Department of Education. In fact, it
was clear that they were attempting to assert their authority into policy areas that were
best left to the Department of Education and Secretary Holcolme. She was differential to
their suggestions but not in a subordinate way. Sometimes in a meeting you can tell when
a group is being managed. In a very subtle fashion both Stephen Moorse and Secretary Holcolme were attempting to manage a couple of the members who had clearly not understood that the power had shifted from the Board of Education to the Department and the Secretary.

Oplerno was at the end of the meetings agenda. Not only were individual BOE members getting a little pissed but they were also spoiling for conflict. Cathy Hilgendorf was called forward and introduced me. The Board peppered her with questions about the process of approval and online education. This was becoming a disaster. If Oplerno was dragged into a policy debate then approval would not happen. Ms. Hilgendorf answered the questions but more importantly talked about the process and made it clear that we had met all the standards of the Department and should be approved. One of the BOE members—the individual who had been raising objections during most of the meeting asked for more time to study our application.

“It is not the role of the Board of Education to review applications. That is the role of the Department of Education. Your job is to approve the recommendations that we make.” said Ms. Hildendorf.

Chairman Stephen Morse called for a 10 min recess to discuss.

Everything that I had hoped to avoid was happening. BOE and DOE were fighting over power and privilege. Oplerno was being held hostage. I knew that there was no way to approach. They were totally silent and were waiting for something. Everything depended on the Chairman. He was looking for some way out of this. He was talking to a bunch of people when I asked to speak with him.
“Mr. Chairman, I have done everything that the Department has asked me to do. Now you all are trying to change the rules midgame. Oplerno should not be held hostage to whatever power struggle is happening right now. I want to bring jobs and economic opportunity to Vermont.” I was totally in control but he knew that I did not want to be screwed with.

I went back inside. He heard me.

After the recess the meeting began again. The Chairman asked a few questions and then asked, “Are you willing to accept a 3 year approval rather then five?” Never corner a person. Always leave them a way out that saves face. It was clear that the BOE needed to assert its authority and that Oplerno’s approval application was part of a larger inter-governmental power struggle. If Oplerno was going to avoid being a battlefield every side had to win. BOE would get to assert its prerogative of review and the DOE would get to assert its power of recommendation. The power struggle would continue, but not using Oplerno as the battlefield.

“That is fine with me. I look forward to seeing you all in three years. Thank you very much.” The vote for approval was 5 to 3. We launched the next day with a changed website. It was April 2014. Oplerno was open for business.

If You Build it They Will Come?

The team had a lot of optimism when we received approval. It was like we had arrived—we were an educational institution. Now the hard part of recruiting students had begun. It was really tough. We used Twitter, Facebook, sent out a whole list of press releases over the next couple of months. We worked with faculty to start reaching out to
their networks and we made a lot of mistakes. Luckily, we didn’t have money to make some really big ones.

SEO and Ad words—that is how a lot of businesses today attract customers and a lot of schools recruit students. SEO is simply tricks that you can use to make your website appear at the top of results in search engines. They all cost money and cause you exist within the constraints of these search engine companies like Google, Baidu, Bing and Yahoo. This can be an incredibly expensive way to get your name in front of people—and is not always successful. Each word that you search for has a price. For example, if you want your company/school to appear in a search for “online education” you have to pay a fee per click. Some words are more expensive than others. Costs range between a few cents to $100 or more per click. One public university in the northeast pays on average $5.85 a click for every referral it buys (Skiff, 2015).

There is also bot fraud to worry about. Bots are programs that travel the internet and basically click on words generated by search engines. That means if you are paying for a click from a human—you might actually be getting one from a bot. This is a big problem in the online advertising environment. It might represent as much as 39% of global digital ad buying (Fou, 2015).

In the summer of 2014, a lot of people offered marketing advice and most of it was just awful. One individual wanted us to spend $300,000 on SEO and Adwords along with a pitch to get us on the Howard Stern Show. It was all part of a package.

“Sorry, I don’t have that kind of money.” I responded.
Most of the Vermont media companies I contacted all followed the same strategy—SEO and Adwords. It was pretty depressing to realize that there was no way to grow without spending a lot of money on ads. Oplerno was left with one option. Why not energize the faculty to help recruit students? After all they had the most to gain.

Right from the start we attracted some very impressive faculty members. One was a literal rocket scientist who wants to develop a graduate program in space engineering, another had extensive experience in Iran. The instant attraction of philosophers and writers gave me a great sense of confidence that Oplerno was going to be successful. We just needed to figure out how to attract students and get the faculty to finish creating classes. Our marketing plan depended on the faculty recruiting students. Over the next several months we learned quite a lot about the current state of faculty moral.

Faculty are selected based on their scholarship not their ability to market themselves. Since a very early age most academics are taught to follow a set course of academic training that does not place much emphasis on self promotion especially in regards to the recruitment of students. In fact, there is an implied disincentive because the more students you teach the more grading/work you will have which takes time away from research. Out of the almost three hundred faculty that we have sent a contract to 178 signed contracts and 42 completed classes and produced seven certificates. Currently we have around 156 courses under development. This distribution followed the classic Pareto principle--all of our completed classes were developed by 20% of the faculty we signed
up. Why did the others not finish their class? That is a difficult question to answer, but I will give it a shot.

Academia as an institution is hegemonic. Its class system assimilates all who participate in its form and function. Antonio Gramsci would recognize that adjuncts—as a class of academics—cannot develop the agency to change the system as long as they are trapped within its constraints and serve its interests. Adjuncts are a classic example of Gramsci’s idea of the subaltern⁴ (Gramsci, 1971; Bhabha, 1994). These are lowest ranks of middle management who serve the interests of the larger institutions that are at odds with the own. While critiquing the educational reforms of facist Italy in the 1920’s, Gramsci would recognize that today’s adjuncts are academics serving institutional interests that are at odds with their own.

Adjunct faculty does not have a lot of time to devote to getting involved in an untested business model. The opportunity costs involve a risky venture—especially when your working at multiple institutions and getting paid between $2000 and $4000 a section. This contingent labor force is demoralized. Many identify themselves as academics and want to secure the tenure track job even if this is no longer a real possibility. Several times in the past two years I have been told that while Oplerno is the perfect new educational platform, they were only interested in working with us until they secured more traditional academic position. This made me realize how much institutional affiliation is an important factor in the calculus of their own social/political/academic

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⁴ A subaltern was the lowest level of colonial officer with power over native people in the British Empire.
capital. They are willing to put up with a lot of abuse in order to maintain tenuous institutional affiliation.

In the first several months of recruiting faculty, Oplerno was also contacted by a few organizations that were organizing adjuncts as part of a larger labor movement. They fully supported our goals and vision that academics should own the content of the courses, set the price, earn a better then living wage and enjoy job security. However, in each instance they wanted to work within traditional academic institutions to achieve this. I showed them the impossibility of the current higher education system to implement these goals. The counter argument they gave was that government needed to fully fund higher education or the system needed to change. The leaders of the growing adjunct labor movement are deluding themselves if they think tenure and government support will help the underlying economics of higher education. Institutional affiliation or academic rank will provide no shelter from the coming storms unless your institution is elite and has a large endowment.

