Paradoxes of Hybrid Organizing in the Cambridge Energy Alliance

by

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ABSTRACT

Hybrid organizations combine institutional logics, often in a search for novel solutions to complex problems such as climate change. This dissertation explores the conditions under which hybrid organizations are effective in realizing such solutions, along with the processes that strengthen or dissipate their distinctive capabilities. Building upon an in-depth field study of the public-private Cambridge Energy Alliance and its network of exchange partners, I argue that sustaining effective, innovative hybrid organizations is more likely when internal and external stakeholders navigate two paradoxes characteristic of hybrid organizing. The first is the *paradox of hybrid legitimacy*: hybridity expands access to a broader range of exchange relationships, but undermines exchange partners' willingness to commit resources to an organization that defies conventional schemas and familiar types. Evidence collected in this dissertation suggests that this paradox can be successfully navigated by offering options for exchange that fit into conventional schemas, working with others who are accustomed to the hybridity, or using interpersonal trust within structural and friendship ties as a scaffold for legitimacy. The second is *the catalyst's paradox*: alternative institutional logics have varied definitions of success that can conflict, as when the organization catalyzes but cannot capitalize on exchanges. Data suggest that this second paradox can be successfully navigated through reflective thinking, developing variable and complex practices, and cultivating resource streams that reward the organization for serving the whole and parts of a constituency simultaneously. Absent such strategies, the paradoxes of hybrid organizing are experienced as a challenge to coherent sensemaking and effective action, leading to patterns of inaction, oscillation among simplified patterns of action, and therefore reduction in organizational complexity and effectiveness.

Keywords: Hybrid organizations, paradox, institutional logics, public-private partnerships, cross-sectoral collaboration, energy efficiency, natural environment

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Preface

I was about a year into the process of researching and writing my dissertation when my advisor Wanda Orlikowski made a provocative observation: researchers are human beings. Sometimes they unconsciously project their personal and professional issues into their work. Perhaps my writing about hybrid organizations might be a reflection of my own struggles with hybridity. Although I was not initially open to confronting this possibility, time has revealed its truth. In this preface I would like to shed some light on these inner and outer struggles, in the hope that my audience might understand my biases, perspective, and motivation in writing this dissertation. I would also like to acknowledge the people on whose shoulders I have stood, laughed, and cried along the way.

My most fundamental hybridity is that of being both an academic – someone who wants to understand the world – and an activist who wants to help change it. My academic curiosity about how people think, learn, and organize themselves began as a child reading my mother's psychology textbooks, and it grew through my undergraduate studies in cognitive neuroscience, my Masters in Education, my work in a consulting firm supporting organizational learning, and doctoral seminars at MIT and Harvard that took a sociological perspective on organization studies. My activism around environmental sustainability has similarly early roots – from my boyhood in Boulder, Colorado watching nervously from the foothills as a brown cloud grew over Denver, to my later travels in India where I saw burning piles of trash accumulating in Himalayan valleys, to my reading thoughtful manifestos for sustainability like Hawken and Lovins' *Natural Capitalism*. My intention in coming to MIT was to somehow bring these spheres together – academia and activism, organization studies and sustainability.

During my first year at MIT I got some thoughtful advice from Paul Carlile (now at Boston University), who said to me that as management scholars, our duty is *to help society manage its resources better*. This statement recalls what Rakesh Khurana (2007) called the *Higher Aims* of the management profession, and captured my imagination as an engaged scholar. The sentiment was reinforced in my first meeting with Rick Locke, who would become a close mentor and thesis committee member. Rick taught me that great research does three things: it connects to the researcher's personal passions; it has impact in the world; and it engages people's intellectual interest.

For me, the fair and effective management of natural resources is *the* pressing and fundamental problem of our time. As human population and affluence grow, resources like fossil fuels, minerals, clean water, and healthy soil become increasingly difficult to secure, and the byproducts of their consumption place an increasing strain on climate, ecosystem and human health. In this context, I understand there to be a moral imperative – based on both intra- and inter-generational justice – to balance the needs of the present with those of the future, and those of the wealthy with those of the poor. My fundamental question is, through what organizational models and practices can we do so?

Coming into MIT I had the sense that there are two general strategies to move toward this balance (otherwise known as sustainability) that are relatively uncontroversial, in that economic and environmental benefit go hand in hand. Thus they are all the more provocative and puzzling when they fail, and merit close inquiry by social scientists. One strategy is to eliminate tragic accidents (like those at BP's Texas City refinery and Deepwater Horizon drilling platform) that cause human, economic, and environmental destruction. The other is to eliminate waste, that is, the excessive consumption of resources that provides relatively little benefit to anyone. My first research project (Jay 2008) explored continuous improvement programs in oil refineries as an avenue toward the former. The quest for energy efficiency is a pervasive and illustrative example of the latter, and eventually became the focus of my dissertation research.

I struggled, however, to figure out how to connect the intellectual concerns of my organization studies community with these societal problems, and to apply the tools of our field to solving them. Particularly in the first two years of doctoral studies, I lived a double life. My "day job" academic focus was on learning the theory and methods of organization studies. Institutional theory, resource dependence theory, social exchange theory, regression, ethnography, and system dynamics occupied my mind. I did not know how to connect them to the sustainability issues that pulled at my heart.

Thus my first foray into the domain of energy efficiency was an activist one. When I arrived at MIT, the MIT Energy Initiative was just getting started, which focused on getting funding for research and education to solve global energy challenges. The campus itself, however, was far from a beacon of environmental leadership. There were no concrete targets for energy use or greenhouse gas reduction. The aging buildings wasted energy continuously. Our dining system, based largely on takeout food, was rife with packaging and other material waste. Most importantly, while there was a diffuse network of students, staff, and faculty passionate about MIT's

environmental footprint, a coherent approach to capturing that human energy had not emerged.

At the invitation of my friend and colleague Kate Parrot, I started to get engaged in confronting these campus sustainability challenges. She and I, along with four other management, engineering, and urban planning students began to call ourselves the Sustainability@MIT Student Working Group, or S* for short. We created a special course with guidance by MIT Sloan Senior Lecturer Anjali Sastry. We combined readings about organizational transformation with our own analyses of the MIT situation. This group was an inflection point in integrating the academic and activist sides of my identity, a place to apply what I was learning in my classes and early forays into research. Together these students built an alliance of energy and environmental organizations on campus, and we put on an event series called the MIT Generator that imitated the continuous improvement programs I was starting to observe in my oil refinery research. At the events, we educated students about campus energy use, then held an open microphone to pitch hands-on projects to improve campus sustainability. Over the years, two dozen working groups made major progress, from transportation planning and behavior change campaigns to biodiesel and thermoelectric installations on campus. Most importantly, we were successful in helping spur the MIT administration into action, and an official "Walk the Talk" task force formed in early 2007, on which I served as the graduate student representative. In this group I found kindred spirits among faculty and administrators around the university. Together we lobbied for aggressive investments in campus energy efficiency, based in part on analyses conducted by student teams.

To support this work, I began reading literature about energy efficiency as a broader phenomenon. It seemed from my readings that practically every household and business on the planet has at least some technical opportunity to improve its buildings, equipment, and practices so as to realize human aspirations with less fuel consumption. Such improvements can result in both a private benefit (in the form of financial or labor savings on fuel consumption) and a public benefit (in the form of pollution prevention and common-pool resource conservation).

Initially I was interested in the simple question, why aren't these compound benefits realized by households and businesses? What are the organizational barriers to energy efficiency at places like MIT? It turned out, however, that this territory had been reasonably well-explored in an arc of research from Amory Lovins (Lovins 1976) to McKinsey & Company (Enkvist, Nauclér, and Rosander 2007) to Biggart and Lutzenhiser (2007), who have catalogued the market and policy barriers to

energy efficiency. What seemed ripe for study was a second order question – how can we build organizations and institutions that overcome those barriers?

In looking at this second question, I started to see that the opportunity for combined public and private benefit in eco-efficiency improvements creates an important demand on people that aim to support and realize those improvements. They must organize *both* collective resources to support the public interest *and* individual/private resources to support private interests. In the language of organizational sociology, they must somehow connect institutional logics of the state and the market. Regulation is one avenue for doing so, and certainly an effective one: I watched joyfully as Massachusetts passed the landmark "Green Communities Act" in 2008, which used government mandates to force private utility companies to invest in efficiency. These changes eventually led MIT's utility company NSTAR to assist the university with a significant package of efficiency measures. But as I elaborate in the chapters that follow, a parallel trend has been the formation of hybrid, cross-sectoral alliances and partnerships that attempt to bring those public and private logics harmoniously under a single roof.

It turned out that I was fortunate to have an exemplar of such an organization in my backyard, in the form of the Cambridge Energy Alliance (CEA). I was fascinated by the organizational challenges of such alliances, which seemed to hold promise for solving tough societal problems. They offered a complement to regulation and perhaps a necessary substitute during conservative political regimes. The CEA founders were gracious and open to my curiosity, and invited me in as a kind of researcher in residence.

In retrospect, I must admit that my intentions in entering this field site were not at all clear. The activist side of me perhaps wanted to live vicariously through the organization, to take on a whole city full of buildings and campuses, after I had struggled to improve the MIT campus. My academic side wanted to use CEA's interactions with those clients as a window into the clients' organizational challenges. Gradually, and with the help of the colleagues I mention below, I began to narrow my focus back down onto the public-private hybrid nature of CEA that had originally attracted me, and the struggles they faced internally. Through an electronic heap of memos, dissertation proposals, paper and chapter drafts, I came to understand there to be two basic empirical questions I could help answer. How effective are such hybrid organizations, and under what conditions can they succeed? What are the unintended consequences of their hybridity, both for the evolution of the organizations and the problems they aim to solve?

In studying this phenomenon of public-private hybrid organizations, however, I unwittingly created yet a third hybridity for myself in addition to academic/activist and organization studies/sustainability. Work on public-private, cross-sectoral alliances appeals to both a business management audience and a public administration audience. This three-dimensional compound identity and audience made it incredibly difficult for me to frame and write a dissertation. Each of these identities brings with it a community of scholarship and practice, an audience with its own language and theoretical lens, another set of conferences and journals, another professional pathway. How to juggle these? Which should be my foreground and focus?

My first drafts of these chapters often sought to explore all angles simultaneously, with unfortunate consequences. My committee, which is itself a hybrid organization (Wanda Orlikowski is from organization studies, Susan Silbey is from sociology of law, and Rick Locke is from political science and industrial relations), has been incredibly patient in helping me muddle through this dissertation.

The first challenge I faced was to meld the academic voice of critical objectivity with the activist voice of passionate engagement. For example, some of the text in this preface was actually included in an early attempt at a theory chapter, creating a clash between the social constructivist voice of organizational sociology and my own passion for sustainability. Susan Silbey, providing thoughtful comments on draft after draft of my chapters, helped me see the value of teasing apart my activist commitments from my theoretical contribution. This preface is a product of that differentiation. All three members of my committee then pushed me to be ever more rigorous and crisp in the separation of data, analysis, theory building, and implications for practice. My tendency had been to lump them all together in a narrative that might be engaging to read but did not have the clarity and rigor needed of quality academic work. Chapters 3 and 4 are the product of an intense learning process in reaching toward that precision. I still have a great distance to go.

The second challenge was to frame the dissertation in a way that could reach both business management and public administration audiences. Wanda pushed me to be ambitious in doing so, and to reach a larger and more discipline-grounded audience that might exist within these communities. The result is that I have appealed to institutional theory in sociology as a primary framing, which has been employed in both the management and public administration fields quite fruitfully. Doing so had unexpected benefits. It allowed me to step back from my particular interest in public-private, cross-sectoral hybridity and understand the parallels with other forms of institutional hybridity, thereby engaging the work of scholars like David Stark, Fiona Murray, and Juliana Battilana. The institutional lens also allowed

me to catch an insight I weave throughout the dissertation – that hybrid organizers are institutional entrepreneurs – an insight I will be pursuing in further research.

Of course, if I am to close the reflective loop I began at the beginning of this Preface, I should apply the lessons of my research back to my own hybrid identity. What are these lessons?

The lesson of Chapter 3, put simply, is as follows. We might think that combining public and private institutional elements increases the total resources, capabilities, and avenues for trust-building available to an organization. But this combination comes at an unexpected cost – confusing exchange partners and making you appear *less* trustworthy. Thus, it can actually take *more* not less effort at communication and trust building to make a hybrid organization succeed. This is the paradox of hybrid legitimacy. Partners with whom hybrid organizations have a personal tie and who trust them already, and partners accustomed to hybridity through their own identity and relationships, may be the first people to reach.

If I apply this lesson to myself, it suggests that I should get this dissertation (and the papers that I extract) into the hands of people who are interdisciplinary activist-scholars like myself. This preface is a call out to those kindred spirits, and I hope my dissertation reaches this audience. Finding fruitful paper publication venues and tenure review processes – that will be the next challenge.

The lesson of Chapter 4 is that hybrid organizations often have two kinds of goals – those based on serving individuals like a business, and those based on reaching collective goals like a government program. These are mostly compatible except when one's work indirectly leads to satisfaction of the collective goals without capturing client revenue. If this outcome is to be expected, then it is critical to compensation for the collective goals. This is the catalyst's paradox.

There are a few ways that I have seen the catalyst's paradox unfold in my own experience as a scholar-activist. The first is that our commitments to collective endeavors like campus sustainability are rarely acknowledged or compensated, except as a "service" footnote in a performance review or tenure packet. My hat goes off to every contributor to the MIT Energy Initiative, the "Walk the Talk" task force, the Sloan Sustainability Research Group, Sustainability@MIT, the MIT Generator, the Energy Club, and every other group and organization that challenges the MIT community to solve tough problems. These groups sustain and inspire us as we go about our "day jobs" in academia.

The second way I see this tension is in the life of an intellectual community. We are rewarded for our individual publications, yet we accomplish nothing without the

support and critique of our colleagues. There are some people whose very presence increases the quantity and quality of output of those around them. Acknowledgement sections like the following are often the only concrete way they are rewarded and respected for doing so.

Acknowledgments

First and foremost my gratitude goes once again to my thesis committee of Wanda Orlikowski, Rick Locke, and Susan Silbey. These three scholars and friends have comprised a most effective and most dynamic hybrid organization. Advising young researchers is a labor of love in academia, one for which there is minimal support, and I feel very well loved by Wanda's, Rick's, and Susan's intense dedication.

Through five years of doctoral studies, Wanda has stuck with me through my rambling memos, my mood swings between fascination and frustration, my stretches and contractions of timelines amid the upheaval of becoming a father, my failure to clearly designate her as committee chair until two years into the dissertation process (a symptom of hybrid confusion, no doubt), and countless other trials and tribulations. She has done her best to impart the values she so profoundly embodies: to be patient with my process, to be reflective on my perspective, to sit with the complexity of the world and firmly resist the temptation to oversimplify, to be humble about the claims I make, and to be meticulous about my choice of words and concepts. Suffice to say I will be continuing to learn from her for years to come.

Rick has been a profound mentor and role model. His leadership has inspired me in every context I have seen him exercise it: at Sloan in the creation of our sustainability initiative; at MIT in the effort to weather the economic crisis with our institution's values intact; and in the network of scholars engaged in making global capitalism more just and sustainable. In his own work, Rick has done exactly what he has advised me to do – to only pursue research that stirs passions, engages intellectual interest, and impacts the real world. He has pushed me to be ambitious in my aspirations as an engaged scholar, while also gently shepherding me through moments of self-doubt and stress. His friendship has been a great gift of these past few years.