The most successful Oplerno faculty are those who have abandoned the current system entirely. They are public intellectuals like Dr. Greg Sadler who has a large following on UTube. He writes and publishes but not always in peer reviewed journals. Greg is an amazing philosopher who engages his students and the public in discussions on all kinds of topics. Any philosophy department would be lucky to have him, but there are not a lot of tenured positions available. Dr. Sadler travels the earth virtually and earns a living while “adjuncting” for all kinds of institutions. He attracts students because he
goes out and engages them in the public sphere. This is something that most adjuncts do not do or don’t do well.

As higher education becomes disintermediated and institutions like Oplerno arise the value of some institutional brands fall. Scholar/practitioners have an opportunity to create their own brands centered around their teaching ability and reputation. For example, if I want to learn about a particular subject shouldn’t I have access to the best teachers regardless of where I am living? Accessibility is a foundation of equity and social justice. Shouldn’t the teachers be in charge and rewarded for their skills regardless of institutional affiliation or lack thereof.

I also started to approach higher educational institutions with the idea of providing content/courses. Colleges and universities cannot specialize is everything. In fact, keeping up with the latest developments in any field are very difficult. In the case of fields like the humanities and social sciences many departments struggle to maintain course offerings that reflect more than one theoretical or methodological approach. This is also reflected in the recent study published in the peer-reviewed journal Science Advances. The authors’ use quantitative data to show how faculty hires at all higher education universities come from just a few institutions. “Of the faculty sampled, 86% met these criteria, indicating a nearly closed doctoral ecosystem among these institutions”(Clauset, Arbesman, & Larremore, 2015). Bourdieu’s analysis again proves prescient pointing out the insularity in many disciplines, departments and institutions (Bourdieu, 1984). If higher education is supposed to reflect the cosmopolitan shouldn’t course offerings also include theoretical, educational and methodological diversity?
For many second tier institutions offering a diversity of courses is quite difficult given their limits of both financial, political and intellectual capital. It seemed quite natural that a few higher education institution would be interested in working with Oplerno to increase the both course offerings and access to highly qualified faculty at a lower price then they were paying for. The Oplerno team started looking at both our web traffic, twitter followers, Facebook posts and social media mentions and faculty to find some institutional prospects.

Around June of 2014, I received an e-mail from an individual identifying himself as the chancellor of a college located in Kenya. He was very interested in working with us to offer classes in eastern Africa and also his home city of Mumbai, India. He completely understood the Oplerno model and what it could do in terms of access for students and also improve the pay of faculty. Dr. Gupta also said that he had connections to several foundations that could also pay Oplerno to work in Africa and setup an office in Mumbai. Dr. Gupta asked a lot of questions and did an excellent job of due diligence on us. We shared our Vermont State Board of Education approval application (a public document) and were completely transparent regarding our financials, web traffic and user base. However, when I did my due diligence there were a couple of things that did not add up.

Dr. Gupta wanted to develop some medical courses for people in underserved regions of Africa and India. The need for such services is huge and a major barrier to social, economic development. Dr. Gupta wanted to create a hybrid program where individuals would come to his institution to learn but use online programs. He made the
argument that people needed guidance in their learning. While Dr. Gupta had an extensive online presence for an individual in his 50’s it was relatively recent—like a couple of years old. My gut told me that something was not right. While my desire to find an institution partner was great—I knew that if I picked the wrong first educational partner for Oplerno our credibility would be shot and open us up for all kinds of attacks. Oplerno would never get off the ground.

Over the course of the next month, we came up with the hybrid model of education that consisted of an onsite location where students could be mentored by a staff and access online education for their course work. This provided the best of both systems especially since it could be adapted to fit local areas by increasing their agency on an individual and community level. We were implementing a program in line with the theories of Paolo Freire, Hardt and Negri along with Franz Fanon to help decolonization and resistance to global monoculturalism (Freire, 1993; Hardt & Negri, 2004; Fannon, 2005). Sometimes we want something so bad that we blind ourselves to the fact that all is not what it seems.

In the course of more due diligence on Dr. Gupta, I found out that he was fired from an institution in Kenya for various ethical lapses. In addition, he had been investigated by both the Kenyan and Indian governments creating a diploma mill at a medical college. I scheduled a meeting with Dr. Gupta and presented him with my research and he promptly cut the Skype connection. W.S Gilbert wrote, “Things are seldom what they seem, skim milk often masquerades as cream.” Still the basic plan we had come up with would work, I just needed to find the right partner.
Another interesting opportunity arose when Oplerno was contacted by a medical college in Sichuan Province, PRC. They wanted to offer classes in mandarin on various subjects. They had initially been excited about courses in traditional Chinese medicine, I told them that we did not have the capacity to properly evaluate these classes. In addition, getting accreditation for medical courses was not something that I wanted to attempt at this time. The group then talked about partnering with the local university to increase offerings in the humanities, social sciences and STEM. I activated my network in China and did a bunch of research on the institutions and people involved and everything checked out perfectly. Then politics intervened.

Xi Jinping launched his anti-corruption/foreign influence campaign just after assuming the position of General Secretary of the CCP. Xi immediately started to crackdown members of other groups with money and influence including the associates of the former General Secretary. Business in China relies a lot on guanxi or the concept of personal networks and reciprocity. Guanxi is not only transactional but also connects you to a set of relationships that form your social/political and cultural network. It also obligates you to perform certain tasks if called upon. When you establish a business relationship in China (and it is a process that can take years) you become part of a network.

When Xi launched his anti-corruption/foreign influence campaign he targeted several networks involving former officials including anyone connected to these officials by guanxi. Many different networks in China became the target of this campaign and included individuals who acted on behalf of “foreign interests.” I have been lucky enough
to develop a good network in China that acts as an early warning system for political change. When I received news that individuals were being arrested for their connections to both foreign foundations and educational institutions Oplerno stopped all interactions. It is not ethical to place people at risk and several were taking big chances involving both academic collaboration and content creation. The PRC is very sensitive to foreign influence in educational policy in light of the changing political environment. We had to stop this promising collaboration. Someday things will change. Since Oplerno acted in a respectful way, the PRC is likely to look on us favorably in the future.

In addition to working globally, I also tried to develop relationships with some local higher educational institutions. One in particular looked very promising. One of their faculty members had been part of the team who evaluated Oplerno’s approval application for the Vermont State Board of Education. This institution has a fairly large online program and is well known for some of the work they do internationally. Two months after getting our approval I was invited to meet with a group of faculty, administrators and staff to talk with them about Oplerno and possible collaborations. It seems quite promising, but things are never what they seem.

In our first meeting, I gave a short presentation about Oplerno and showed them some of the courses our faculty had created. They asked me about the development costs for the material that I had already produced.

I answered, “Nothing. Faculty own the content they create and can teach a course of any size up to 25 people.”
One of their online leaders asked how we could trust that the content created is truthful and valid? I answered, “If our team does not have the knowledge to evaluate a course we hire an outside expert. How do you evaluate content?”

She answered. “We buy our courses from Piersons or produce it in house.” Piersons is one of the largest suppliers of online content for education. They generally change $500 for the content in a class along with some support. This institution was basically using Piersons to create a good deal of their online curriculum.

Development costs and the ability of Oplerno’s network to create customized courses in under three months is what everyone focused on. The administrators and the faculty really liked this aspect of our business/educational model. After this initial meeting I was asked to return to work out the details of a pilot program. It was our first big break.