Susan set the tone of our relationship in her qualitative methods class, which was the most challenging and work-intensive and transformational course I took at MIT. From the first month of that course through the completion of my dissertation, she has relentlessly and constructively critiqued my thinking and writing – line by line, memo by memo, chapter by chapter. At times we have found ourselves at odds, when my activist (what she has sometimes called my "guru") sensibility bumps up against her critical, deconstructivist tendencies. Yet it was only in the closing

months of my time as a student that I came to understand that Susan, too, is an activist. She is profoundly committed to good social science – research processes that make visible and transparent the way we come to know the social world, and that make knowledge open to contribution and critique by anyone with the proper methodological tools. When such knowledge underpins management and policy for our society, that openness means democracy. Only through a sincere and lasting commitment to transparency and rigor in our methodology, and a profound humility about the claims we make, can we call ourselves responsible scholars and citizens. I can only hope that my research, now and in the future, does justice to these principles.

Along with these stalwart advocates and role models for my work, there have been a few other key supporters and critics who have brought this dissertation many miles forward. Whatever remaining distance it has not covered is exclusively my fault.

All social scientists owe a great debt to the people they study. The Cambridge Energy Alliance and its network of partners have been extraordinarily generous in opening their doors, reflections, and file cabinets to my observation and analysis. They never imposed their right to redact confidential information, choosing instead to see my research as a vehicle to share the lessons of their experience with the wider world. Without the thoughtful participation of Rob Pratt, Paul Gromer, Josh Hassol, Deborah Donovan, Lilah Glick, Garrett Anderson, Jerrad Pierce, Steve Morgan, Dave Dayton, Ian Fischer, Dave Carey, Steve Weisman, Susanne Rasmussen, John Bolduc, Rosalie Anders, and the Board of Directors, this research simply would not have been possible.

Rebecca Henderson generously provided funding through research assistantships, as well as a great deal of guidance and support through the process, for which I will always be grateful. I also received generous grants from the Switzer Foundation and Martin Family Fellows for Sustainability.

My sincere thanks to the members of the Sloan Sustainability Research Group (SSRG): John Sterman, Rebecca Henderson, Sarah Slaughter, Rick Locke, Wanda Orlikowski, Peter Senge, Otto Scharmer, Charlie Fine, Randy Kirchain, Rich Roth, Edgar Blanco, Elsa Olivetti, Chris Lyddy, Hiram Samel, Joe Hsueh, Sinead O'Flanagan, Maja Tampe, Ellen Czaika, and those who were present for my earliest presentations about the Cambridge Energy Alliance. SSRG, as a community of people sharing my passion for sustainability, sustained me through the difficult work of entering the field and focusing my research.

I owe a tremendous debt to my Behavioral and Policy Sciences colleagues on the 5th floor of E52 (soon to be the much greener E62). Kate Parrot and Joelle Evans in

particular helped me bear down and articulate some early ideas after my main bout of fieldwork. I subsequently enjoyed the tremendous generosity of the members of the Economic Sociology Working Group: Roberto Fernandez, Ezra Zuckerman, Kate Kellogg, Jason Davis, Ryan Hammond, Joelle Evans, Cat Turco, Enying Zheng, Elena Obukhova, Hiram Samel, Michael Bikard, Oliver Hahl, Roman Galperin, and others I might unwittingly omit. I subjected ESWG to long, meandering drafts of papers and chapters, and in return got invaluable feedback about naïve priors, omitted citations, unclear audience, poor research design, and other pitfalls of throwing myself into the field without sufficient preparation and design. This dissertation simply would not be what it is without those trials by fire. In the period where I would have reciprocated by commenting on others' papers, I was in the self-enforced solitude of dissertation writing and early fatherhood. I hope to pay that debt in the coming years.

I owe a special debt to Lotte Bailyn, whose doctoral seminar taught me how to conduct such developmental presentations in the first place, and who gave valuable comments on my dissertation proposal. She continues to be a uniquely valuable resource at MIT – a "meta-advisor," someone who both advises our faculty advisors, and advises us students on how to work with our advisors. In her seminar, I benefited from the guidance of other peers and senior colleagues, particularly Melissa Mazmanian, Ruthanne Huising, John-Paul Ferguson, and John Lyneis.

Larry Susskind and Harvey Michaels from MIT's Department of Urban Studies and Planning broadened my perspective on cross-sectoral collaboration and the challenge of energy efficiency, respectively. They are themselves institutional entrepreneurs, defining vibrant fields of research and practice through their own work and that of their students.

I brought a version of this dissertation in paper form to the Ivey Ph.D. Sustainability Academy at the University of Western Ontario. My sincere thanks to Jim Walsh, Saras Sarasvathy, Oana Branzei, Johanna Mair, and my fellow doctoral students in the Ivey Academy, which continues to be a vibrant community of sustainability scholars. Jim Walsh in particular shared with us his template for great discussion/conclusion sections, upon which I have based the structure of Chapter 5.

My dissertation proposal also enjoyed valuable feedback at the Academy of Management conferences: doctoral consortia in the OMT and ONE divisions in 2008, and in the OMT division in 2009 where I got tough but valuable feedback from Dennis Gioia. The AOM Professional Development Workshop on cross-sector collaboration that David Graham Hyatt pioneered in 2009 was incredibly validating and inspiring, particularly as I fretted about finding an audience for research in this

domain. I immediately signed up as a co-facilitator for 2010 and hope it becomes a ritual and an ongoing network of colleagues and coauthors.

My office mates – Yanbo Wang, Jason Greenberg, Ashley Brown, and my furry home office mate Spock – were a steady presence through the process, ever tolerant of my frenetic coming and going between academic and activist work. The administrative staff in BPS – particularly Loretta Caira, Keira Horowitz, Laura Gay, and Pam Liu – formed a steady and seamless network of support for my many endeavors.

Increasingly, I am coming to understand my role as a teacher as a powerful synthesis between academic and activist. Research will always be for me a kind of "meta-teaching" – developing insights that my colleagues can use in the classroom, as we open our students' minds to the challenges they will face in a changing world. I have a profound sense of gratitude to Peter Senge, Wanda Orlikowski, Sinead O'Flanagan, and Jimmy Leppert for their guidance and friendship as we taught the L-Lab: Leading Sustainable Systems course. This course continues to inspire me to pursue a career of teaching and a lifetime of mastery.

I remain deeply indebted to my fellow campus sustainability activists for their support in all realms: John Sterman, Steve Lanou, Peter Cooper, Sherwin Greenblatt, Ariel Esposito, and Vrajesh Modi from the "Walk the Talk" task force; Amanda Graham, Beth Conlin, and Jennifer DiMase from the MIT Energy Initiative; and student leaders Chris Kempes, Carrie Brown, Adam Siegel, Kendra Johnson, Jialan Wang, Dan Enderton, Lara Pierpoint, Kathreen Thome, Chris Sequeira, and countless others. Elsa Olivetti gets a special mention as my co-founder of the Generator, conspiratorial burrito sharer, taskmaster, and dearest friend to come out of my Ph.D. years.

I know my parents, my older brothers Dan and Steve, and their families are proud to have a Dr. Jay. I hope they all know how much their love and laughter and support have meant to me over the years. To my nephew Nick, who shares my dream of a more sustainable world, I hope we continue to inspire each other as our careers unfold. My Bengali family – Ma and Baba, and everyone sending their prayers from Bhiringi Kalibari – have fed my belly and my soul and none of my work in the last few years would have been possible without them.

Saving the best for last, my deepest gratitude and love go to my wife Alaka and our baby boy Vikram. I would never have attempted, been accepted to, survived, or completed doctoral studies if not for her steady support and guidance. Although in the past few months I have joked that my dissertation was a birthing process simultaneous with hers, it will never be a question of who had the harder job or the more beautiful result.

Chapter 1 – Hybrid organizations, theory and review

Hybrid organizations

For several decades scholars and practitioners have sought novel strategies and organizational models for addressing big, complex problems: science and technological innovation; poverty alleviation; public health; education; ecosystem management; and environmental sustainability among others. One result of this search has been the formation of hybrid organizations and networks that draw from multiple institutional logics, particularly when problems seem to dwarf any one institution's capability. We see logics of the market and academic science coming together to accelerate medical discovery in biotechnology firms (Murray 2006); logics of market and domesticity combining to promote public health and wellness in parenting education firms (Turco 2010); and logics of market and charity combining to approach poverty alleviation through microfinance institutions (Canales 2008; Battilana and Dorado 2010), to name just a few examples. In this dissertation I focus on "cross-sectoral" or public-private hybrid organizations that combine logics of the bureaucratic state, the marketplace, and democratic civil society (Cooney 2006; Friedland and Alford 1991; Thornton and Ocasio 2008) to tackle the complex challenge of climate change.

The founders of hybrid organizations are entrepreneurs in the traditional sense of creating new enterprises, but they are also institutional entrepreneurs (Powell and DiMaggio 1991; Maguire, Hardy, and Lawrence 2004; Battilana, Leca, and Boxenbaum 2009; Lawrence and Suddaby 2006). They cross the boundaries between spheres of social life, seeking the best of multiple worlds in achieving their mission. Ultimately, if they are successful, they may redefine the way business is done (as, for example, biotechnology firms have reshaped the pharmaceutical industry).

There are, however, unintended consequences of crossing institutional lines. Participating in multiple organizational fields can exert conflicting demands on an organization as it seeks to conform to diverse norms and expectations (D'Aunno, Sutton, and Price 1991; Kraatz and Block 2008). Amid such tensions, in the absence of "ready to wear" organizational models (Battilana and Dorado 2010), hybrid organizations may be challenged to define, enact, and sustain effective ways of operating. They may fall prey to internal conflict and confusion (Ashforth, Reingen, and Ward 2009) or the isomorphic pull toward the status quo (DiMaggio and Powell 1983).

This dissertation explores two questions about organizations that inhabit these hybrid territories. First, under what conditions is hybridity an asset and when is it a liability for organizational effectiveness? Second, how do hybrid organizations change over time in ways that might dissipate or strengthen their capabilities? In this dissertation I argue that sustaining effective, innovative hybrid organizations requires internal and external stakeholders to navigate *paradoxes of hybrid organizing*: contradictory effects of hybridity that challenge coherent sensemaking and effective action. Absent a degree of reflection about the paradoxes and strategies to work around and through them, hybrid organizations can fall prey to inaction or oscillation among simplified patterns of action, and therefore reduction in organizational complexity and effectiveness. I elaborate these paradoxes through extant literature on hybrid actors and organizations, and through my two-year ethnographic field study of the Cambridge Energy Alliance and its network of exchange partners.

Public-private hybrid organizations

We can examine questions about hybrid organizing amid the lively and urgent attempts to provide public goods, such as environmental protection, in a market economy. Such attempts occur at the interface between three institutional logics of the state, the market, and civil society. In the United States, these logics are instantiated in the ideal-type organizational forms of government bureaucracy, business firm, and non-profit organization (Cooney 2006; Friedland and Alford 1991; Thornton and Ocasio 2008).

These logics are described in Table 1 below, to give a clear point of reference. I build upon Thornton and Ocasio's definition of institutional logics as "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality." (1999:804). In describing particular logics, it is useful to borrow from Ewick and Silbey (1998, 2002), whose tabular display about legal institutions uses concepts from Giddens' (1984) theory of structuration: normativity, agency, constraint, time, and space.[1] My description of government, business, and non-profit institutional logics draws from a variety of scholars who have examined the relationship between the three territories (Friedland and Alford 1991; Waddell 2005; Bryson, Crosby, and Stone

[1] See Chapter 4 for a version of this table that is grounded in the empirical context of the Cambridge Energy Alliance. There I include the specific actors and artifacts most relevant to these institutional dimensions.

2006; Cooney 2006; Googins and Rochlin 2000), as well as my own experience studying collaboration across institutional lines (Jay et al. 2008; Jay, Wokutch, and Zeitzmann 2009; Jay 2009).

Table 1 - Institutional logics of the state/government, market/business, and civil society/non-profit

Institutional logic	State	Market	Civil Society
Ideal type organization	**Government bureaucracy**	**Business firm**	**Non-profit organization**
Normativity/ strategic imperatives	Policy implementation, serving constituents, accountability	Revenue, profit, client service, value creation	Mission, public service, solidarity, selflessness
Source of agency/ capacity to act	Coordination of public resources, rule making, enforcement power	Salesmanship, innovative service delivery	Collective action framing, education
Constraint/ structure	Law, procurement rules, transparency to public	Rules of the game, scarce client attention and resources, brokerage position, fiduciary responsibility to financiers	Normative expectations of stakeholders
Time	Budget cycles, election cycles	Sales cycles, quarterly reporting	Campaign momentum, tipping points, grant funding cycles
Space	Public meetings/hearings	Client interactions, offices, business meetings	Neighborhoods, events, intimacy

For entrepreneurs, architects, managers, and stakeholders of organizations, the three logics in Table 1 serve as a kind of cultural toolkit (Swidler 1986) – a collection of diverse schemas and resources from which an organization can draw. Their product is a more concrete *organizational logic* that draws on elements of the abstract institutional logics. Normative imperatives coalesce into organizational strategy and identity. Sources of agency become people in organizational roles. Structural constraints become exchange partners. Structures of time, space, and artifacts come together in everyday practice. Past scholars have conceived of organizational logic in a variety of ways – as a legitimating principle (Biggart 1991), a bundle of practices (MacDuffie 1995), or the combination of governance, strategy, and workflow (Spicer 2006). I understand organizational logic as the interconnections among organizational identity (how organizational members understand and talk about the organization), strategy (the selection and binding

together of ends and means), and practice (what people do on a day to day basis, including division of labor among actors with diverse backgrounds).

The emergence of public-private or "cross-sectoral" hybrid organizations – whose organizational logic combines the institutional logics above – follows more than a century of alternative strategies. Within the United States we can observe, in general, a pendulum swinging first from a longstanding commitment to private economic action from 1700s to the early 1900s, to increasing trust in public institutions from the 1930s to 70's, and then a returning swing back to trust in private action through markets in the 1980's and 90's. With each swing occupying a shorter span, the early 21st century brought a reinvigorated commitment to a "third sector" of non-governmental organizations, and then the present moment of recombination and experimentation with hybrid organizations and cross-sectoral collaborations of various kinds at the middle of the pendulum's arc. On that pendulum have ridden debates and proposed solutions to a wide range of public/private problems.

The result has been a variety of different organizational practices and forms that integrate aspects of the market, state, and civil society. These include corporate social responsibility (Vogel 2005), social entrepreneurship (Bornstein 2007; Mair and Marti 2006), public-private partnerships (Savas 2000), and collaborations across public, private, and non-profit civil society associations (Bendell 2000; Bryson et al. 2006; Googins and Rochlin 2000; Laws et al. 2001; Selsky and Parker 2005; Waddell 2005; Waddock 1991). Blending schemas and resources from multiple institutions, each of these strategies practices a form of hybrid organization, coordinating and integrating both collective, public resources and individual, private resources (Boyd et al. 2008; Brandsen, Van de Donk, and Putters 2005; Cooney 2006; Johnston 2008; Battilana and Dorado 2010). They therefore provide a rich context for the study of organizations in conditions of institutional pluralism (Kraatz and Block 2008).