Over the next couple of weeks I contacted a few of our faculty members and they finished courses that were perfectly in line with what this institution needed. When I asked them about what they would charge—they said that $500 per student would work well. This means that Oplerno costs as much as Pierson’s but also provides the instructor for the class. Content and instruction for $500 a student. Each Oplerno faculty member would earn $8000 per section of 20 students. The best plans sometimes to not come to pass.

Later that summer I drove back to that college and had another meeting. This time the team was much smaller and consisted of a senior vice president, a faculty member and the operations head of their online division. I presented my offer and
showed them that right away they would be making money off of every class they offered Oplerno’s content. I knew something was wrong when the SVP looked shocked. “What’s wrong?” I asked.

“In your sheet it says that your faculty member would be making $8000 per section of 20 students. Is that correct?”

“Yes, they own the curriculum and our faculty contract states that in this case they earn $400 per student. In a class of 20 that means $8000 per section.”

“We cannot agree to that. If our faculty got wind of the fact that you are paying double what we are everyone will leave us and start working for you.”

In the ten seconds it took to say those words our relationship changed and I realized that Oplerno was going to be successful in changing higher education.

“Why not just pay your faculty less money?” He asked.

“The whole point of our business model is to lower costs for students and increase faculty pay. You are asking me to compromise on our fundamental principle. If I agree to what you want ,I lose all credibility with my faculty. I’m not selling them out.”

We are all faced with hard choices in life. There are moments when we are asked to compromise our values. It would have been really nice to secure a contract with that educational institution. This would have solved many financial problems that Oplerno faced. An alliance with this institution would have generated a lot of media coverage, but the cost of our integrity would have crippled Oplerno long term. This conversation just reconfirmed for me that higher education was not only a business, but also exploitative. An administrator had killed a deal not because our classes were
substandard, but due to fear that the faculty would gain the upper hand in this very closed labor market.

**Getting from Zero to One and then Two**

Peter Thiel author of *Zero to One: How to Build the Future*, founder of Paypal and the critic of the higher education thinks that going from idea to first customer is the most difficult thing a startup can achieve. He is right. The first customer validates your vision of the future and provides you with valuable feedback that is priceless. Our first class of two students was taught by Greg Sadler. He recruited these individuals from the legions of his followers on Utube. Two students was a victory and we celebrated, but 2 students does not a higher education revolution make.

After we noticed that students were not flocking to our banner and faculty were generally incapable of network marketing moral was low. Daniel started to search around for other opportunities where Oplerno could find traction and customers/students. We decided on a hyper local and hyper global strategy. I would concentrate on finding some customers in Vermont. Daniel would look for opportunities in Europe.

We knew that Oplerno would work, but the failures to gain any real traction was a bit demoralizing. At the time I started Oplerno my expectations regarding the quickness of growth were unrealistic. Jacques Mattheij says that it takes about three years for a startup to generate significant revenue to support itself (Mattheij, 2011). Depending on how you define the starting point, Oplerno was just two years old since incorporation or one year old from approval to operate. We reminded ourselves that we had
accomplished a lot in a short amount of time, but that now we needed to get some institutional customers.

I created a list of around 50 local and regional businesses on Podio and started to research both their operations and potential educational needs. The group included local not-for-profit agencies, educational institutions and businesses. I reached out to my network and made contact with everyone. Sometimes I got the Heisman—a stiff arm rejection for a meeting. On other occasions I got to meet with the CEO or Head of Human Resources. I’d walk them through a simple presentation, showing off our classes and how we could help them with various workforce development issues. Out of the 40 prospects, we got around 30 meetings and are now in discussions with 5 local organizations. Cold calling is the most difficult way to get a customer or client. 12.5% success rate in even getting a meeting is great. Oplerno had the content, the network and even validation that we could create and run high quality graduate and undergraduate courses. Our social and cultural capital was starting to increase along with our credibility.

Every month we add a few more students and teachers to our community. In the summer of 2015 we started to work with Burlington College and a few other institutions in Vermont. While our growth is slow we are starting to get noticed and I know that long term we will be successful so long as we keep our costs low and remain patient. We still have a long journey a head of us, but I think in the end we have a great chance successfully realizing Oplerno’s mission and guiding principles.
After 2 years, Oplerno has still not yet gained the traction to become a viable educational institution. Our expenses are still below $800 a month, but our income falls far below this number. While I am confident that our mission and business model will be successful in the future--the cost and sacrifice have been greater then I would have liked. I don’t regret the work that I have done but the personal, family and emotional cost of starting another educational institution have been great for all involved. Only time will tell if it was worth it.
CHAPTER 4: LESSONS LEARNED

Higher education is not going to become accessible globally if it is not redesigned from the ground up. Things don’t get better unless we ask the difficult questions, challenge the status quo and take a chance. The Oplerno community is growing and that will eventually make all the difference. Lots of people believe in our mission and more are finding out about us everyday.

Oplerno is not the answer but it is an answer. It is an answer to a set of experiences that I had during my time in the Ed.D Program at the University of Vermont. This experience was not always pleasant but on balance it is yielding a positive result. Academia is a product of our culture, economy and class. It is a microcosm of all the issues our world faces but in a different arena with other players. It is deeply flawed just like we all are.

Higher Education should not be just a business or a jobs program for intellectuals. It should to be an almost spiritual calling that seeks to develop the potential of all people. Over the past two centuries, a person needed to travel great distances to work with a master teacher to learn. Students also had to live in residential communities far from their homes and villages in order to goto class. Finally, only a small number of individuals obtained the prerequisite skills needed to attend a university. Universal, accessible and affordable education can and should be a human right for the 7 billion people on this planet. A window of opportunity is opening.

I get pretty tired of hearing administrators and faculty praise themselves for increasing enrollment by 10% when that just represents another 200 students. It is also
depressing to hear the praises of a new program whose goal is to admit three of four new students every year. That kind of growth will never lead to more faculty positions or make a big difference to the 7 billion who share this planet with us. Out there in rural Vermont, suburban Sao Paolo, a slum in Mumbai, or a city in Kenya lives a genius. He/She will never get the opportunity to reach their potential as an artist, poet, chemist, mathematician, nano-technologist or astrobiologist if we—as individuals, institutions, professors, administrators and staff—don’t change the current system dramatically. Knowledge is not limited resource but grows as more people acquire it. Out of knowledge comes opportunity and agency which is the basis of social justice.

The price of change is always high, but the price of the status quo condemns many to be less than what they might become. It is a waste of our collective potential as individuals and communities.

Oplerno is not the solution. It is a solution. Go find yours!
References


http://scholar.google.com/scholar?oi=bibs&hl=en&q=bruno+Latour

http://scholar.google.com/scholar?q=John+Law&btnG=&hl=en&as_sdt=0% C46

http://scholar.google.com/scholar?q=manuel+delanda&btnG=&hl=en&as_s t=0%2C46


Appendix A

The following is an explanation of the concept of assemblage that can be used to understand the broader concept of agency extended to non-human actors.

On Assemblages and Agency

Centralization of power through institutional methods of social production and economic control is made possible though the deployment of technology, rules and regulations, and the transformation of cultural systems via education (Guattari & Deleuze, 1983; Habermas, 1991; Hardt & Negri, 2000; Latour, 2005). Higher education can be interpreted from the perspective of assemblages and networks that grow, break up, and reassemble overtime.

In the late 1980s and early 1990s, French post-structuralism and other postmodern philosophies created new epistemological categories in the realms of philosophy and sociology and applied them to cultural and political systems. These categories attempted to deal with an entire concept of agency that included a nonhuman point of view. Manuel De Landa (1991, 2009) looked at the development of the biotechnological phylum that could impact human individuals and cultures in terms of their ability to process information and influence the public sphere. Gilles Deleuze and Félix Guattari’s concept of assemblages is very useful in the examination of the transitions that are occurring in higher education at this time. The authors deconstructed many of the epistemological categories that are the basis of the social sciences, including individual, culture, and even society (1987). They developed a method of recognizing the categories in between
and beyond individuality and agency. Rather than concentrating on either a structural functionalist approach like Durkheim (1980) or a human action–oriented approach, Deleuze and Guattari deploy the concept of assemblage to study different networks between these scales. This allows for the identification of constructs that are outside the usual units of analysis in social science, which we might call nonhuman agency.

The study of the impact that nonhuman actors have on human society is not a new approach to examining the influence of technological change on individuals and cultures. Bruno Latour in the late 1980s and mid-1990s made the exploration of nonhuman actors the center of his research into technology and culture (1988, 1996). John Law created a similar line of research when he developed actor-network theory (1999). The importance of these thinkers creating a more nuanced understanding of society and change cannot be underestimated. Law, DeLanda, and Latour deconstructed the epistemological and ontological categories centered on agency, allowing for other voices to be heard and for us to look at institutions in new ways using these basic categories:

1. Individuals are made of assemblages. They are defined by where you draw the lines.
2. Systems are made up of interconnected individuals/assemblages.
3. All systems and individuals/assemblages are made up of the same material and energy, but they are configured in different ways.
Here is my ontological claim: *Agency is always contingent on scale, material, exchange, and epistemology. Within this context, agency is the ability to impact another.* This claim is just a conceptual tool that I have used to make sense of higher education. It contains the framework that I use to present an idea of agency that I think is useful in describing the interstitial spaces between philosophy, the humanities, and the social and physical sciences.

Determining the lines that define the individual, the system, and agency is a question at the heart of human meaning since before the writing of *De Anima* by Aristotle (Aristotle, *De Anima*, 2006). As the boundaries between Deleuzian assemblages become even more difficult to draw and defend, the issue that Aristotle grappled with in his book are more central than ever: What is the difference between living and nonliving? The answer to this question will not only define humanity in the twenty-first century, but it will either expand or limit the options available for us to create a sustainable and just world. The concept of agency lies at the heart of our collective power to transform institutions, impact the lives of individuals, and understand the nature of our collective being. It is also a powerful tool that we can deploy to better understand the workings of higher education institutions.

**Individuals As Assemblages**

Individuality, while seemingly a simple and commonsense concept, is anything but. The entire concept of “I” is a network of various mental and physical phenomena existing on a razor’s edge between being and nothingness. The “I” is a collection of
wholes that can be broken down into an infinite number of constituents and is defined as much by the question of identity as by its answer. Aristotle linked the definition of the individual to the physical body and the “soul” or “life force” that it contains (Aristotle, De Anima, 2006). Understanding the interaction between the physical and soul/life force is a major focus of his extant works. These ontological categories live on and dominate science, philosophy, and our conception of truth. We seek a soul/life force and work hard at understanding, maintaining, and even modifying the body. We search the world for will and representation (Schopenhauer, 1966).

The dualism of soul and body is not the only way to arrive at a well-examined “I.” The “I” can be created not as a duality but rather directly through the interaction of any two objects. This construction is used in the Mulamadhyamakarakarika by Nagarjuna, one of the central texts of Mahayana Buddhism (Ngrjuna, 1995). For the Mahayana and other Buddhists, the individual lacks any core self but is rather a collection of objects whose existence can only be understood through a close examination of their mutual dependence (Nagao, 1989). This ontology illuminates the dark corners because it dissolves any attempts to create a privilege position of examination, forcing all things to a test where existence is a function of interaction rather then just a being in mind. The individual human being does not have a special place as the arbitrator of the universe but is itself made up of an infinite variety of objects whose existence is defined through interaction.

There is strength in each of these approaches. The concept of soul/life force linked with the body develops into a philosophical approach that examines form and function. This viewpoint—combined with the idea that all bodies are made up of
relational objects that can be deconstructed into infinite constituent parts—creates a powerful tool that examines form, function, and scale. Synthesizing these two ontologies is difficult, but it has been attempted several times in the last 50 years. Bruno Latour, Manuel De Landa, Mike Davis, and the team of Gilles Deleuze and Félix Guattari have each explored this interstitial space. However, these philosophers have a slightly different take on the idea of what makes the “I.” Let’s start by examining the oldest statements of this group first.

Gilles Deleuze and Félix Guattari were both faculty members at the University of Paris VIII in 1969 just after the May 1968 revolts. The chair of the Philosophy Department at the time was none other than Michel Foucault. Their faculty meetings must have been fun to watch. It is not difficult to visualize a more fruitful intellectual environment for the examination of agency, power, and the individual than a smoke-filled faculty room with Foucault, Deleuze, Guattari, and Lyotard holding court in the shadow of the strikes. *Mai 68* transformed French society and ushered in a very different kind of academic and social discourse, but at great cost in civil violence (Ross, 2004).

In the early 1970s, Deleuze and Guattari wrote the first volume of *Capitalism and Schizophrenia*, entitled *Anti-Oedipus*. It examines how desire and the need for order create totalitarian and fascist tendencies in capitalism and society. It is also an attempt to examine the causes of the *Mai 68* demonstrations and the reasons the revolt did not continue (Guattari & Deleuze, 1983; Dosse, 2011). Another subtext to the work is an examination of the impact of economic, political, and social networks on the subconscious and vice versa. This journey forced this creative pair to develop a set of
linguistic and methodological constructs that significantly challenged continental philosophy and opened up a space for the study of nonhuman agency that Davis, Latour, and De Landa have further explored.

One of the most interesting constructs this dynamic pair discovered was assemblage. In the introduction to *A Thousand Plateaus*, the second volume of *Capitalism and Schizophrenia*, the word appears in the second paragraph. Assemblage is both material and a force, but it’s also an examination and becoming (Deleuze & Guattari, 1987). In language reminiscent of Nagarjuna, the authors use the analogy of a book to show the multiple networks, forces, meanings, and materials that create this literary assemblage. Deleuze and Guattari challenge the philosopher/social scientist to think in terms of material, meaning, and exchange in the quest for the origin of ontology.

All we talk about are multiplicities, lines strata and segmentarities, lines of flight and intensities, mechanic assemblages and their various types, bodies without organs and their construction and selection, the plane of consistency and in each case the units of measure (Deleuze & Guattari, 1987, p. 4).

The last seven words are the most important, because they force an explicit link to an empirical exploration of discovery where what has been hidden can be revealed. Instead of relying just on categories of individual, group, and culture to explain social phenomena, Deleuze and Guattari create a freedom to measure and name other combinations of things—these things are assemblages. The individual is not just a life
force and matter; the mind is not only conscious and subconscious. Rather, this assemblage of the individual is connected to the economic, political, and cultural systems of society—each informs the other. The power of assemblage is that you can look for connections and networks outside of traditional epistemological conceptions and alter the ontology of any object so long as you are explicit about the assumptions you are making, the measurements you take, and the ontology you deploy.