What does extant theory and research have to say about the outcomes of this experimentation? In fact, it is possible to draw insights about hybrid organizations from a variety of literatures. This is because the combination of institutional logics – abstract patterns discernible in social life – can occur at multiple levels of analysis. Individuals can participate in multiple social networks (Padgett and Ansell 1993); organizations can participate in multiple fields (D'Aunno et al. 1991; Kraatz and Block 2008); and even diffuse institutions like the law can be composed of multiple simultaneous logics or regimes of justification (Boltanski and Thévenot 2006; Ewick and Silbey 2002). Hybridity and multiplicity are cross-level phenomena; their influence on effectiveness and change can be seen at all three levels.

Hybridity and effectiveness - Robustness vs. clarity

In approaching the question of hybridity and effectiveness, it is possible to discern two competing perspectives across these diverse literatures. On one hand, hybridity can be seen as an asset because it creates *robustness*: the ability to establish legitimacy among diverse constituencies through multiple narratives and identities; and the resulting ability to both *accumulate resources* and *resist challenges* from those constituencies.

For an individual-level example of this robust action (and the study from which I borrow the term), we can look to Padgett and Ansell's (1993) explanation of the Medici family's rise in Renaissance Florence. These authors point to Cosimo de Medici's "multivocal, sphinx-like identity," which allowed him to participate in the separate networks of business and nobility (the former through trade and the latter through marriage). This hybrid strategy granted him access to both financial and cultural capital, resources that he utilized in crafting the dominant political party.

David Stark (1996) took this idea of robust action to the organizational level in studying post-socialist firms in Hungary. He found that the most effective firms employed hybrid strategies that simultaneously participated in state-driven socialist commerce and emerging capitalist commerce. Again, a hybrid identity enables accumulation of diverse resources.

At the macro-institutional level, Ewick and Silbey (Ewick and Silbey 2002, 1998) suggest that robustness of legal and other institutions comes from the multiplicity of narratives and logics at play in their enactment. Law in everyday life is constituted through both a sacred narrative of objective, impartial justice serving the common good, and a profane narrative of law as a game played in pursuit of private interests. As a result of sustaining these dual narratives, legal institutions are much more robust to critique and challenge by their constituencies.

Within the domain of public-private hybrid organizations, we see a set of celebratory arguments that resonate with this idea of robustness. Some scholars and practitioners have lauded the trend of creatively melding elements from business, government, and civil society organizations (Austin, Hesselbein, and Whitehead 2000; Sagawa and Segal 2000; Senge et al. 2008; Waddell 2005; Alvord, Brown, and Letts 2004). Their underlying logic is what Bryson, Crosby, and Stone (2006) call "sector failure" – the inability of any one sector or institution of society to solve complex problems on their own. The promise of hybridity is that resources and capabilities from multiple sectors will be brought into play to enhance the effectiveness of joint effort. Such resources include: government agencies' taxpayer-funded budgets, and convening and rule enforcement capability; businesses' capital

and ability to efficiently deliver products and services; and non-profit associations' member base that can provide volunteer labor and social networks for peer marketing, education, and campaign participation.

Other proponents of public-private hybridity simply suggest that it offers a more effective way to achieve each *individual* sector's goals. Savas (2000) argues for public-private partnerships because contracting and co-production with the private sector allows government agencies to access the latter's higher quality human resources and organizational capabilities. The result might be more robust achievement of public policy goals. A variety of scholars have conversely examined the financial return to corporate social and environmental responsibility (CSR). They suggest that CSR efforts expand access to resources from socially-minded customers, employees, and investors, while reducing the risk of activists' challenging corporate legitimacy (Ambec and Lanoie 2008). Thus by bringing on elements of a public-service mission, and/or partnering with government and non-profit agencies, corporations can become more robust profit-seeking entities.

The countervailing argument is that hybridity and multiplicity reduces effectiveness for strategic actors. Here the fundamental logic is one of *confusion*. Multiplicity of actors, resources, narratives, identities, and goals creates two problems: internal confusion that undermines effective coordination; and external confusion that undermines effective exchange.

Contingency theory in organization studies tends to focus on internal problems of alignment and clarity. Scholars suggest that organizational differentiation and focus is necessary because it is hard for people to pursue multiple goals simultaneously in the same organizational unit (Galbraith 1974; Lawrence and Lorsch 1967a). Ethiraj and Levithal (2009) show how multiplicity of goals in an organization leads to confusion and low performance, as actors struggle to allocate attention and resources. Mitigating the problem requires splitting the goals spatially (across different organizational units) or temporally (across different epochs of the organization).

Within the public-private domain, scholars have noted this internal clarity/confusion problem. Economist Milton Friedman (1970) has famously argued against the idea of corporate social responsibility, emphasizing that to ask corporations to serve both societal and financial stakeholders is to doom them to fail at both. In the domain of cross-sectoral partnerships, Bryson, Crosby, and Stone (2006) suggest that the multiplicity of institutional logics at play in such partnerships make it hard to agree on ends and means, making initiatives less effective. We might therefore hypothesize that conflicts or confusion in cross-

sectoral hybrid organizations can undermine accomplishment of their mission, which some scholars have found (Battilana and Dorado 2010; Ashforth et al. 2009). One question is whether the differentiation-integration idea from contingency theory holds true in public-private hybrid organizations. If hybrid organizations generate internal structural divisions pursuing public and private goals separately, or temporally rotate between public and private goals, do they experience a greater degree of success at both?

The second aspect of this confusion argument focuses externally on the problem of categorization and social exchange. Particularly in mediated markets that depend on rating agencies, critics, and other information brokers, hybrid individuals and organizations that defy easy categorization may face what Zuckerman (1999b) calls an illegitimacy discount. Potential exchange partners find hybridity confusing and performance difficult to compare with more readily definable types, exclude them from consideration, and thus constrain their access to resources. New organizational forms that combine business models and institutional logics, such as biotechnology companies involved in both basic and commercial science, must carefully establish their legitimacy as a known type before they can be accepted in the market (Rao and Singh 2001) and become institutions in their own right (Kraatz and Block 2008).

This external confusion problem has not been sufficiently explored in the context of public-private hybrid organizations. Should we expect an "illegitimacy discount" as a result of crossing institutional lines? This question is explored at greater depth below and in Chapter 3 of this dissertation.

We have, then, two contradictory arguments about the effectiveness of hybrid organizations. Hybridity is *both* an asset *and* a liability for effectiveness, creating the possibility of robust action but also internal and external confusion. On the one hand, enacting multiple identities may help hybrid organizations resist challenges and secure resources from multiple fields. On the other hand, the more complicated the organizational identity, the more difficult it is for actors in those fields to categorize the hybrid organization and allocate resources to it, and the more difficult it is for internal actors to coordinate resources and goals. As we will see in the section that follows, a similar contradiction exists in perspectives about hybridity and its role in organizational and institutional change. These contradictions are the foundation of the "paradoxes of hybrid organizing" that I elaborate in this dissertation.

Hybridity, complexity, and change

How do hybrid organizations change over time? Again, looking across individual, organizational, and institutional levels of analysis, a contradiction is discernible: hybrid organizations can *simplify* over time as a single logic comes to dominate; or they can *complexify* over time as they develop innovative practices and structures in the space between institutional logics.

The simplification argument is that when two logics collide or try to combine, one wins. The dominating logic is the one connected to actors and resources upon whom hybrid organizations see themselves as being more dependent. In the last several decades, the trend has been for the power of business actors, and financial actors within the business field, to impose the market logic over institutional logics of professions, civil society, and the state.

At the micro-level, this simplification can occur through power struggles among partners in hybrid alliance. For example Layzer (2008) shows how collaborative environmental governance initiatives – bringing together private real estate developers, government agencies, and community and environmental groups – are less effective than traditional command and control regulation at protecting natural resources. The reason is that in governance processes dependent on their participation and consensus, real estate developers can use their willing participation as a bargaining chip and thus steer decision making to suit their interests. The result is a cross-sectoral "collaboration" that comes to sustain the very logic of development it sought to counterbalance with a logic of environmental protection. Similarly, Miraftab (2004) shows how a partnership to provide low-income housing in South Africa provided resources and legitimacy to property owners without meeting its public goals. These studies align with others who have found that failures of cross-sectoral partnerships relate to power imbalances (Ellersiek and Kenis 2008), or unclear contracts and governance (Bloomfield 2006) that allow particular interests to dominate when the partnership is dependent on their participation and resources.

The results of these micro-level power dynamics can be amplified when they combine with imitation, diffusion, and isomorphism at the institutional level. We see this pattern in a number of studies of institutional change. Thornton and Ocasio (1999) show how the need and opportunity for investment capital in the 1960's among rapidly growing publishing houses led to a wave of acquisitions, investment banking, and public offerings among formerly founder-owned firms. These activities created dependence on financial stakeholders, whose market logic combined with – but then supplanted – the publishers' professional editorial logic.

Firms developed an industry-wide norm of promoting CEO's for profits rather than editors for professional reputation and prestige. Fligstein (1987) documents a parallel trend in which 1951 anti-trust legislation led business leaders to form multi-divisional corporations that crossed product lines. This new form was more dependent on financial expertise (people who could analyze business units as investment objects) than on manufacturing or marketing expertise tied to specific products. As a result, corporations began promoting CEO's with financial backgrounds over managers from these other subfields. The new financial CEOs contributed to the spread of a dominant financial logic (and associated focus on short-run profits) among American corporations (Fligstein 1993). Khurana (2007) similarly describes the domination of financial and market logics in management education amid competition for lucrative MBA tuitions; the result is MBA students' being seen as consumers of a product rather than students being initiated into "higher aims" of manager professionalism. Ruef (1999) discusses how neoliberal policy reforms in the U.S. health care sector increased the power of insurance companies and health management organizations. The result was increasing pervasiveness of market logics in the health care field over a logic of accessibility that had also been active in the era of the welfare state. Finally, Shamir (2008) and Silbey (2009) discuss market and regulatory logics coming together in private forms of governance to manage the risks of complex technologies (e.g., ensuring occupational safety by promoting "safety culture"). They argue that these trends displace responsibility onto low-level actors, protecting corporate shareholders from liability. Their effect is to ultimately undermine the regulatory power of the state in favor of market institutions.

These cases all illustrate that while isomorphism may exert its pull in any organizational field (DiMaggio and Powell 1983), particularly in the late 20th century such pulls were particularly strong toward the institutional logic and ideology of the market, which is connected with increasingly powerful business and financial interests.

Some scholars draw on these ideas in taking a critical stance toward public-private hybrid organizations. They question the assumption that market-based institutions can solve problems that they have themselves created (May, Cheney, and Roper 2007; Shamir 2008). They suggest that hybrid organizations are rooted in neoliberal ideology and narrowly economic globalization, reflecting – and perpetuating – an erosion of trust in the state, civic democracy, and the professions. The rhetoric of public-private partnerships represents gradual privatization in disguise (Van Slyke 2003).

These examples and perspectives suggest provocative empirical questions. Do hybrid organizations that start with multiple institutional logics in play always tend to drift toward one logic? If so, is this drift necessarily toward a private sector, market logic? How are such changes affected by shifts in the broader institutional context? How are changes affected by internal negotiations about the coordination of organizational means and ends? How do shifts toward one logic – simplifying hybridity – affect an organization's capability to solve complex problems that motivated their hybridity in the first place?

The opposite end of this spectrum is not that the market loses; this would mean only that a different singular logic succeeded. Rather, the opposite of simplification is where hybridity yields increasing complexity, novelty, and innovation. Sewell (1992) hints at the basic reason for this complexification: the overlap of multiple social structures creates a space of agency and change. Hybrid individuals and organizations poised in that overlap have a choice between different ways of seeing the world. They can step out of the constraints of any one social structure, and innovatively recombine knowledge and practices from all of them.

Studies of institutional entrepreneurship illustrate this idea at the individual level. Maguire, Hardy, and Lawrence (2004) explain how a novel set of practices and organizations emerged in Canada that accelerated clinical trials for AIDS medications. In this case, two individuals inhabited hybrid "subject positions" (Maguire et al. 2004; Bourdieu and Wacquant 1992) in both the AIDS patients' activist community and the medical establishment, and gained knowledge and relationships in both domains. As a result they were able to create a new set of rules and practices that bridged the two worlds. Canales (2008) similarly explores how the Mexican banking sector began lending to small-medium enterprises, enhancing the diversity of their customer base and offerings. He demonstrates that middle management bankers with personal roots in small enterprises combined their tacit knowledge, personal connections, and motivation from both domains to become institutional entrepreneurs on behalf of this new line of business.

At the organizational level, Stark (2009) compares several contexts of multiplicity and dissonance such as Hungarian factories during the post-socialist transition, and creative agencies during the dotcom boom. He argues that these organizations are characterized by heterarchy, the overlap of multiple orders of worth (Boltanski and Thévenot 2006) and network structures (Vedres and Stark 2010). In the friction between these diverse forms of tacit knowledge and diverse logics of justification, new knowledge and practices and logics arise through innovation, adding further complexity and richness to organizations and organizational fields.

Presenting a rich example of such complexification at the organizational field level, Fiona Murray (2006) examines the rise of patenting in the life sciences – a cross-over point between academic and market-driven institutions. Murray argues that patenting has not simply caused market logics to dominate scientific practice or crowd out the academic logic of freely sharing research, as many had feared. Rather, the adoption of patenting by scientists transformed both domains and generated new forms of exchange. Adding scientists to a patent became yet another way to assign credit and build professional prestige. Some scientists also took a stand on behalf of the traditional academic logic, for example retaining ownership of patents to ensure the technology remained in the public domain. As a result, the complexity of the life sciences field is being maintained and in fact enhanced through these new practices. Patents are offering a new way to produce both private benefit (to innovators and patients) and public benefit (to common knowledge and public health).

This stream of literature would suggest that public-private hybrid organizations – such as the one explored in this dissertation – might similarly serve as an incubator for new practices and innovative solutions to complex problems. This idea underpins some of the celebratory arguments for such organizations cited earlier (e.g., Senge et al. 2008; Laws et al. 2001). But what might that innovation process look like and what are its outcomes?

Again, these streams of literature suggest contradictory processes at play. If we observe hybrid organizations over time, we may see their hybridity leading to both simplification and complexification of practices, organizations, and organizational fields. When logics combine, one can dominate, particularly when it is connected to powerful actors on whose resources the organization depends. Alternatively, hybrid organizations can hold the tension between logics, combine knowledge and practices from multiple domains, and generate more complex, innovative practices over time.

Research approach: Paradox as lens, conditions and processes

In approaching questions about hybrid organizations' effectiveness and processes of change, I have identified two contradictions in the literature and apparent empirical reality: hybridity is *both* an asset *and* a liability for organizational effectiveness (generating both robustness and confusion); and hybridity leads to *both* simplification *and* complexification of organizations and organizational fields.