Keeping this in mind, it is possible to deploy all kinds of metaphors and constructs to describe an individual human being. You can see the individual as a collection of cells, miniature machines, chemical processes, meaning-making constructs, or even as a cyborg (Haraway, 1990). Then, you can explore hybrid entities that exist in the interstitial spaces between disciplines, cultures, science, and meaning making (Grey, 1995). In the opening pages of Anti-Oedipus, Deleuze and Guattari begin by transforming the human being into a series of machines, all of which have the status of assemblages within the individual.

Everywhere it is machines—real ones, not figurative ones: machines driving other machines being driven by other machines, with all the necessary couplings and connections (Guattari & Deleuze, 1983, p. 1).

The ability to see assemblages and examine their purpose and function has opened new opportunities to study and examine the construct. You can see an example of this in the work Incorporations, a collection of articles assembled by Jonathan Crary and
Sanford Kwinter. In “The Genesis of the Individual,” Gilbert Simondon writes about the individual lacking any kind of center identity but instead “can pass out of phase with itself, it can—in any area—break its own bonds in relation to its center” (Simondon, 1992). Hillel Schwartz writes about the transformation of the dancer through the lens of torque and movement. Most importantly, she argues against the concept that humans move like machines but still accepts the ontology of the assemblage (Schwartz, 1992).

After reading 44 articles from a variety of perspectives in the book, you are left with the impression that there is no center to the individual or the institution, but just an infinite combination of assemblages (Crary & Kwinter, 1992).

Manuel De Landa, a disciple of Deleuze and Guattari, agrees wholeheartedly with the idea of assemblages and has argued throughout his career from a position that leaves open a space for agency that embraces a hard material determinism. In other words, since everything is a collection of assemblages, connections, and couplings, there is no life force or choice. This position is made very clear in A New Philosophy of Society.

... every social entity is shown to emerge from the interaction among entities operating at a smaller scale. The fact that the emergent wholes react back on their components to constrain and enable them does not result in a seamless totality (DeLanda, 2006).

There is no life force or even agency in the individual; rather, individuals are a collection of assemblages that create a collective serving itself and no other. No
characteristic of an individual is unique for DeLanda; all can be replicated by the mechanical phylum that human beings have only become recently aware of. (DeLanda, 1991). For De Landa, complex systems and assemblages use humans as “organic hosts” for their own systems of exchange, producing autocatalytic reactions (Landa, 1997, p. 63). Thus, individual human beings and the institutions they inhabit exist on a particular scale—somewhere between atoms and the universe—as a host for assemblages and their systems of exchange.

While DeLanda has taken this materialism to the extreme by arguing for a hard realism, a former professor from the École Nationale Supérieure des Mines de Paris named Bruno Latour has done just the opposite. The “Prince of Networks” had a moment of insight while driving his car from Dijon to Gray. “I was forced to stop, brought to my senses after an overdose of reductionism” (Latour, 1988, p. 162, as quoted in Harman, 2009, p. 13). Latour states that he repeated to himself, “Nothing can be reduced to anything else, nothing can be deduced from anything else, everything may be allied to everything else” (Latour, 1988). After this conversion experience, Latour wrote a book called Irreductions, which consisted of a series of maxims and other writings that created a foundation for his later work. However, knowing that his ontology was such a radical departure from currently accepted and en vogue traditions, he strategically decided to start his career by engaging in anthropological fieldwork at a neuroendocrinology laboratory in sunny San Diego, California (Harman, 2009). Irreductions was set aside, but only for a while. Latour used Irreductions as the ontology to frame his fieldwork and would attempt to collect evidence of the social construction of scientific knowledge.
What better way to develop the ontology of irredutionism than to do fieldwork in the epitome of reductionism—a scientific laboratory.

The fieldwork yielded material for three books: Laboratory Life, Science in Action, and The Pasteurization of France. The role of the individual in each of the books is quite different. In Laboratory Life, the individual scientist is engaged not in a search for objective truth but in a state of constant negotiation with various social, political, and economic forces in the production of what Latour decides is the main product/capital of a scientific laboratory—peer-reviewed published journal articles. In Science in Action, Latour reveals other parts of his ontology and shows that scientific discovery is, by its very nature, dominated by a process of “discovery” that creates a truth imbedded in contingency. In other words, scientific truth is itself socially constructed. Does this mean that gravity does not exist? No. Does this mean that there are not scientific laws? No again. What it does mean is that scientific laws are a socially constructed understanding of how the universe functions within preexisting cultural, economic, and ontological networks of exchange.

In The Pasteurization of France, Latour reveals the final section of his ontology’s foundation. Deconstructing the myth of the lone scientist having a moment of grand insight—like Archimedes’ eureka bathtub experience or Newton’s falling apple—Latour explores the great myth of Louis Pasteur’s discovery of microbes and the development of the hygienic movement. Latour sees the individual not as an assemblage of machines but as an irreducible agent with one important exception—the individual is a field upon which other forces assert their agency. In the case of Pasteur, he was dependent not only
on the microscope and agar plates but also the entire apparatus of the laboratory in which he did his work (Latour, 1988). In addition, the success of his discovery/ontology was dependent on social and political forces like the social hygiene movement, government agencies, individuals, and even chance encounters. Latour creates a history of Pasteur’s discoveries that deconstructs the very idea of placing the individual human being at the center of the stories of scientific discovery. Instead, human agency becomes dependent on contingency that arises in the myriad forces/assemblages that are encountered at labs in Paris, from agar plates and microscopes to laws and economics, along with leaving the possibility open for other things to assert their agency at some future date (Latour, 1988).

The last third of The Pasteurization of France contains a book within a book, and that is Irreductions. Again, it is a set of maxims, autobiographical stories, vignettes, and rants with an absurd set of numbers denoting a hierarchy of paragraphs and ideas that creates a kind of hypertext of infinite meaning making. It was prudent for Latour to keep this book hidden from view until he had completed the previous works, because much of it reads like the ramblings of a madman. However, it is brilliant because it defines the individual as an irreducible force on one level, but also a collection of other forces on another. In Irreductions, Latour challenges us to define agency in terms of one force on another, and that individual human beings need to take responsibility for the assemblages they create and empower. In 4.7.11, Latour makes a plea to recognize that not only is human agency itself limited, but also that other forces have as much or greater impact. His deconstruction of human agency and the individual allows him to battle with the forces that in the 1970s and 1980s—tangible agents like nuclear weapons; invisible
agents like realpolitik—threatened the world with mutual assured destruction. “In the few seconds that divide illumination from irradiation I want to be as agnostic as possible” (Latour, 1988).

**Welcome to the Assemblage**

A university is a thinking and breathing assemblage made up of distinct parts, feedback loops, heuristic systems, and networks of exchange. By recognizing it as an assemblage, new tools of analysis can be used that allow us to understand how a human being’s agency within its assemblage is constrained. It allows us to understand just how we have been assimilated and to what extent resistance and change is possible.