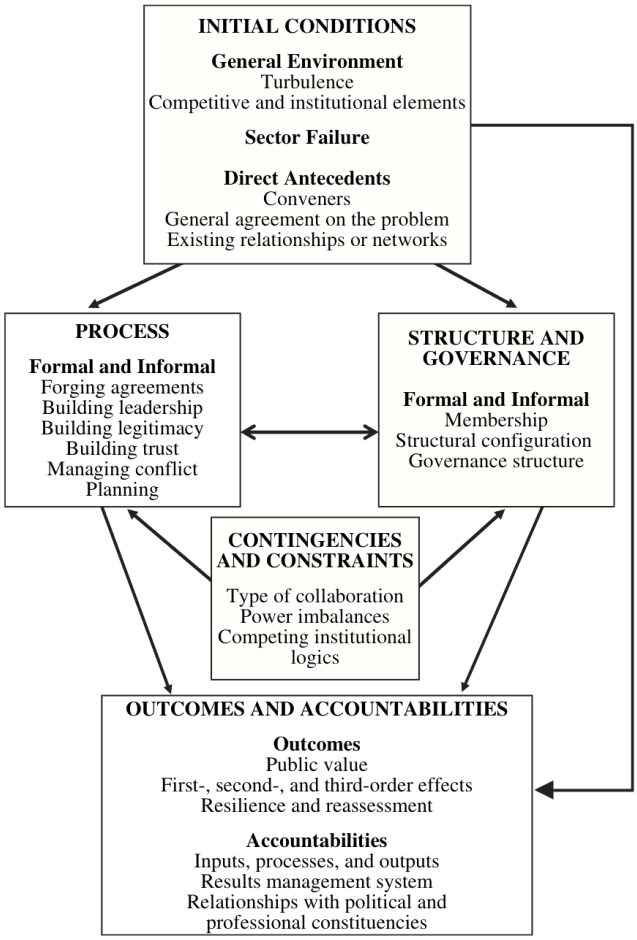
How to clarify these contradictions through further research? In general, there are two ways to approach such contradictions. The first is to see them as theoretical paradoxes to be resolved through further research and theorizing (Poole and Van de

Ven 1989). This can be done by asking, "under what conditions" are hybrid organizations robust vs. confusing, and under what conditions do they lead to simplification vs. complexification? The second approach is to view the contradictions as paradoxes experienced in practice by the actors themselves (Lewis 2000; Smith and Berg 1987; Quinn and Cameron 1988). Doing so means asking "through what processes" do actors navigate the contradictory pulls toward robustness, confusion, simplicity, and complexity? I argue that combining these approaches is essential to a deeper understanding of hybrid organizing.

Some studies of public-private hybrid organizations have taken the former approach: they seek to explain the conditions under which such organizations are more and less effective and transformative. Often they take a position akin to that of contingency theory (Lawrence and Lorsch 1967b) in organization studies, implying that in certain contexts, if hybrid organizations follow "best practices" – or at least those that best fit the situation – they are more likely to be effective. In public-private partnerships, for example, scholars have focused on contract structure between government entities and private institutions, and advocate for carefully managed performance-based contracting that helps solve principal-agent problems (Bloomfield 2006; Martin 2005). When looking at hybrid enterprises like microfinance institutions, internal practices like selective hiring and socialization of members may be important in preventing conflict between individuals embodying divergent logics (Battilana and Dorado 2010).

The challenge, of course, is that "best practices" are elusive. Contexts are dynamic and complex, problems and situations defy regular categorization, contracts cannot anticipate all contingencies, and contingency theories sometimes offer conflicting advice. Bryson, Crosby, and Stone (2006), in their review of literature on cross-sectoral collaboration, move one step beyond a best practices approach and try to define the conditions shaping such hybrid partnerships in broader terms. The result is the framework depicted in Figure 1. It is worth noting that although these authors label the boxes "initial conditions," "process," "structure and governance," and "contingencies and constraints," these are all conditions in the sense I am using the word here. In their text Bryson, Crosby, and Stone offer one theoretical proposition for each of the conditions indicated in the framework based on past empirical work, for example suggesting that cross-sectoral partnerships are more likely to succeed when trust-building activities are continuous.

Figure 1 - A framework for understanding cross-sector collaborations.
[From Bryson, Crosby, and Stone (2006)]



This type of research and theorizing can go a long way toward clarifying contradictions like those I discussed above. A variety of social scientists have pointed out, however, that the contradictions and paradoxes of group and organizational life are not just labels existing in the mind of the scientist. Taking paradox as a lens (Lewis 2000) means acknowledging that the inhabitants of organizations are themselves reflective theoreticians of their social world (Garfinkel 1967), struggling to make sense amid the contradictions, double binds (Bateson 2000), and ambiguities that arise in everyday practice (Weick 1995).

Employing paradox as a lens in the study of hybrid organizations means actively exploring the way actors embedded in those organizations navigate paradoxes in practice. The result is research with a more process-oriented approach to research. Past studies conducted in this vein have drawn on ethnography and action research that engages directly with people's sensemaking and reflective practice (Schön 1983) as they go about governing hybrid organizations and cross-sectoral

partnerships (Huxham and Hibbert 2008; Huxham and Vangen 2005; Selsky and Parker 2005). In contrast to scholars who might try to offer best practices or define conditions of success, these process-oriented researchers suggest factors to attend to in practice, contradictory prescriptions to be balanced (Huxham and Beech 2003), or paradoxes to be navigated (Ospina and Saz-Carranza 2005) rather than universalist prescriptions to be followed.

The limitation of these process-oriented studies, however, is that they have had a predominately inward focus. They examine the micro level of hybrid organizations and partnerships, and have examined the dynamic, iterative process of goal alignment, small wins, and building trust among organizations in a partnership (Vangen and Huxham 2003). They assert that facilitative leaders within partnerships can increase the likelihood of success, in part by cultivating the virtuous circle of trust and partly by balancing power dynamics to allow more level collaboration (Senge et al. 2008; Huxham and Vangen 2000). They suggest that such leaders and organizations should cultivate a capacity to hold contradiction, duality, and paradox if they want to avoid losing their complexity or falling prey to unproductive conflict among members (Ashforth et al. 2009; Harter 2004; Ospina and Saz-Carranza 2005; Westley and Vredenburg 1996). For example, Huxham and Vangen (2005) explore a basic contradiction between dual prescriptions: to act "in the spirit of collaboration" through nurturing trust; and to engage in "collaborative thuggery" that pushes through impasses to get things done.

This internal focus can ignore important dynamics at the interface between hybrid organizations and the networks and institutions that surround them. The literatures cited earlier about robust action, illegitimacy discounts, and the domination of single institutional logics all suggest the importance of understanding exchange relationships and institutional influences. Such external dynamics may in fact help generate the internal processes that scholars have sought to explain, so that an external focus would be a strong complement to prior work.

New territory to explore

This paradox lens, and the institutional lens with which this chapter began, together provide this dissertation's distinctive view on hybrid organizations. First, I integrate the two approaches to paradox described in the previous section: I examine the theoretical contradictions embedded in the paradoxes of effectiveness and change and identify the conditions under which one or the other side may be manifest; and I look at paradoxes as experienced in practice, and the processes through which people navigate them. Bryson, Crosby, and Stone's framework does some of this integration. For example their section on trust building builds upon

Huxham and Vangen's work cited earlier. It is, however, incomplete and loses some of the richness of the process-oriented perspective. They do not address tensions that might arise in practice within elements of their framework (e.g., the tension between robustness and clarity in "building legitimacy"). Nor do they explore dynamic interactions among elements that could lead to organizational change (e.g., feedback between effects of action and the ongoing processes of "forging agreement" and "building leadership"). A deeper integration of conditions and processes as explanatory tools is needed in order to elaborate more of these interactions.

Second, I particularly focus on elaborating outward-facing processes – those involving hybrid organizations' and partnerships' interaction with others in their institutional fields. As described above, past research on cross-sectoral hybrid organizing has had a predominately internal focus. In the Bryson, Crosby, Stone framework above and in subsequent research, the emphasis has been on processes of forging agreement, building leadership, building trust, and managing conflict, particularly the tensions of conflict and collaboration between ideological camps within a hybrid organization (Ashforth et al. 2009; Cooney 2006; Kleinman 1996; Battilana and Dorado 2010) or between organizations in a hybrid network. They have tended to ignore the interface between the organization or partnership and its outside exchange partners. This dissertation places hybrid organizations in a relational context, a perspective enriched by the institutional lens.

The result is a set of core research questions in Table 2 below, which I map to the contradictions described earlier. Within each contradiction, I ask about both the conditions under which different outcomes occur and the way contradictory dynamics are experienced in practice.

Table 2 – Research questions

Outcome of hybrid organizing	Mechanisms	Questions about hybrid organizations
Increased effectiveness	Robust action and multiple legitimation	Under what conditions are hybrid organizations effective in internal coordination and external exchange? How are the contradictory robustness and confusion effects experienced and navigated in practice?
Decreased effectiveness	Internal and external confusion and illegitimacy	
Increasing complexity over time	Innovative recombination	How do hybrid organizations change over time? Under what conditions do they resist the domination of a single logic and instead innovate in the space between logics? How do these processes of simplification and complexification interact, and how are they experienced in practice?
Decreasing complexity over time	Domination of particular interests and logics	

Empirical context and structure of dissertation

To address these questions I present data from a two-year ethnographic field study of the Cambridge Energy Alliance (CEA) in its network of exchange partners. As I elaborate further in Chapter 2, CEA's quest for energy efficiency is a rich context for public-private hybrid organizing. Every household and business on the planet has at least some technical opportunity to improve its buildings, equipment, and practices so as to realize human aspirations with less fuel consumption. Such improvements can result in both a private benefit (in the form of financial and/or labor savings on fuel consumption) and a public benefit (in the form of pollution prevention and common-pool resource conservation). In this space, a variety of collaborations among business, government, and civil society organizations have occurred.

Organizations like CEA thus provide a window into important questions about hybrid organizing. This dissertation takes a close and deep look at CEA as a strategic site (Merton 1987) for addressing the broader questions posed earlier: what are the consequences (for effectiveness and organizational change) of integrating multiple institutional logics under the same organizational roof?

There are three reasons why this qualitative field study strategy is appropriate here. First, the theoretical territory of hybrid organizations is still in its early stages. The questions I pose are inductive, asking about the conditions and processes that shape organizational effectiveness and change. Prior scholarship on public-private hybrid organizations has not employed an externally-focused perspective of situating hybrid organizations in a field of exchange partners. Thus, an inductive, theory-building strategy from qualitative data is appropriate (Edmondson and McManus 2007), to elucidate for example the dynamic relationships between internal processes (e.g., negotiation over organizational goals) and external processes (e.g., legitimation). Second, given my emphasis on processes of legitimation, change, and innovation, it is necessary to follow the organization in detail over a period of time in order to observe those processes unfolding and provide a window into how they work. Third, an embedded case design that includes within-case variation (examining CEA's interaction with multiple exchange partners) permits a look at varying conditions of successful exchange while keeping a close look at internal processes. With each exchange partner, CEA goes through a process of strategizing, exchange, and sensemaking. Each process thus becomes a valuable unit of analysis, allowing me to integrate conditions and processes as explanatory tools in ways not done in prior research. Further motivation for the specific choice of CEA as a case and the methods I employ are discussed in chapter 2, along with a basic overview of CEA's mission, organizational structure, practices, outcomes and evolution.

Chapter 3 begins to develop an explanation of the CEA case, and what we can learn from it. It uses a comparison of CEA's different exchange relationships to shed light on the first set of questions in Table 2. Under what conditions are hybrid organizations effective in internal coordination and external exchange? How are the contradictory robustness and confusion effects experienced and navigated in practice? I find that the conditions of successful exchange are those that allow CEA to navigate the *paradox of hybrid legitimacy,* a label I place on the tension between robustness and clarity as experienced in practice. Hybridity expands access to a broader range of exchange relationships, but undermines exchange partners' willingness to commit resources to an organization that defies conventional schemas and familiar types. Where CEA has operated without awareness of the paradox or strategies for navigating it, the organization has fallen prey to inaction, or to oscillation between modes of self-presentation that compound exchange partners' confusion about the organization. In some cases, however, CEA navigates this paradox by finding alternative pathways to legitimacy in their relationships with exchange partners: offering options for exchange that fit with conventional schemas; working with others who are already accustomed to the hybridity; or

using interpersonal trust within structural and friendship ties as a scaffold for organizational legitimacy.

Chapter 4 explores the second set of questions in Table 2. How do hybrid organizations change over time? Under what conditions do they resist the domination of a single logic and instead innovate in the space between logics? How do these processes of simplification and complexification interact, and how are they experienced in practice? To address these questions I first delineate three phases of change in CEA, through which it changed its organizational logic of client-service business to one of being a public-service non-profit, and then to a more complex way of operating. I identify three contributing processes to explain these changes: CEA learns from its experiences of success and failure in key exchanges; CEA adapts to changes in the institutional context; and CEA reframes its identity amid the ambiguity of "successful failures." This third process in particular illustrates a distinctive tension in public-private hybrid organizations, one that simultaneously pulls such organizations toward a simplified logic and creates a space for innovation. I label this tension *the catalyst's paradox*: public and private service logics have different definitions of success that conflict when the organization catalyzes but does not capitalize on exchanges that forward its mission. These conflicts generate internal confusion, and a pull for the organization to operate more like a traditional non-profit organization. When, instead, the organization develops the capacity to hold the paradox through reflective thinking and behavioral complexity, it can generate new lines of activity and exchange: those that serve the parts and whole of its constituency simultaneously, and therefore the combined private and public mission. Such efforts may be constrained, however, to institutional contexts offering a blend of resources that reward doing so.

In Chapter 5, I synthesize insights from these empirical chapters and offer some conclusions. Hybrid organizations emerge when institutional entrepreneurs combine logics from multiple sectors of society, in a search for solutions to complex problems. The central insight of this dissertation is that to realize and sustain effective, innovative hybrid organizations, such actors must reflectively navigate the paradoxes of hybrid organizing described above. There are certain conditions that can enable their work, such as the availability of exchange partners accustomed to hybridity, personal networks through which trust can be a scaffold for legitimacy, and sources of financial support that enable serving the parts and whole of a constituency simultaneously. Nevertheless, navigating the paradoxes means an ongoing process of reflective practice to create and leverage these conditions, in tandem with exchange partners in the organizational field.

The results of this dissertation offer contributions to three audiences. The first is scholars and practitioners in the domain of public-private partnerships, cross-sectoral collaborations, social entrepreneurship, and other emerging forms of public-private hybrid organizing. The paradoxes I describe provide ways to understand these new organizational forms in a relational context and the challenges involved in leading them. The second is organizational scholars concerned with the relationship between institutional and organizational logics. I show the way institutional logics can be blended in organizational practice and change in their blend over time; I also articulate some conditions under which combining institutional logics leads to robustness over confusion, and innovative complexity over simplification. The third audience is an emerging community of scholars focused on the role of paradox in organizational life, for whom the inter-organizational nature of these paradoxes places them outside conventional spheres of inquiry. In Chapter 5 I review these theoretical implications. I then look counterfactually at organizations comparable to CEA to suggest future research into alternative strategies for hybrid organizing and institutional change.

Chapter 2 – Cambridge Energy Alliance, context and methods

Energy efficiency

For the purposes of studying hybrid organizations that meld public and private institutional logics, few domains are as well suited as energy efficiency. Dating back at least to Amory Lovins' seminal article about the "soft energy path" (Lovins 1976), energy efficiency and conservation have been heralded as a route toward both public and private good. By investing in energy efficiency (through improved vehicles, building design, insulation, electrical appliances, heating and cooling systems, and industrial equipment) home and business owners can save money on energy and maintenance costs, reaping private return on investment. In so doing they also reduce society's need for fuels such as coal, oil, natural gas, and nuclear materials whose supplies are limited and whose consumption creates a host of environmental and geopolitical problems.

Enthusiasm for energy efficiency (EE) among policy makers, business leaders, and the public has waxed and waned in the United States over the past three decades. Drivers of attention and investment have included the price of fossil fuels and the salience of issues such as fossil fuel scarcity, acid rain, and climate change (Granade et al. 2009). The achievements of energy efficiency investment are, however, consistent. Macroeconomic measures suggest an annual 2.8% reduction in energy intensity of the economy (measured in BTU per $ GDP) from 1973 to 2008 (USDOE-EIA 2010). This means that while the United States emitted 5.8 gigatons of energy-related CO2 equivalent greenhouse gases per year in 2008 (USDOE-EIA 2010), we would have been emitting 15.7 gigatons if our current economic output were operating at 1950's levels of efficiency.