When I started my doctoral program, I was initially quite excited by the prospect of taking classes and interacting with the faculty. I knew many of them from the master’s program; others were old family friends and/or former associates, and each had a deep commitment to learning and teaching. However, as I spent more time working with and for the faculty, it became quite clear to me that their agency was constrained within various networks, structures, and assemblages that forced them to take positions seemingly at odds with some of their beliefs. For example, while we critiqued issues relating to class structure, there existed an unspoken hierarchical social structure centered on academic rank and capital. Clear distinctions, roles, responsibilities, and respect existed between senior tenured faculty, non tenured faculty, adjuncts, staff, and students, and arduous procedures, forms, and rules—stated and unstated—governed the behavior of each individual. This structure formed limits of possible action and agency within the context of institutional higher education.
Appendix B

The Use of SPN in this Dissertation

In 1962 Thomas Kuhn published *The Structure of Scientific Revolutions*. His thesis was the latest in a series of challenges to the claims that science was, at its heart, the development of ontological truths. It reexposed the limitations of both the scientific method and mathematics in their claims of epistemological superiority (Kuhn, 1962). In other words, Kuhn argued that science is not some activity independent of human cultural, economic, and political influence. This does not mean that science is somehow invalid. All Kuhn pointed out was that science had its limitations and that what has been accepted as truth tended to change over time.

The most often cited example of this is Galileo’s famous statement at his trial before the Inquisition. It is important to remember that Galileo was not convicted for supporting a heliocentric view of the universe. His problem was that the evidence he used to support his view clashed with the epistemological claims of Scholasticism (Galilei, 1610). Galileo used a telescope and direct observation to prove his point rather than citing texts based on the Bible and the writings of Aristotle. In fact, Galileo was very careful to avoid citations of any texts in his support of the heliocentric view of the universe. This allowed him to avoid the problems that would plague other proponents of this idea, such as Giordano Bruno and others who were eventually tried, convicted, and executed for their work (Yates F. B., 1964).
Anyone looking through the telescope could see that indeed not all objects in the universe revolved around the sun—the moons of Jupiter, for example, could be observed breaking the laws of Scholasticism (Yates F., 1966). One can argue—and many have—that this one observation set off a paradigm shift in thinking that had more to do with methodology than a rebirth of reason (Kuhn, 1962; Yates F. B., 1964; Napier, 1992; Yates F., 1966). The point is that at its most basic, Galileo used his own personal experience as a way of making sense of the universe—he did not rely just on books and inherited wisdom.

The past 50 years has seen a flowering of scientific studies that have built on the foundation laid by Galileo more than 400 years ago. Close examination of the methodological limitations of the sciences and social sciences influenced much of the theoretical work of the 1980s into the 2010s. Anthropologist Clifford Geertz developed a methodology that reconstructed ethnography from the study of exoticism into a reflection on the author’s own culture (Geertz, 1980). George Stocking applied these same ideas in his work on the history of anthropology, showing the change from so-called empirical work to a more qualitative approach (Stocking, 1992). In the mid-1980s, James Clifford and George Marcus assembled a team of “super theorists” and firmly placed sociology/anthropology in postmodern context where methodology was always embedded in the writer’s context and life experiences (Clifford & Marcus, 1986).

Europe developed its own reexamination of the sciences and social sciences, which came to be known as postmodernism. Gilles Deleuze and Félix Guattari, two French social scientists, used a variety of qualitative and quantitative methodologies in
their studies of psychological conditions. This helped create new treatment modalities for their patients that combined pharmacological and counseling approaches (Dosse, 2011). Bruno Latour showed how the scientific method is highly contingent in his work *Science in Action* (Latour, 1987). He followed this treatise by deconstructing “scientific” movements in *The Pasteurization of France* (Latour, The Pasteurization of France, 1988). In both these cases, the authors showed the contingent nature of truth claims, especially on an epistemological and ontological level. All of these theorists used some kind of narrative device to communicate these truths, and their narratives were full of examples that reflected personal experience.

Although qualitative and quantitative methods have their place and utility in the social sciences, most mainstream practitioners and theorists have—as illustrated by the above examples—recognized that the illusion of objectivity is just that: an illusion. Examining the contingent nature of our methodological claims is fundamental to good scholarship. This is especially the case when examining institutions and cultures that are different from our own. Researchers should construct “truth” within a framework that includes self-reflection. While qualitative research seems to rely on more objective truth claims, there are always limitations regarding what can be measured, the tools used for analysis, and the way in which results are interpreted (Popper, 2002).

I chose to write a scholarly personal narrative (SPN) dissertation for one reason—methodological honesty. It was important for me to be quite clear that my experience of graduate school informed the conception and creation of Oplerno. I used both quantitative and qualitative methods to construct the dissertation along with a theoretical
framework. My exploration of financial capital in the form of a computer model would be accepted as an excellent subject for a quantitative dissertation. However, the more interesting issue my SPN approach highlights centers around the reaction to the model by various people. Examining their reactions and my own through various theoretical frameworks is the very definition of scholarship. Understanding the reaction can best be done within a perspective of narrative writing.

Searching for understanding presupposes personal reflection. There are very few people who would argue for an ontology that did not take into consideration some aspect of self-context. Meaning presupposes a personal response but is universally recognized as contingent. This is what the great Indian philosopher Nagarjuna meant when he claimed that ultimate meaning was always embedded in conventional understanding (Nagarjuna, 1995). In other words, observation presupposes an observer. If you are being honest about any kind of research, you need to recognize it as a personal journey and one that you are taking on by yourself or alongside others. Self-reflection is a foundation for observation of any social, cultural, or political phenomena. For example, Charles Darwin’s great scientific treatise and wonderful narrative of journey, *The Voyage of the Beagle*, is a series of personal observations that created the basis for *The Origin of Species by Means of Natural Selection* and the theory of evolution. So why not use a story and personal experience to tell a truth? If Darwin did it, then can’t narrative also be research?

In the College of Education and Social Services at UVM, there is a bias on the part of some faculty against SPN. I have been told that SPN work is not legitimate
scholarship. When I asked why, I was told that such work is not considered academically serious. This is not really a legitimate critique but rather a personal statement about style, especially considering how much SPN shares with post-structuralism, ethnography, and the works of Latour, Davis, and Deleuze and Guattari. It is also ill informed when you look at the impact that this methodology is having. I was also told that SPN does not count as academic scholarship by peer-reviewed publications for tenure, nor does it have any kind of academic impact. Again this is a reflection of the internal conventions and politics of higher education and not reality. For example, I wrote my comprehensive examination for my Ed.M in the SPN style. After it was completed, I posted it on the academic social networking website Academia.edu. It is the second most downloaded paper by a student or faculty member in the Department of Education and Social Services. While this may not be a citation in a peer-reviewed journal, at least my work has been looked at and read beyond that relatively small, specialized world. That is impact—just not the kind that will get me tenure.

An Ed.D is not only a required step in preparation for a research position—it is also a professional degree. Many UVM Ed.Ds are serving in administrative or support positions in all kinds of educational institutions. If you are going to be a good leader, then you need to acquire the skills of self-reflection, be cognizant of the application of theory to practice, and be familiar with a wide variety of qualitative and quantitative approaches to data analysis. If the goal of an Ed.D is to produce leaders, then SPN is particularly useful because of both its self-reflective component and its methodological openness. Instead, many people are subtly forced to embark upon research projects that fit the
agenda of their advisors/academic patrons with the idea of applying for increasingly rare tenure track positions.

I relied on several books to prepare and write this dissertation. The first book is Nancy Munn’s ethnographic *The Fame of Gawa* (Munn, 1986). It is the study of an island in the South Pacific where a complex exchange system called “kula” developed. Dr. Munn did extensive fieldwork on the small island in the late 1970s and early 1980s. The study used a theoretical framework that traced social capital as measured by fame, yams, pigs, and chickens. Her eye for detail combined with the application of Marxist conceptions of capital to the social of the economy on Gawa. Using interviews, personal observations, and kinship models, she collected enough information to describe a complex society much like an academic institution. Her eye for detail combined with the application of Marxist conceptions of capital highlight Gawan social and economic structures. I considered it a great ethnographic study of a culture. In many ways, this dissertation draws heavily on ethnographic techniques of participant observation, and Munn’s work was an important influence.