The potential for energy efficiency to contribute to private and public good may be far greater than what has been achieved thus far, even through deployment of existing technology. Although debates exist between economists and engineers as to the magnitude of the potential, all concur that more is possible (Joskow and Marron 1992; Lovins 1994; Joskow 1994)[2]. A widely cited study by McKinsey and Company (Enkvist et al. 2007) prioritized investments in GHG mitigation strategies, and identified a range of energy efficiency measures as the most cost effective way to reduce emissions in the United States. While some mitigation strategies such as

[2] Whether efficiency alone can yield sustained net reductions in energy use is also a subject of debate, since home and business owners tend to increase their overall level of economic activity with the savings reaped from efficiency gains (the so-called "takeback effect").

carbon sequestration have a cost associated per ton of carbon dioxide equivalent (CO2e), energy efficiency yields a positive return on investment as well as an environmental benefit. The McKinsey authors estimate that as much as 1.3 gigatons/year of CO2e reductions (equivalent to 22% of current energy-related emissions) could be achieved with a positive financial return, even without public policies that put a price on pollution.

Market failures

Given the mix of public and private good involved, why do we not reach the technical potential for energy efficiency? Because the dominant discourse in literature on energy efficiency has been an economic one, the reasons for underinvestment in EE have often been labeled as market failures or barriers (Brown 2001; Howarth and Andersson 1993; Levine et al. 1995; Biggart and Lutzenhiser 2007; Granade et al. 2009). These are ways in which the market for energy efficient products and services tends to deviate from efficient market assumptions. They affect the ability of arms-length market transactions to provide energy services at optimal levels. Market barriers or failures include:

- Three kinds of information asymmetry:
    - Energy service providers, and often building owners themselves, do not know how their buildings are constructed, so that the specific opportunities for energy efficiency are uncertain. This information gap can require costly energy audits that do not save energy by themselves.
    - Building owners often do not know about the availability of products and services that could save them money, because the energy consumption profile of equipment is not inherently visible at the time of purchase. Further, energy efficiency is often a feature of the interaction between systems (e.g., double pane windows prevent heat escape and can allow downsizing of heating equipment) that is difficult to understand without expert knowledge.
    - Energy efficiency is costly to measure and verify after the fact because of the joint behavioral and technical factors leading to energy use patterns. This is a particular problem when buildings change hands, making owners uncertain whether their return on investment will be reaped through increased sale price.
- Access to capital. EE investment usually has an up-front cost (e.g., purchasing a new water heater) followed by a gradual return on investment from reduced energy bills. People and organizations may not have the available up-front capital for such investments, and may not have access to credit at sufficiently low transaction costs and interest rates.

- High transaction costs exist between energy service consumers and providers, particularly in the residential and small commercial sectors where EE opportunities are fragmented. EE retrofits can involve multiple contracts from the energy audit to the financing to the construction/implementation. The cost and hassle of these contracting episodes can overwhelm the benefit of EE investment.
- Positive externalities lead to underinvestment by individual actors even though EE investments would yield societal benefit. Such externalities include reduced environmental pollution (including GHG emissions) and the avoided cost of foreign wars and diplomacy to secure energy supply.
- Agency problems in landlord-tenant contracts. Most formal leases have one actor paying for electricity and fuel while another actor is responsible for upgrades to the central building systems. This creates a split incentive in which neither party reaps the full financial benefit of EE investment.

In addition to these "market failures," in which arms-length market transactions fail to produce energy efficiency investment, there are also barriers inside organizations and even households. These include:

- Internal agency problems, in which organizational silos separate the payment of energy bills from the investment in facilities upgrades.
- General scarcity of attention for projects with long-term benefits, amid focus on short term "firefighting" (Repenning and Sterman 2001).
- Specific scarcity of attention to facilities issues not seen as core to the business, or seen as disruptive (Thompson 1967).
- Scarcity of attention, combined with the uncertainty about EE investments described above, can lead to very short time horizons in decision making and capital allocation, e.g., requiring 1-2 year payback on investment.
- For the above reasons, underinvestment in measurement and verification capability that would be needed to verify return on investment and overcome information problems.

Given these barriers to effective market action, there are a number of private and public sector solutions that can be deployed to overcome them. Private sector solutions involve property owners as clients for an array of energy efficiency retrofit services. These services typically involve coordination between Energy Service Companies (ESCos), utility companies, and financial institutions. ESCos provide integrated energy auditing, engineering, and construction management services, under the umbrella of an Energy Savings Performance Contract (ESPC). The ESPC guarantees a minimum level of energy savings given the client's level of financial investment. ESCos thereby combine multiple transactions into one, and can overcome some information problems by guaranteeing pre-project auditing and

post-project measurement and verification. Client organizations, by outsourcing these various tasks into bundled contracts, can relieve themselves of the attentional burden of identifying projects on a piecemeal basis. ESCos can also help clients with access to capital by brokering deals with financial service providers who are accustomed to EE investments, and facilitating connection with utility rebate and subsidy programs for which projects are eligible.

Nonetheless, despite the potential benefits of ESCo transactions in overcoming market barriers, they remain an incomplete solution. As the ESCo industry has evolved, it has achieved its primary success in serving the federal government and the so-called "MUSH" market that includes municipalities, universities, schools, hospitals (I'll call this combined arena MUSH+F). Its penetration beyond this market is far more limited, with privately held buildings accounting for only 25% of projects, and that percentage has decreased over time (Goldman, Hopper, and Osborn 2005). MUSH+F institutions have particular characteristics that reveal the underlying market failures as yet unsolved by ESCos. First, MUSH+F clients tend to be significant users of energy, because they are physically large, occupy an older building stock, and are under-capitalized for facilities improvements. ESCos can therefore afford to bear some of the information and transaction costs in servicing them, which they are unable to do in other client categories. Second, MUSH+F clients usually have a combined owner-occupier, so that the agency and split incentive problems are not present. Third, MUSH+F clients inhabit their buildings for long periods of time, enabling them to have a longer time horizon in decision-making and thus freedom from concerns about recouping investment during property sale. Some of these barriers can be overcome by increasing energy efficiency subsidies, thus reducing project costs for clients and ESCos, but this only occurs amid public policy intervention.

Policy failures

Amid these challenges to market action, public policies have played an important role in promoting EE investment. Since the energy crisis of the 1970's, a number of policies have been employed widely in the United States. These include:

- Mandatory vehicle mileage standards, appliance standards, and building codes that require a minimal level of energy efficiency in the built environment.
- Voluntary labeling programs like Energy Star that help consumers identify energy efficient products.
- Demand-side management (DSM) programs, usually organized through regulation of the electric and gas utility companies. DSM programs subsidize and/or implement home and business energy audits and efficiency measures.

Funding for these programs comes from a combination of fees levied to energy consumers (system benefit charges), from tax money, or from increases in energy prices charged by the utilities.

- Taxes on electricity and fuel that increase the cost of energy, internalize some externalities, and enhance the incentive to invest in EE.
- Market-creating "cap and trade" policies (attempted at the state and regional level within the United States) that generate a cost for pollution and thereby increase energy prices and enhance the incentive to invest in EE.
- Forward Capacity Markets that require utility companies to invest in distributed generation capacity or demand reduction to ensure matching of supply and demand, so as to avoid brownouts and other disruptions.[3]

The fact that EE investment still falls short of technical potential has led some to identify "policy failures" as a third category of explanation alongside market and organizational failures (Biggart and Lutzenhiser 2007; Brown 2001; Levine et al. 1995). Such policy failures include poor design and implementation of the above policies, as well as lack of political will to implement more aggressive policies. While EE does provide a mix of private benefit for energy users and public benefit for society as a whole, there are political interests who have blocked the development of those policies (Biggart and Lutzenhiser 2007). For example, increased efficiency means decreased revenue for oil, gas, and coal companies who may block attempts to tax fuels to encourage and pay for efficiency measures. For property developers, tougher building codes mean increased up-front costs of construction that they tend to oppose. Utility companies have a mixed role in influencing policy. In some circumstances promoting energy efficiency is in their best interest, if it helps reduce load on the electrical grid and thus prevents the need for risky investment in new generation capacity. In most situations, however, utilities have an ultimate financial disincentive to invest in energy efficiency if it reduces their revenue from energy bills.[4]

Cross-sectoral partnerships

Energy efficiency therefore represents a context in which: a good deal of public and private good is technically possible to achieve; the private sector through market transactions has been unable to realize it; and the public sector through regulation

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[3] See footnote 8 in Chapter 3 for further details on this policy and its implications.

[4] Note that this problem can be overcome through "decoupling" utility revenue from their generation of power, so that they are in the business of providing comprehensive energy services, not just BTUs. The utility company involved in this study lobbied heavily for that policy to be adopted in Massachusetts.

has been generally unable to realize it. These conditions constitute what has been called sector failure (Bryson et al. 2006) or public value failure (Bozeman 2002). Bryson, Crosby, and Stone (2006) propose that such situations might stimulate a search for new ways of organizing and collaborating across sectors:

> *Public policy makers are most likely to try cross-sector collaboration when they believe the separate efforts of different sectors to address a public problem have failed or are likely to fail, and the actual or potential failures cannot be fixed by the sectors acting alone. (p. 46)*

This search for new collaborative solutions has, in fact, occurred in the energy efficiency domain for several decades, as institutional entrepreneurs continue to explore the tremendous variety of institutional arrangements that could theoretically support investment in energy and other natural resource efficiency. Provision of materials, money, and manpower to carry out improvements, as well as incentives, norms, and nudges to encourage them, can each come from a number of different actors:

- Property owners and occupants themselves
- Private sector: professional service firms, utility companies, and contractors (any of which may work with labor unions)
- Civil society: neighbors, community-based organizations, and non-governmental organizations
- Public sector: government at federal, state/province, and local levels.

The exact form of this integration and collaboration across sectors has followed broader political trends in the United States. As described in Chapter 1, the United States has experienced a pendulum swinging from government-centered strategies (in the 1970's) to market-centered strategies (in the 1980's and 90's) to experimentation with cross-sectoral collaborations in the 2000's. The domain of energy efficiency services has ridden this pendulum. The Carter administration, reacting to the 1970's oil embargo at the tail end of an era of trust in government, established federal weatherization assistance programs operating in close alignment with the federal Housing and Urban Development department. As the 1980's and 90's neoliberal market enthusiasm brought deregulation to the electric utility industry, private firms known as Energy Service Companies (ESCos) arose with fee-for-service business models, and industrial firms pursued energy efficiency as part of their "corporate social responsibility." Firms like Conservation Services Group and Wisconsin Energy Conservation Corporation, originally established as government-funded non-profit organizations amid the weatherization boom, evolved through this period toward increasingly entrepreneurial businesses, and

thrived by subcontracting efficiency services for utility companies. Now in the late 2000's and early 2010's we see a raft of hybrid organizations like the Cambridge Energy Alliance (CEA) examined in this dissertation, which try to combine elements of government, business, and community-based civil society organizations.

Such collaborations abound at global, national, regional, state, and municipal levels. They involve various levels of government, civil society, and the private sector to encourage energy efficiency investment through public information campaigns, capital funds, and novel policies. The pace of these initiatives in the United States has increased with the 2009 American Recovery and Reinvestment Act (the stimulus bill), routing $16.7 billion to energy efficiency programs (USDOE 2010). The table below describes a few of the most recent initiatives that are substantial enough to have garnered attention from national media and professional associations:

Table 3 - Cross-sectoral partnerships in the United States to promote increased investment in energy efficiency and renewable energy

Name	Geographic scope	Problem scope	Actors involved	Methods
Clinton Climate Initiative EE Building Retrofit Program (CCI-EEBRP)	Global	Large C&I[5] energy efficiency	Clinton Foundation; Energy Service Companies (ESCOs); Financial institutions	Technical assistance; consolidation of funds; facilitation of deals
Southeast Energy Efficiency Alliance (SEEA)	11 state region of US southeast	Large and small residential and commercial buildings; energy efficiency	Variety of utility companies, environmental organizations, universities, and energy product and service companies	Conferences and learning among actors in different states; Competitive deployment of funds to municipal initiatives

[5] C&I is a term used by the utility industry to refer to Commercial and Industrial properties. In practical use, however, this category includes large non-profit institutions like universities, hospitals, municipalities, and schools. Thus some use C&I to mean Commercial and Institutional, which is the way I use it unless otherwise specified. In essence, C&I buildings are where people work, and Residential buildings are where people live. This categorization can lead to problems categorizing and serving mixed-use properties, but this is an issue beyond the scope of this dissertation.

Name	Geographic scope	Problem scope	Actors involved	Methods
Cambridge Energy Alliance (CEA)	Cambridge, MA with some activity in Somerville, MA	Large and small residential and C&I buildings; energy efficiency and renewable energy	Cambridge municipal government; NSTAR utility; foundations; energy consulting and service firms; financial service firms	Public awareness and organizing campaigns; Pre-selection of energy service companies; Intermediation and one-stop-shop; consultation on EE and sustainability strategy
Greater Cincinnati Energy Alliance (GCEA)	Cincinnati, OH and surrounding counties in Ohio and Kentucky	Small residential and non-profit buildings; energy efficiency	Multiple municipal and county governments; Greater Cincinnati Foundation; Duke Energy; neighborhood associations; green jobs organizations; non-profit energy service providers	Public awareness and organizing campaigns; Deployment of public subsidies; Intermediation and one-stop-shop
Energy Efficiency Partnership of Greater Washington	Washington, DC area	Large C&I buildings; energy efficiency	Virginia Tech; Hannon Armstrong (financier); Pepco energy services	Investment fund; awareness campaigns among institutional leaders; facilitation of service deals

It is important to note that I deliberately omit two kinds of organizations whose inclusion would massively expand this list: organizations focused on weatherization of low-income families' homes; and organizations promoting "green jobs" training as an avenue toward economic justice and recovery.[6] These organizations do seek to make headway on public goods related to energy use reduction while providing services (building retrofits and training respectively) to private citizens. I omit them because in addition to a logic of common-good environmentalism and private-good energy savings, such organizations employ a logic of social justice and economic redistribution by specifically serving poor communities. This third

[6] For a comparative analysis of other utility-community partnerships, see Michaels et al (2010). For a guide to federally funded low-income weatherization programs see http://www1.eere.energy.gov/wip/wap.html. For indicative examples of "green job" focused efficiency programs, see http://www.greenforall.org

institutional logic adds a further layer of hybridity and increases the chance of conflict and tension inside the organizations (for example, increasing wages supports social justice goals but decreases return on investment for EE projects). I am looking for a more conservative window onto the tensions of hybridity described in Chapter 1: the minimal conditions in which problems of reconciling competing institutional logics will arise.

Even within the above list, any of the initiatives could make a worthy topic of research for scholars of cross-sectoral collaboration and hybrid organizing. As discussed above, all are engaging in a domain where a mix of public and private benefit is possible, and where a mix of public and private institutional and organizing logics is at play. CEA's tagline – "Save money, save the planet" is emblematic of this hybrid logic, with equivalent slogans and justifications at play in all of them. Each initiative seeks to address the market and policy failures described above through diverse contributions of their constituent organizations, especially the problems of transaction costs, attention scarcity, and access to capital, as I will discuss below.