Robert Nash’s books on scholarly personal narrative are critical guides in both the theory and practice of SPN. The two that I used are *Liberating Scholarly Writing: The Power of Personal Narrative* and *Me-Search and Re-Search: A Guide for Writing Scholarly Personal Narrative Manuscripts* (Nash, 2004; Nash & Bradley, 2011). Nash’s *Liberating Scholarly Writing* is a clear plea for more engaged and personal scholarly writing. It outlines both a disengagement within academia and an argument for reengagement of personal stories over theoretical reflection and pedantry. The book
provides several descriptions of SPN styles and examples of SPN dissertations and
writing, and it serves as the foundation for *Me-Search and Re-Search*, coauthored with
Dr. Demethra LaSha Bradley. Nash and Bradley’s book is a step-by-step guide to SPN
writing and guides the practitioner through the process of both research and writing. As a
guide to writing an SPN dissertation, it is excellent.

Although it takes quite a long time for new paradigms to be accepted in academia,
SPN is an important emerging methodology. Unlike both qualitative and quantative
methods, SPN does not suffer from the illusion of objectivity but is deeply self-reflective.
This makes it a powerful tool that can be used to question epistemological and
ontological assumptions, and it allows for other viewpoints to gain a hearing in the public
sphere. In fact, the flexibility of SPN allows for multidisciplinary approaches to complex
social, political, and economic issues. This is critical in the formation of educational
leaders, administrators, and policy makers who are self-reflective and innovative in their
thinking. This dissertation is an example of how SPN writing can not only illuminate
educational issues on a personal or institutional level but also formulate solutions for
some of the most pressing problems facing higher education today.
Appendix C

The following code can be uploaded into the program Stella or iThink available at http://www.iseesystems.com/softwares/Business/IthinkSoftware.aspx. The code below does not include the GUI/interface for the complete simulation.

\[
\text{Benefits}(t) = \text{Benefits}(t - dt) + (\text{Benefits}\_\text{Change}) \times dt
\]

INIT Benefits = 56993000

INFLOWS:
\[
\text{Benefits}\_\text{Change} = \text{Benefits} \times \text{Benefits}\_\text{Rate}\_\text{of}\_\text{Change}
\]

\[
\text{Continuing}\_\text{Ed}\_\text{Indirect}\_\text{Cost}\_\text{Reimbursement}(t) = \text{Continuing}\_\text{Ed}\_\text{Indirect}\_\text{Cost}\_\text{Reimbursement}(t - dt) + (\text{Continuing}\_\text{Ed}\_\text{Cost}\_\text{Reimbursement}\_\text{Change}) \times dt
\]

INIT Continuing\_\text{Ed}\_\text{Indirect}\_\text{Cost}\_\text{Reimbursement} = 4175000

INFLOWS:
\[
\text{Continuing}\_\text{Ed}\_\text{Cost}\_\text{Reimbursement}\_\text{Change} = \text{Continuing}\_\text{Ed}\_\text{Indirect}\_\text{Cost}\_\text{Reimbursement} - \text{Continuing}\_\text{Ed}\_\text{Indirect}\_\text{Cost}\_\text{Reimbursement}\_\text{Rate}\_\text{of}\_\text{Change}
\]

\[
\text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid}(t) = \text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid}(t - dt) + (\text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid}\_\text{Increase}) \times dt
\]

INIT Day\_\text{NonDegree}\_\text{Student}\_\text{Aid} = 484000

INFLOWS:
\[
\text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid}\_\text{Increase} = \text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid} \times \text{Day}\_\text{NonDegree}\_\text{Student}\_\text{Aid}\_\text{Rate}\_\text{of}\_\text{Change}\%
\]

\[
\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{In\_State}(t) = \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{In\_State}(t - dt) + (\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Increase}\_\text{In\_State}) \times dt
\]

INIT Day\_\text{NonDegree}\_\text{Tuition}\_\text{In\_State} = 926000

INFLOWS:
\[
\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Increase}\_\text{In\_State} = \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{In\_State} \times \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Rate}\_\text{of}\_\text{Increase}\_\text{In\_State}
\]

\[
\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Out\_of\_State}(t) = \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Out\_of\_State}(t - dt) + (\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Increase}\_\text{Out\_of\_State}) \times dt
\]

INIT Day\_\text{NonDegree}\_\text{Tuition}\_\text{Out\_of\_State} = 953000

INFLOWS:
\[
\text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Increase}\_\text{Out\_of\_State} = \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Out\_of\_State} \times \text{Day}\_\text{NonDegree}\_\text{Tuition}\_\text{Rate}\_\text{of}\_\text{Increase}\_\text{Out\_of\_State}
\]

\[
\text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund}(t) = \text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund}(t - dt) + (\text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund}\_\text{Change}) \times dt
\]

INIT Debt\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund} = 10274000

INFLOWS:
\[
\text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund}\_\text{Change} = \text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund} \times \text{Debt}\_\text{Repayment}\_\text{from}\_\text{Gen}\_\text{Fund}\_\text{Rate}\_\text{of}\_\text{Change}
\]
Energy(t) = Energy(t - dt) + (Energy_change) * dt
INIT Energy = 10632000
INFLOWS:
   ◼️ Energy_change = Energy*Energy_Rate_of_Change
Graduate_Financial_Aid(t) = Graduate_Financial_Aid(t - dt) + 
   (Graduate_Financial_Aid_Increase) * dt
INIT Graduate_Financial_Aid = 10603000
INFLOWS:
   ◼️ Graduate_Financial_Aid_Increase = Graduate_Financial_Aid* 
       Graduate_Financial_Aid_Rate_of_Change
Graduate_In_State_Tuition(t) = Graduate_In_State_Tuition(t - dt) + 
   (In_State_Graduate_Tuition) * dt
INIT Graduate_In_State_Tuition = 5064000
INFLOWS:
   ◼️ In_State_Graduate_Tuition = Graduate_In_State_Tuition* 
       Graduate_In_State_Tuition_Rate_of_Change
Graduate_Out_of_State_Tuition(t) = Graduate_Out_of_State_Tuition(t - dt) + 
   (Out_of_State_Graduate_Tuition) * dt
INIT Graduate_Out_of_State_Tuition = 14234000
INFLOWS:
   ◼️ Out_of_State_Graduate_Tuition = 
       Graduate_Out_of_State_Tuition*Out_of_State_Tuition_Rate_of_Change
Graduate_Teaching_Stipends(t) = Graduate_Teaching_Stipends(t - dt) + 
   (Graduate_Teaching_Stipends_Change) * dt
INIT Graduate_Teaching_Stipends = 5734000
INFLOWS:
   ◼️ Graduate_Teaching_Stipends_Change = Graduate_Teaching_Stipends* 
       Graduate_Teaching_Stipends_Rate_of_Change
Library_Aquisitions(t) = Library_Aquisitions(t - dt) + (Library_Aquisitions_Change) * dt
INIT Library_Aquisitions = 6534000
INFLOWS:
   ◼️ Library_Aquisitions_Change = Library_Aquisitions* 
       Library_Aquisitions_Rate_of_Change
Medical_Tuition(t) = Medical_Tuition(t - dt) + (Increase_in_Medical_Tuition) * dt
INIT Medical_Tuition = 19388000
INFLOWS:
   ◼️ Increase_in_Medical_Tuition = Medical_Tuition*Rate_of_Increase_in_Medical_Tuition
New_Facilities_Rental(t) = New_Facilities_Rental(t - dt) + (New_Facilities_Rental_Change) * dt
INIT New_Facilities_Rental = 2834000
INFLOWS:
   New_Facilities_Rental_Change = New_Facilities_Rental*New_Facilities_Rate_of_Change