This dissertation is not, however, a comparative study of these multiple initiatives. In the section that follows, I describe my rationale for choosing one among these – the Cambridge Energy Alliance (CEA) – to study in depth, and the mixed-method field study approach I employed. I then give an overview of CEA's activities and performance, setting up the basic empirical puzzles about CEA that subsequent chapters will explain.

Methods

As discussed in Chapter 1, making hybrid organizing work is not trivial. The competing institutional logics at play can lead to lower organizational effectiveness when attempts at robust action become simply confusing. Combining logics with the intent to generate more complex ways of operating can actually lead to simplification as one logic dominates. What we need to understand are the processes and practices through which actors in hybrid organizations negotiate these tensions. Under what conditions are they overwhelmed by such tensions and under what conditions are they able to make hybrid organizing work?

Case selection

Among the above-listed cases of hybrid organizing to promote energy efficiency, the Cambridge Energy Alliance stands out as being particularly well-suited for study. It is the focus of this dissertation for four reasons: it affords within-case comparison; it has a clear scope and boundaries; it exists in a favorable context; and the timing for data collection given the organization's stage of development is ideal.

Within-case comparison: The advantage of studying a single hybrid organization is that doing so allows very close observation of the actors involved, and documentation of their ongoing thinking and action. In doing so, the micro-level mechanisms of hybrid organizing can come to light. The disadvantage of studying a single context is that it can be difficult to get analytic traction through cross-case comparison. CEA is a rich research site because it allows both close observation and within-case comparison as it engages with multiple different "clients." Each energy-using entity that CEA engages – households, businesses, universities, hospitals, etc – provides a new opportunity for enactment of their hybrid logic. The challenges of hybridity vary in their intensity with different clients, and the outcome of each is slightly different, providing the raw material for analytic induction (Becker 1998) in an embedded case design (Yin 2003; Scholz and Tietje 2002).

Clear scope and boundaries: CEA is not, however, the only context available for this kind of within-case research design. There is a vast array of inter-organizational and cross-sectoral collaborations to promote energy efficiency and climate change mitigation. Particularly as the U.S. federal government allocates money through economic stimulus bills to energy efficiency, more form every day to access those funds. Yet many of these are aimed at policy advocacy (ACEEE, Alliance to Save Energy, USCAP), professionalization of energy efficiency technicians (ASHRAE, BPI, USGBC), and similar tasks that I would label explicit institutional work (Lawrence and Suddaby 2006). While they are composed of public, private, and civil society actors, and are therefore a kind of hybrid organization, they are difficult to study. Their impacts are diffuse and difficult to measure, with no geographical scope. They do not have specific accountability to individual clients, so their activities are not as amenable to within-case analysis.

The Clinton Climate Initiative comes closer to these parameters, since it involves itself in projects directly and has client-level accountability the way a private service organization does. Yet its scope is global, with no clear definition of the boundaries of its activity – it operates opportunistically, at locations around the world, making it difficult to judge its performance against concrete goals.

By contrast, the advantage of the state and local level collaborations in the list above is that their whole market is amenable to investigation. They involve a fixed geographic boundary with a fixed building stock being targeted by building retrofit programs.

Favorable context: Among local geographies, Cambridge, Massachusetts is a particularly useful context for study because it is favorable to the success of environmental initiatives like CEA. Therefore any challenges observed in the

organization's development are not likely due to a lack of available resources or political support, and are more likely attributable to its hybridity. Cambridge is a wealthy, highly educated, and politically liberal community. Per capita income is $43,624 compared to $27,466 nationally. 71.7% of Cambridge residents have a Bachelor's degree or higher, compared with 27.4% nationally (US Census Bureau 2008). An analysis of voting records in the 2004 elections resulted in Cambridge's being rated the 8th most liberal city in the United States (BACVR 2005). Harvard and MIT are the city's two largest employers (Cambridge Community Development Department 2006); along with a host of biotechnology and information technology companies, these universities provide a strong base of highly trained volunteers and advisors. Cambridge is part of a Boston metro area with several philanthropic foundations at least partially focused on environmental causes.

Further, the City government has made political commitments and built a solid administrative infrastructure to back environmental initiatives. Its Environmental and Transportation Planning department has executed City-wide sustainability projects, including single-stream recycling, public and bicycle transportation, and water treatment systems. In 1999, Cambridge joined the worldwide Cities for Climate Protection (CCP) campaign run by the International Council on Local Environmental Initiatives (ICLEI). CCP required the City to form a citizen's advisory council for climate action and set concrete targets for greenhouse gas reduction. This advisory council provides an ongoing connection between the City's senior administration and a network of environmental organizations and initiatives. Based on the advisory council's recommendations in 2002, the City committed to a goal of reducing emissions of all public and private activities within the city limits to 20% below 1990 levels by 2010. This fact motivated CEA's formation in the first place, when an analysis of 2005 emissions in Cambridge showed them going up rather than down towards the City's goal. Spurred by what they saw as a disturbing trend, two City administrators sought advice from Rob Pratt at the Boston-based Kendall Foundation; in their conversation the idea for a Cambridge Energy Alliance was born. This founding process, discussed further in Chapters 3 and 4, helps illustrate the wealth of resources and attention for environmental initiatives in Cambridge.

This timing of CEA's founding, given broader trends in the United States, was as favorable to CEA as the locale of Cambridge. CEA got its start in 2006 amid a surge of public interest in climate change connected to the release of Al Gore's film *An Inconvenient Truth*. As a result it garnered public support from executive levels of key institutions: in March 2007, CEA conducted a public launch event with great fanfare, including speeches by the governor of Massachusetts, the CEO of the NSTAR utility company, and the presence of numerous city and state officials. CEA also

enjoyed substantial attention in the press, including nationally circulated newspapers and a nationwide broadcast PBS NOW special. The popular and political interest in climate change and the specific promise of energy efficiency continued to be a boon to CEA for much of the observation period, particularly when the 2009 federal stimulus money included $16.7 billion earmarked for energy efficiency and renewable energy (USDOE 2010). As a result of this munificent environment and moment, CEA is a particularly powerful case to foreground the more intrinsic challenges of hybrid organizing.

Timing of research: Cambridge Energy Alliance is also the most amenable and interesting to study among local collaborations given the timing of this research in relation to its founding. Having been established in 2006, secured operating capital in 2007, and commenced operations in 2008, CEA was in an ideal stage of development for observation in the data collection period of July 2008 to May, 2010. Theorists of cross-sectoral collaboration (Huxham and Vangen 2000; Bryson et al. 2006) have emphasized that goal formation presents a particular challenge to organizations integrating multiple institutional logics. CEA during the study period was young enough that its early formation was still fresh in informants' minds and documents, during which the founders developed the basic operating assumptions, goals, and strategies. It was also just beginning to make significant moves toward on-the-ground service delivery, during which it would iterate on those strategies, as I was able to observe.

One category of alternatives to CEA would have been much older energy collaborations that arose during the late 1970's and early 1980's energy and economic crisis. Some hybrid organizations like Conservation Services Group (CSG) have grown and thrived from that era through the present, and in Chapter 5 I do discuss CSG in contemplating counterfactual scenarios for CEA. Nonetheless these organizations would not be as appropriate for study for two reasons. First, the formation of organizational governance, goals, and strategies is far enough in the past that informants would be subject to strong retrospective biases. Second, such a study would suffer from survivorship bias, studying only organizations that had been successful for 20-30 years. The present study has the distinction of studying an entrepreneurial organization in process, without foreknowledge of its success or failure.

At the other extreme, it would have been possible to study younger initiatives such as the Greater Cincinnati Energy Alliance (GCEA), which formed in 2008, and which involves collaboration among multiple municipalities and county governments as well as business and civil society organizations. At the time of writing, this organization had yet to begin any delivery activities and will not be ripe for study

for several years. I have conducted one round of interviews with key stakeholders of GCEA, but a comparative study remains on hold for future research.

For these three reasons of within-case comparison, clear scope and boundaries, and optimal timing, Cambridge Energy Alliance is the choice of research context for this study.

The Cambridge Energy Alliance

To understand the research methods I chose in studying CEA, it is necessary to first describe the structure of the organization and the actors and contexts involved.

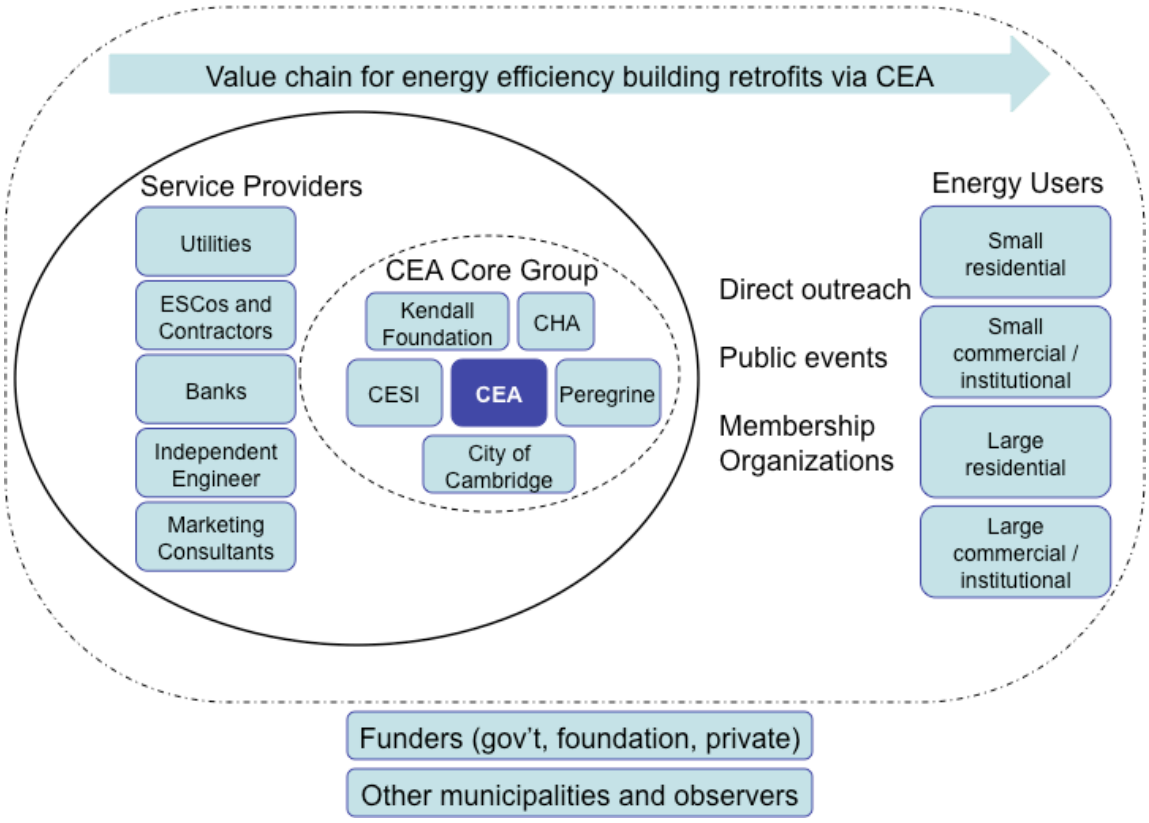
The Cambridge Energy Alliance (CEA) was created through a partnership between the municipal government of Cambridge, Massachusetts, several Boston-area foundations, the electric and gas utilities, and a range of energy service companies and financial institutions providing technical and financial assistance for more energy efficient buildings. CEA's established goal is to achieve "unprecedented levels of energy savings and clean energy" in Cambridge (indicated by 50% penetration in both commercial and residential sectors, and 50 MW of peak energy use reduction). CEA is intended to be a mission-driven non-profit organization, organizing community outreach and serving as a gateway for this group of private and government organizations. Yet it is also designed to sustain itself like a business with revenue from two sources: markups on energy efficiency projects; and rewards for greenhouse gas and energy use reduction created by voluntary and regulatory markets. This bridging of public, private, and non-profit spheres is what makes CEA a vivid case of hybrid organizing. In Waddell's typology of cross-sectoral collaborations, it is a "front-end societal learning and change initiative" (Waddell 2005:124), one focused on joint implementation and service delivery.

This cross-sectoral hybridity can be seen in the figure below, which depicts CEA and its exchange partners in the value chain for energy efficient building retrofits, as an alliance arrayed in concentric circles. At the core is the CEA non-profit organization itself, which operates with 3-5 full-time staff, several interns and volunteers, and a stable of 10 consultants from two firms (CESI and Peregrine), who represent themselves as part of CEA to potential clients and partners. Tightly aligned with CEA is the City of Cambridge,[7] with the City Manager serving on the Board of Directors,

[7] In this dissertation I will use the lowercase city to mean the whole city of Cambridge including residents, commercial establishments, institutions, and government infrastructure. The capitalized City will refer to the City government as an organization. Similarly, "Alliance" will refer to the core non-profit organization Cambridge Energy Alliance, while "alliance" will refer to the network of organizations through which it operates.

and representatives from the Environmental and Transportation Planning Division working in close contact with CEA staff. The Kendall Foundation was a key partner in the early stages of the organization, with two board members and a key founder. The CEA "core group" that meets on a biweekly basis consists entirely of members of these five organizations, with sporadic participation by representatives from the next layer. The Cambridge Health Alliance (CHeA) has a legal connection to CEA as CEA's recipient of grant funds while CEA's 501(c)(3) status is pending; CHeA maintains several board positions as a result, and is depicted in the CEA core.

Figure 2 – CEA and its exchange partners. Within the solid line are people and organizations that represent themselves as part of CEA when interacting with people outside the solid line



At the next level is a set of service-providing organizations that conduct the marketing, energy audits, project implementation, project financing, and measurement and verification. These include five Energy Service Companies (ESCos), the major electric utility NSTAR, an investment bank, two retail banks, an equipment finance company, an independent engineering firm, and three marketing consulting groups developing marketing and outreach strategies for the Alliance. CEA serves as a kind of broker and facilitator for these services. With the exception of the electric utility, these service providers were selected on competitive bid.

With these partners CEA conducts public events, direct outreach to households and businesses, and outreach through membership organizations representing key constituencies they hope to reach. These are the approximately 43000 households, 20 million square feet of office and laboratory space, and wide array of universities, hospitals, schools, and other buildings in Cambridge that use energy and cause GHG emissions. Inhabiting these buildings are individual, collective, and organizational decision makers who have the option to work with CEA to invest in energy efficiency, water efficiency, and renewable energy in order to save money on their energy bill, obtain a financial payback, and reduce their ecological footprint. Thus CEA's tag line is "Save Money. Save the Planet." This phrase perfectly captures its hybrid logic.

Data gathering

In gathering data about the Cambridge Energy Alliance, I pursued a mixed-method embedded case study design (Yin 2003; Scholz and Tietje 2002). While CEA's network as a whole, depicted in Figure 2 is the primary unit of analysis, I also explore sub-units of analysis that allow comparison and analytic induction within the CEA context. These sub-units are the *relationships between CEA and its exchange partners*, particularly the financiers and clients upon whom they are dependent for resources and thus survival.

The study is mixed-method in that it integrates participant-observation, semi-structured interviews, and archival data analysis, including some quantitative analysis. This mix of inquiry methods allows for triangulation of findings and thus enhanced validity.