Operating_Investment_Income(t) = Operating_Investment_Income(t - dt) + (Operating_Investment_Income_Change) * dt
INIT Operating_Investment_Income = 4422000
INFLOWS:
   Operating_Investment_Income_Change = Operating_Investment_Income*Operating_Income_Rate_of_Change

Operations_and_Equipment(t) = Operations_and_Equipment(t - dt) + (Operations_and_Equipment_Change) * dt
INIT Operations_and_Equipment = 45617000
INFLOWS:
   Operations_and_Equipment_Change = Operations_and_Equipment*Operations_and_Equipment_Rate_of_Change

Other_Facilities_Adm_Cost_Reimbursement(t) = Other_Facilities_Adm_Cost_Reimbursement(t - dt) + (Other_Facilities_Adm_Cost_Reimbursement_Change) * dt
INIT Other_Facilities_Adm_Cost_Reimbursement = 4132000
INFLOWS:
   Other_Facilities_Adm_Cost_Reimbursement_Change = Other_Facilities_Adm_Cost_Reimbursement*Other_Facilities_Adm_Cost_Reimbursement_Rate_of_Change

Other_Income(t) = Other_Income(t - dt) + (Other_Income_Change) * dt
INIT Other_Income = 7220000
INFLOWS:
   Other_Income_Change = Other_Income*Other_Income_Rate_of_Change

Plant_Improvements_Insurance_Water_Sewage(t) = Plant_Improvements_Insurance_Water_Sewage(t - dt) + (Plant_Improvements_Insurance_Water_Sewage_Change) * dt
INIT Plant_Improvements_Insurance_Water_Sewage = 4190000
INFLOWS:
   Plant_Improvements_Insurance_Water_Sewage_Change = Plant_Improvements_Insurance_Water_Sewage*Plant_Improvements_Insurance_Water_Sewage_Rate_of_Change
Res_Facilities_Adm_Cost_Reimbursement(t) = Res_Facilities_Adm_Cost_Reimbursement(t - dt) + (Res_Facilities_Adm_Cost_Reimburs_Change) * dt
INIT Res_Facilities_Adm_Cost_Reimbursement = 26387000
INFLOWS:

Sponsored_Programs_Inc_Fund(t) = Sponsored_Programs_Inc_Fund(t - dt) + (Sponsored_Programs_Inc_Fund_change) * dt
INIT Sponsored_Programs_Inc_Fund = 2113000
INFLOWS:
   Sponsored_Programs_Inc_Fund_change = Sponsored_Programs_Inc_Fund*R
   Sponsored_Programs_Inc_Fund_Rate_of_Change

State_Appropriation(t) = State_Appropriation(t - dt) + (Change_in_State_Appropriation) * dt
INIT State_Appropriation = 43334000
INFLOWS:
   Change_in_State_Appropriation = State_Appropriation*Rate_of.Change_in_State_Appropriation

Undergraduate_Financial_Aid(t) = Undergraduate_Financial_Aid(t - dt) + (Undergraduate_Financial_Aid_Increase) * dt
INIT Undergraduate_Financial_Aid = 74075000
INFLOWS:
   Undergraduate_Financial_Aid_Increase = Undergraduate_Financial_Aid*Undergraduate_Financial_Aid_Rate_of_Change

Undergrad_in_State_Tuition(t) = Undergrad_in_State_Tuition(t - dt) + (In_State_Undergrad_Tuition_Increase) * dt
INIT Undergrad_in_State_Tuition = 39829000
INFLOWS:
   In_State_Undergrad_Tuition_Increase = Undergrad_in_State_Tuition*Undergrad_in_State_Tuition_Rate_of_Change

Undergrad_Out_of_State_Tuition(t) = Undergrad_Out_of_State_Tuition(t - dt) + (Out_of_State_Undergrad_Tuition_Increase) * dt
INIT Undergrad_Out_of_State_Tuition = 198027000
INFLOWS:
\[\text{Unrestricted Endowment}(t) = \text{Unrestricted Endowment}(t - dt) + \text{(Unrestricted Endowment Change)} \times dt\]

INIT Unrestricted Endowment = 3336000

INFLOWS:
- Unrestricted Endowment Change = Unrestricted Endowment * Unrestricted Endowment Rate of Change

\[\text{Wages and Salaries}(t) = \text{Wages and Salaries}(t - dt) + \text{(Wages and Salaries Change)} \times dt\]

INIT Wages and Salaries = 138574000

INFLOWS:
- Wages and Salaries Change = Wages and Salaries * Wages and Salaries Rate of Change

- \text{Economic Profit or Loss} = \text{Total Revenue} - \text{Total Expenses}

- \text{Other Expenses} = \text{Debt Repayment from Gen Fund} + \text{Energy} + \text{Library Acquisitions} + \text{New Facilities Rental} + \text{Operations and Equipment} + \text{Plant Improvements} + \text{Insurance} + \text{Water Sewage} + \text{Sponsored Programs Inc Fund}

- \text{Revenue other than Tuition} = \text{Continuing Ed Indirect Cost Reimbursement} + \text{Medical Tuition} + \text{Operating Investment Income} + \text{Other Facilities Acm Cost Reimbursement} + \text{Other Income} + \text{Res Facilities Adm Cost Reimbursement} + \text{State Appropriation} + \text{Unrestricted Annual Giving} + \text{Unrestricted Endowment}

- \text{Salaries and Benefits of Employees} = \text{Benefits} + \text{Graduate Teaching Stipends} + \text{Wages and Salaries}

- \text{Total Expenses} = \text{Other Expenses} + \text{Salaries and Benefits of Employees}

- \text{Total Financial Aid} = \text{Day NonDegree Student Aid} + \text{Graduate Financial Aid} + \text{Undergraduate Financial Aid}

- \text{Total Revenue} = \text{Revenue other than Tuition} + \text{Tuition Revenue}

- \text{Tuition Graduate} = \text{Graduate In State Tuition} + \text{Graduate Out of State Tuition} + \text{Graduate Financial Aid}

- \text{Tuition Revenue} = \text{Tuition Graduate} + \text{Tuition Undergraduate} + \text{Tuition Day NonDegree}

- \text{Tuition Undergraduate} = \text{Undergrad In State Tuition} + \text{Undergrad Out of State Tuition} + \text{Undergraduate Financial Aid}

- \text{Tuition Day NonDegree} = \text{Day NonDegree Tuition In State} + \text{Day NonDegree Tuition Out of State} + \text{Day NonDegree Student Aid}
Appendix D

The following is a link to Oplerno’s certificate of approval by an online postsecondary school whose base of operations is in the State of Vermont. The application was submitted on February 7, 2014. (Rob’s note: I will print out a full copy for the final dissertation.)

https://www.dropbox.com/s/lurkfrz27m2yib/Oplerno%20Approval%20Application.pdf?dl=0