Participant-Observation

The primary source of data for this dissertation is participant-observation within the Cambridge Energy Alliance organization, from the period of September, 2008 through May, 2010. Participant-observation involves claiming a valid social role within the context of study in order to observe and experience it from an insider's perspective. The role I took on was as a kind of documentarian for the organization. This involved taking notes on my laptop computer at a variety of internal meetings, including the bimonthly Board of Directors meetings at the CEA office, the biweekly Core Group meetings (held at the Cambridge City Hall Annex), and strategy meetings held intermittently throughout the period of observation. I was also invited to participate in meetings with CEA clients, during which I observed, took notes, and then shared in debrief sessions afterwards. For Board meetings and some Core Group meetings, I was asked to prepare meeting minutes to facilitate record keeping and continuity of conversations.

Over the course of my fifteen months of observation, CEA staff referred to me as a "researcher in residence," as a "note-taker," or as a "scribe." All informants – CEA staff and consultants, City staff members, and professionals in the energy and financial service companies were aware of my being a doctoral student and my goal of writing a dissertation and academic papers about CEA. They saw my work as being in alignment with their mission to be a "national model" that could be replicated in other contexts, and hoped that I could capture "lessons learned" useful in those contexts. The one context in which my research role was partly disguised was when I was invited to participate in meetings with CEA's clients during which they presented findings from building energy audits. In these conversations I was introduced as someone "working with CEA" without further detail, and I stayed quiet as I took notes on paper or on my laptop computer. When I went back to those clients for semi-structured interviews, I identified myself formally and described my research goals; none objected to my having also observed the earlier conversation.

While note-taking at meetings was my most welcomed and well-understood role, I also observed the day-to-day workflow of the organization. This was possible because CEA's office included a worktable in its center room and a large table in its conference room at which I could set up my laptop. Doing so allowed me to observe the general flow of activity in the office, and was a good position at which staff and consultants would pause to chat. Informal conversations that served as unstructured interviews were quite common, particularly during the tenure of one Executive Director who used me as a sounding board and confidant as he went through his days.

Informants from CEA were impressively candid with me throughout my two years of observation, sharing personal reflections on CEA's internal and external relationships, activities and outcomes. I believe this access and candor were facilitated by three things: their genuine desire to capture and share "lessons learned"; a belief that I could offer value to the organization through my own reflections and writing (a process I discuss below under "clinical inquiry"); and a non-disclosure agreement that I signed on behalf of my university, giving CEA the right to review my writing prior to publication and redact any confidential information. This dissertation was subject to three such confidentiality reviews at various stages of writing, none of which required any deletion or alteration of material. The only material I personally chose to omit concerned identifiable quotes and stories that could potentially damage the reputation of some individuals. I did this out of a professional obligation to "do no harm" to my informants.

The table below summarizes my participant observation activity.

Table 4 - Participant Observation activity, September 2008 through May 2010

Activity	Frequency	Start date of observation	Number observed by 5/31/2010
Strategy meetings	Sporadic	2/11/2009	9
Board of Directors meetings	Every 6-8 weeks	10/31/2008	9
Core Group meetings	Every 2 weeks	9/3/2008	27
Observation in office (2-5 hours per day)	Sporadic	9/4/2008	80 days

Clinical inquiry

In addition to the more unobtrusive note-taking role, this research project at times included a clinical or action research component when I was asked as a researcher to contribute my insights to the organization. On three significant occasions, CEA executive staff members asked me to share my reflections on the organization given my research. I complied with these requests, offering both verbal feedback and written documents describing my reflections. I did an audio recording of these conversations, allowing me to do two things: use my impromptu verbal reflections to support my theory building and writing; and document the moments in which my feedback may have influenced thinking inside the organization. Latour calls this the "fourth notebook," the space for documentation of the researcher as actor influencing the system he or she is observing (Latour 2005).

In the first occasion, I shared the reflection that CEA was approaching its clients with a fixed concept of its offering, except in certain occasions where a more open-ended conversation was pursued and CEA served as a "thinking partner." The latter seemed to generate more openness and innovation on the part of the client. This reflection was the seed for my own theorizing in the chapters that follow. It may have also influenced the organization in its approach to clients, particularly as its original approach did not succeed as hoped.

On the second and third occasion, I shared reflections about accountability in the organization, and the fact that many activities were proposed by members of the Core Team, generally agreed upon, but not executed. This is a feature of the CEA organization that they believe owes in part to their reliance on consultants who generate a number of ideas but do not have accountability for their execution. This topic I did not make a focus of my writing and research, because I believe it is idiosyncratic to the composition of the CEA organization (with 3 core staff and 6

consultants) and does not bear more broadly on the hybrid form. The issue has also not been confronted in any significant way within the organization.

Finally, in the third researcher feedback moment, I shared the idea of "paradoxes of hybrid organizations" that became the first paper I drafted from my research. This paper was a sketch of this dissertation as a whole, with sections that roughly match the chapters here. The framing was slightly different, and organized the empirical findings around a series of four paradoxes. The underlying concepts were similar, however. At the time of writing this dissertation, the ideas were being discussed by members of CEA as part of their ongoing strategic reflection. In Chapter 4, I describe the most important impact of my work on CEA, which was to illuminate the challenge of "successful failures."

On the whole, however, I do not believe that my clinical reflections significantly changed the thinking and action of CEA participants. Their main effect was to enhance the candidness of informal and semi-structured interviews with members of the organization, as predicted by Schein (2007): when informants believe you are there to help, they are more likely to disclose information.

Semi-structured interviews

For some categories of participants in the CEA network, semi-structured interviews were my primary means of inquiry. Over the course of the study period, I conducted a number of semi-structured interviews, with the majority occurring at the beginning and end. Interviews were with informants in the following categories:

Table 5 - Semi-structured interviews

Informant type	Number of interviews
CEA executives and staff	2
Consultants to CEA	6
City officials	3
Potential and actual C&I clients	11
Energy service company partners	8
Utility representative	1
Related organizations and initiatives in Massachusetts	7
Related initiatives outside MA, talking about CEA	2
Total	**40**

I also conducted 24 interviews of people in Cincinnati connected to the Greater Cincinnati Energy Alliance in July, 2009. While this dissertation does not formally

include findings from that comparative case, the interviews did inform some of the ideas and theory building.

In the early stages of the research, I sampled through a snowball methodology – at each interview I asked the informant to suggest others to whom I should speak. Once I got more oriented to the context, I requested interviews more strategically, for example pursuing clients with whom CEA had engaged. In most cases I made initial contact via email after an email introduction from a previous informant. Among the C&I clients and members of related organizations and initiatives, however, I often emailed them without a prior introduction.

Semi-structured interviews were conducted according to protocols that I customized to the informant's role, circumstances, and available time. I conducted 21 interviews in person at the informant's place of business. Two were conducted in public venues (cafes), and 17 were conducted by phone. They began with my introducing the purpose of my research. I usually described my research question as "how can different kinds of organizations work together to make progress on energy efficiency?" I asked permission to do an audio recording for my own records. Once they gave preliminary consent I then gave them verbal guidelines of informed consent: that the interview would be voluntary and could be stopped at any time; that they could go off the record at any time; and that I would keep their responses confidential by not sharing any attributed quotes with others or in publication without checking them first via email.

My first questions always focused on the person's career background and current work role, using prompts such as "what does a day in your life look like?" and "what keeps you up at night?" The next section of the interview usually concerned their past experience with efforts in the area of energy efficiency, renewable energy, environmental management, and sustainability. These questions allowed me to understand the history and context for CEA's work. I then usually asked for a detailed narrative of their interaction with CEA, past, present, and then asked them to speculate about the future of their interaction with CEA.

Because I was partly interested in how outside actors make sense of hybrid organizations, I gave little description of CEA and instead asked them to characterize the initiative for me. Many informants did ask, usually at the end of the interview, for my own perspective. I shared information as objectively as possible in such situations, using only publicly available information about the organization (i.e., what the informant could have learned from visiting CEA's web site).

Archival data

My role as documentarian also made me privy to documents and archival data sources. These included the following:

- Publicly available web sites, flyers, and other publicity materials about CEA and its partner organizations
- Powerpoint presentations and Word documents describing CEA's organizational structure and strategy to internal and external audiences
- Grant applications and other documents soliciting funding for CEA's activities
- Financial reports prepared for internal strategy and Board of Directors meetings
- Tables and spreadsheets tracking CEA's engagement with residential and C&I clients
- A database used internally to track client engagements from initial email or web inquiry through the process of conducting an energy audit
- Energy audit reports about C&I clients with detailed breakdown of proposed projects
- Meeting minutes from previous Board of Director, Core Team, and internal strategy meetings that I was unable to attend

Analysis of this data was primarily qualitative, as described below.

Analytic methods

My overall analytic approach was iterative and abductive with the goal of building and refining theory from rich case study research (Dubois and Gadde 2002; Blaikie 2007; Eisenhardt 1989). I moved between grounded coding of themes emergent from the data (Glaser and Strauss 1967), connecting these themes to concepts in the academic literature, and doing theory-driven coding of the data with concepts from the social science literature.

The field notes from observation and interviews, combined with the archival documents described above, total well over 2000 pages of material. To organize the data I imported all materials into a database using the Atlas.ti version 6 qualitative data analysis software. This tool allows categorization of documents, coding of passages within documents, visual mapping of relationships between codes, and complex queries indicating intersections among codes and document types. It also provides a repository of memos, which I wrote on a regular basis as I gathered and analyzed the data iteratively throughout the study period.

My first pass of analysis focused on coding large chunks of my field notes into interaction types, including Board of Directors meetings, core group meetings,

meetings with ESCo partners, meetings with clients, informal conversations, and ethnographic interviews occurring spontaneously during my observations. I also coded on key recurrent topics of conversation including specific clients of CEA, the relationship between CEA and its partner organizations (e.g., the ESCos), and the role of the City government. When I found a recurring theme that seemed particularly interesting, I composed a memo about that theme to help make sense of what I was seeing. The guiding research questions were simple and pragmatic. What are the main challenges that CEA faces as a hybrid organization? How do the actors involved make sense of those challenges? Under what conditions and through what practices do the actors overcome the challenges? At the outset of the research, it was not clear how successful CEA would be in accomplishing its objectives, nor was it clear what the contextual and market conditions would be that might contribute to that success. Whatever the outcomes, however, I wanted to be able to explain the specific contribution of CEA's hybridity.

This first wave of coding generated over 200 codes, many of which did not have clear conceptual boundaries between them. I therefore undertook a process of disambiguation, adding annotation to each code and consolidating or deleting where appropriate. Where the boundaries of concepts were unclear, such as between trust and legitimacy, I read academic literature that had explored these concepts, which helped me to clarify the conceptual boundaries between them and to re-categorize some coded subsections of my data.

To assist this process of disambiguation, I also developed a visual "network view" of codes with conceptual links between them to help clarify the connections and differences between them. The process of conceptual network mapping yielded critical insights about internal contradictions in the logic of CEA as a hybrid organization. While its connection to the City and non-profit status was intended to be a source of legitimacy and synergy in serving clients, this hybridity was also a source of illegitimacy and confusion. I then did a more deductive round of coding, based on these insights, focusing on a few codes that sat at the heart of the contradictions.

The concept of paradox (Poole and Van de Ven 1989; Quinn and Cameron 1988; Smith and Berg 1987; Lewis 2000) seemed a useful way to characterize these contradictions, and I wrote an extended memo on the paradoxes of hybrid organizing. I converted the memo into paper form and presented to academic colleagues. That paper included multiple narratives emphasizing different interactions CEA had had with potential financiers and clients, each of which illustrated the paradoxes. Based on feedback that I needed to develop clearer

connections among the different paradoxes I had identified, I undertook another round of coding and theorizing.

In parallel with this intensive study of the everyday, in-practice challenges and sensemaking of CEA actors, certain high-level outcomes of the organization's development were also becoming clear. These outcomes are explained in the next section: a general failure of the organization to meet its objectives and stakeholder expectations; a drift of the organization from a hybrid logic to a more traditional non-profit; and a few pockets of success in which these problems were overcome or at least approached in creative ways. These outcomes served as empirical puzzles to be explained in any account of CEA, thus focusing my theory development efforts.

In the final round of theorizing I more explicitly developed an embedded case study design with comparisons among CEA's interactions. This design allowed me to more precisely identify the conditions and mechanisms leading to the observed outcomes. I gathered a final round of interviews with key clients to fill in missing data; doing so also allowed me to validate concepts and hypotheses I had generated in earlier data collection. Through this final iteration of data gathering and theorizing, I developed the basic framing and narrative arc of this dissertation.

Outcomes and puzzles of the Cambridge Energy Alliance as hybrid organization

The timeline below highlights major milestones for the Alliance, and provides a rough overview of the story of CEA, which will be elaborated throughout the dissertation. The timeline was developed iteratively through triangulating interviews, archival records, and my own observations.

Table 6 - Timeline of events at Cambridge Energy Alliance

External events	Dates	Organizational milestones
Cambridge joins ICLEI Cities for Climate Protection. GHG goal: 20% below 1990 by 2010. Renewables goal: 20% of municipal by 2010	1999	
Cambridge Climate Plan	2002	
LEED Gold Cambridge City Hall Annex opens	2004	
Rob Pratt moves from Renewable Energy Trust to Kendall Foundation	Feb 2006	

Inconvenient Truth hits theaters	June 2006	Cambridge City environmental planning staff approach Rob Pratt and Ted Smith for help with meeting climate goals, Pratt proposes $100M scale project focused on building energy efficiency
		First design team meeting – Pratt, Dayton, Foy
	July 2006	Design consultation with Pratt's extended colleagues - energy consultants, utility and ESCo industry experts
	July 2006	First meeting with City Manager Healy to present design
	Sept. 2006	Presentation to Healy & staff, MIT, Harvard, local groups
	Nov 2006	Core group begins meeting weekly – Donovan as project manager; Rasmussen, Balduc, Anders from City; Pratt, Panek from Kendall; Dayton, Gromer as consultants
	Q1 2007	Initial financing from Barr, Kendall, Chorus Foundations $530K
	Feb 2007	Deborah Donovan starts as first full-time CEA employee
	March 2007	High publicity launch event with Gov. Patrick, Mayor, City Manager, NSTAR CEO
	Q2-3 2007	ESCO RFQ, 13 applicants
	June 2007	CEA Board is formed, meets as needed
	Oct 2007	ESCO preferred vendors chosen
		First round foundation funding starts to run out
	Nov 2007	Lovins-facilitated charette
	Dec 2007	Paul Gromer hired as CEA interim CEO
	Jan 2008	MMA Renewables (finance partner) falls through
	Q1-4 2008	Founders notes debt financing strategy, target $3M
	Q1, 2008	Large C&I outreach begins
	March 2008	PBS NOW special; Kirkland Cleaners featured
	April 2008	Innocentive challenge for A/C innovation
	July 2008	Josh Hassol named CEA CEO
MA Green Communities Act signed into law	7/2/2008	
	Aug 2008	Launch of residential program with CSG

	Fall 2008	Extensive outreach to large C&I for ESCo projects
	Nov 2008	Meeting with Inspector General about municipal procurement; begin pursuing Home Rule Petition
	Jan 2009	Lilah Glick hired as community outreach coordinator
Passing of Reinvestment and Recovery Act (stimulus bill)	Feb 2009	Six month summit – move to diversify C&I offerings
	March 2009	Three major C&I clients fall through; first meeting with CDM
	April 2009	NSTAR $50K to CEA based on kwh/therm goals
	4/16/2009	Josh Hassol announces resignation, Deborah Donovan takes on interim Executive Director position
	May 2009	CDM agrees to go forward with IGA (first large C&I)
		Completion of Kirkland Cleaners project
MA passes Stretch Code	June 2009	Summer canvass – 2700 doors knocked, 512 people engaged, 21 people interested in measures
		CEA website overhaul launched
City Council approves home rule petition	July 2009	Garrett Anderson hired as Energy Advisor
		Piloting of revamped C&I strategy (sustainability consulting) with key clients
	Aug 2009	RFI for behavioral services concludes
	Sept 2009	CEA initiates development of Efficiency 2.0 tool
		Kresge grant awarded to MEEII
		Major C&I client pulls out just before agreeing to IGA
Home Rule petition passed by MA house and senate	Dec 2009	Tom Vautin added to CEA board
		Staff reorganization designates Garrett, Lilah, and Deborah as Directors
	Q1-2 2010	Cambridge receives federal Energy Efficiency Community Block Grant (EECBG) funds. CEA commences work on joint initiatives.
		Start of outreach to universities, life sciences firms for city-wide laboratory energy project.
		CEA commences advisory projects with Cambridge Housing Authority and Cambridge Health Alliance.

CEA's story and outcomes present two empirical puzzles, results that my dissertation seeks to explain.

Puzzle 1: Disappointing performance and mixed success

The first puzzle is this: why has CEA fallen so far short of its goals and expectations, despite its founding in a favorable context?

As described above, the locale of Cambridge and the 2006 wave of popular interest in climate change provided substantial support for any initiative poised to reduce greenhouse gas emissions. CEA set an ambitious but data-driven goal of 5% reduction in fossil fuel consumption in Cambridge. As a public-private-non-profit hybrid organization, CEA seemed particularly poised to ride the wave of support and achieve its goals. It promised a variety of resources and relationships for getting things done, multiple sources of legitimacy and trust, multiple narratives for engaging a wide range of energy users, and high leverage actions that meet multiple goals simultaneously.

CEA's results, however, have been mixed. In raising funds to support its operations, it successfully raised $4M in philanthropic grants and loans, but struggled through periods of near insolvency along the way. In its efforts to broker energy efficiency projects with the largest energy users in Cambridge, it had only one clear success at the time of writing, two years into earnest effort at outreach to 46 high-potential clients. A few other clients have engaged CEA in advisory services, advancing CEA's mission but at a modest pace. These outcomes have been disappointing to every person I interviewed.

To best understand the reasons behind CEA's overall outcomes, it is helpful to carefully mine the variation that exists. Under what conditions has CEA been successful in engaging with key exchange partners? What do these conditions reveal about CEA's deeper challenges, and about the tension between robustness and confusion described in Chapter 1? These questions motivate Chapter 3. Through comparative case analysis of CEA's exchange relationships, I illuminate the *Paradox of Hybrid Legitimacy*. CEA's compound, hybrid identity was designed to enhance its legitimacy – bringing the imprimatur of the City to its group of pre-selected business partners, and expanding its range of audiences and exchange partners (e.g., seeking support from both foundations and project financiers). This hybridity instead provoked confusion and concerns about conflict of interest among key exchange partners, many of whom pursued energy efficiency investment through alternative venues. The exceptional situations were those in which CEA

created alternative pathways to legitimacy: interpersonal trust (through friendship and inter-organizational ties); finding exchange partners who are themselves hybrid or accustomed to hybridity; and offering options for exchange that fit with conventional schemas.

In this context, CEA has fallen prey to two classic symptoms of sensemaking amid paradox: stuckness and inaction, due to the ambiguity of how to best present the organization to exchange partners; and oscillation between trying to fit conventional schemas and presenting itself as hybrid and novel. These gyrations contributed to exchange partners' confusion, compounding its challenges.

Puzzle 2: Shifts in strategy and identity over time

The second puzzle is a gradual transformation in CEA's strategy, identity, and practices over time. In the organization's early phase, the CEA founders' intention was to operate it as a fee-for-service business, at least after an early seed-funding through grants. As CEA evolved, however, this basic identity and strategy shifted. In a second phase, running through the end of 2009, the organization had come to derive the vast majority of its revenue from foundation and government grants, and to define itself as being more like a traditional non-profit organization. Then, later in 2010, the organization made yet another transition towards a more complex way of operating that reintegrated the three institutional logics.

How did these three phases of varying organizational logic come to be? What drove it to move between simplified logics, and then toward greater complexity? How were these contradictory processes experienced by the actors involved? These questions motivate chapter 4, where I explore three processes that contributed to the change: CEA's learning from the successes and failures I document in Chapter 3; CEA's adaptation to a changing institutional context wrought by Obama's election in 2008; and CEA's reframing its identity and strategy amid the ambiguity of "successful failures." This third process has particular explanatory power in the transition from Phase 2 to Phase 3, and illuminates the *Catalyst's Paradox*, a previously unidentified tension in hybrid organizations. In a number of contexts CEA has indirectly catalyzed energy efficiency investments that it cannot capitalize on. These are failures from the perspective of a private-service business logic but successes from a public-service non-profit logic. As they interpreted these "successful failures," actors in CEA have reframed the organization's identity and strategy over time – first moving toward a non-profit logic that framed their work as successful, and then toward a more complex logic of acting as a "catalyst" in ways that simultaneously advanced its public and private mission.

Chapter 3 – The paradox of hybrid legitimacy

Introduction

The Cambridge Energy Alliance presents a puzzle: why has the organization fallen so far short of its goals and expectations, despite its founding in a favorable context? What can we learn from its experience about the effectiveness of hybrid organizations?

CEA was formed in 2006 with ambitious goals. It was to be a "first in the nation" partnership between City government, philanthropic foundations, private financial institutions, and energy service companies, with a goal to deliver broader and deeper energy efficiency than had been attained before. Through a design charrette involving energy efficiency luminary Amory Lovins and scholars from MIT and Harvard, it finalized its data-driven goals: mobilizing $100M in private capital; reaching 50% penetration for efficiency services in all sectors of the building stock; and achieving a 5 megawatt reduction in peak load on the electric grid with a 5% overall decrease in fossil fuel consumption in Cambridge. The organization's home in the city of Cambridge, Massachusetts, and the timing of its founding in 2006 created a favorable context for the success of any such environmental initiative, as discussed in Chapter 2. CEA's extended team includes highly experienced energy efficiency professionals, as well as volunteer labor and neighborhood partnerships to help guide people through energy efficiency transactions. The organization has enjoyed private, philanthropic, and government investment totaling close to $4 million for its internal operations.

Despite its favorable context, CEA's performance has fallen far short of these goals. This fact is most visible in the track record of energy audits and projects with commercial, industrial, and institutional clients, which include the most substantial energy users, and account for 64% of the total greenhouse gas emissions for the city of Cambridge. The largest among these – major biotechnology companies, universities, and municipal government facilities – account for the majority of energy use and greenhouse gas emissions. From an extensive list of prospective "targets" or "clients" for its energy efficiency services, 46 had merited ongoing attention by CEA's client managers by the time of writing. Of those, 10 had actually brought CEA's ESCos into their facilities for preliminary walkthrough energy audits and proposals, free of cost. The next step in the process, however, would be to commit to a detailed investment grade audit (IGA) and implementation of energy conservation measures. The IGA requires a fee, and implementation requires clients' up-front investment (using various kinds of financing) with payback from

energy savings over time. Only one client had advanced to the IGA stage at the time of writing, two years into earnest effort at outreach to these organizations.

It is clear from this one success that CEA does have an economic and environmental value proposition: the client who has progressed will be investing $687,000; will get approximately 15% annual return on investment through reduced energy cost; will attain LEED Gold certification for its building that increases resale value; and will reduce energy use and associated pollution by about 12%. That only one client has taken such a step, however, is disappointing in the eyes of every person that I interviewed.

In CEA's defense, that the problems they seek to solve are not trivial. Energy efficiency efforts experience significant market barriers, as described in Chapter 2. Energy Service Companies (ESCos) have been largely unsuccessful in penetrating beyond the MUSH and Federal markets to office buildings and other commercial facilities. As one CEA consultant put it, "this is the energy efficiency analogue of Putting a Man on the Moon." In this context, CEA's performance may not be surprising, and in fact their anticipated success at one C&I project outside the MUSH market is not insignificant. Further, the recession of 2008-09 may have exogenously impacted some clients' willingness to invest in their facilities.

My interviews and observations revealed, however, that a set of factors is at play beyond the normal challenges of the energy efficiency market. In some cases, clients have pursued energy efficiency investments through avenues other than CEA, and thereby reveal the distinctive challenges of CEA as a hybrid organization. Among other exchange partners, CEA has made its hybridity an asset, both in financing the organization and in building relationships with key clients that could build toward larger efficiency investments.

Mining this variation is critical in understanding the deeper dynamics at play. Under what conditions has CEA been successful in engaging with key exchange partners? How are the contradictory effects of hybridity experienced in practice? This chapter employs a within-case comparison strategy to answer these questions and shed light on the general phenomenon of hybrid organizations and their effectiveness.

To do so, it is necessary first to define and operationalize "success." I do so in terms of the intended outcomes of CEA's economic exchange with external actors. I consider an exchange successful when it satisfies at least one of the following conditions, and ideally both: it results in an inflow of resources necessary for CEA's organizational survival and action; it results in new investments in energy efficiency

and greenhouse gas emissions, thus achieving CEA's mission. With which external actors has CEA engaged in successful exchange?

There are two categories of exchange partners that are particularly useful to examine in this regard: financiers of the organization and its large commercial and institutional clients. For each of these, I first lay out CEA's overall strategy for engaging with these actors. I then narrate a series of critical cases, highlighting the conditions that seem significant to the outcomes involved. I include a brief treatment of CEA's analysis and interpretations of these cases and the impact these interpretations have had on the organization (a topic I address more fully in Chapter 4). I then use a process of analytic induction to generate an explanation of what accounts for the difference between success and failure across the landscape of cases.

I show that the key problem CEA faces is the *paradox of hybrid legitimacy*: the fact that hybridity expands access to a broader range of exchange relationships, but undermines exchange partners' willingness to commit resources to an organization that defies conventional schemas and familiar types. The decisive conditions for success are those that enable CEA to navigate the paradox by developing alternative pathways to legitimacy. These include offering options for exchange that fit with conventional schemas, mobilization of interpersonal ties, and finding exchange partners who are already accustomed to the public-private hybrid form. In the concluding sections I connect this explanation back to the theory reviewed in Chapter 1.

Financial relationships

There are two types of exchange relationships CEA has engaged with financial partners (providers of grants, loans, and other financial instruments). In this section I focus on those in which CEA sought funding for its internal operations and its management of outreach programs in Cambridge. A second category, in which CEA pre-selected banks who could offer project financing to its clients, are omitted from this analysis; the latter do not involve a direct exchange of resources with CEA essential to its survival.

Strategic approach to financing CEA

As mentioned in Chapter 2, CEA was founded after two staff members of the City's Department of Environmental and Transportation Planning approached Rob Pratt at the Kendall Foundation in June, 2006. The City had set a target in 2002 of 20% reduction in greenhouse gas (GHG) emissions by all activities within the city limits by 2010, and it had invested in some municipal energy efficiency projects (e.g., improved street lights) over which they had direct control. The City's assessment of

2005 emissions, however, showed them going up, not down, and the staffers sought help in accomplishing their goal.

At that first meeting, Pratt suggested that Cambridge conduct an aggressive campaign for energy efficiency in buildings. The campaign would encourage building owners and occupants (households, businesses, institutions) to invest in retrofits that would reduce their energy use. These investments, supported by well-coordinated technical assistance and financing, would save people money on their energy bills while reducing greenhouse gas emissions. As an aspirational target, Pratt suggested a goal of mobilizing $100 million in investment by the private sector through the campaign.

In design meetings with Pratt's colleagues over the ensuing months, the form of CEA took shape as a hybrid organization that would manage the campaign. It would be a non-profit 501(c)(3), closely aligned with the City government, and conducting projects through a group of pre-selected private energy service and financial service firms. These service firms could deliver energy audits, construction, and financing to Cambridge residences, businesses, and institutions. CEA would coordinate their efforts as a kind of "trusted partner" with "the imprimatur of the City of Cambridge."

The founders intended CEA to be revenue driven, funding its operations through two sources based on their successful completion of energy efficiency and renewable energy projects. The first would be a 5% markup fee on energy efficiency retrofits, that clients would pay in return for CEA's oversight, coordination, and publicity of ESCo projects. The second would be a set of payments related to the public benefit "attributes" of EE projects. These attributes included energy demand reduction (through the Forward Capacity Market or FCM)[8] and

[8] The Forward Capacity Market (FCM) arose out of the deregulation of the utility industry in the early 1990's. As part of this process, the Federal Energy Regulatory Commission (FERC) established non-profit Independent System Operators (ISO's), including ISO-New England, to coordinate the newly competitive market. ISO's are tasked with making sure that price volatility in fuels and electricity does not lead to disruptions (e.g., brownouts) or windfall profits at the expense of ratepayers. One key problem that ISO's must solve is that energy providers tend to under-invest in growing their supply capacity to match demand. This is because ISO prevents them from increasing retail rates when fuel costs increase, so suppliers run the risk of losing money in such periods. To avoid this risk, suppliers under-invest in their infrastructure, and grid reliability problems (including massive brownouts) become a real threat when demand spikes occur. The idea of a Forward Capacity Market emerged as a solution to this problem. The FCM is managed by the ISO, who projects energy demand three years out and carries out auctions for future or "forward" capacity. Energy providers are required to either directly maintain enough supply capacity to meet forecasted demand, or to purchase credits on the FCM for virtual capacity. The interesting thing about this system is that surplus "capacity" can be created and sold on the market either through enhanced supply – new

greenhouse gas reduction (through the Regional Greenhouse Gas Initiative or RGGI)[9]. These revenue sources would come from a mix of public and private actors, but followed a fee-for-service logic: they generate revenue according to the size of projects that CEA directly conducts.

Given the intention to generate revenue like a business, the founders initially pursued a debt-based financing strategy – they sought loans from the private sector that could be paid off with interest as the organization grew its fee-based revenues. Any foundation and government grants pursued early on were intended to taper off over time.

The engagement approach for financiers initially centered on Rob Pratt, who served as a founding board member of CEA; Pratt later included CEA's staff in the process as the organization expanded. Pratt was well-known in Massachusetts as an entrepreneur and public financier in the energy and climate field. He had administered a Renewable Energy Trust for the state of Massachusetts, where he had dispersed $40-50M per year in government funds to assist public and private sector developers of renewable energy projects. He was now in charge of climate change grants at the Kendall Foundation. He had personal ties, resulting from these roles, to managers of foundations in the Boston area as well as high net worth individuals and venture capitalists. The results of Pratt and colleagues' efforts to secure financing for the organization are described chronologically below.

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power plants – or through demand-side reduction (DSM) measures. Organizations that provide energy efficiency or distributed generation (e.g., co-generation plants and solar PV installations) can sell credits on the FCM on par with power plants. CEA thus registered itself on the FCM as a provider of demand reduction credits. In theory, it therefore has the ability to auction off any significant, measurable reductions in energy use that it facilitates through its campaign. For further explanation of FCM see http://www.ci.uri.edu/ciip/Publications/Anthony_FCM%20Overview.pdf

[9] RGGI is an experiment in "cap and trade" policy, in which permits for GHG emissions are auctioned by the government and then can be traded in a "carbon market." By reducing the number of permits allocated each year, the government can impose a declining cap on emissions. This model, developed by economists as a way to fairly allocate the costs and benefits of pollution reduction, has proven successful in reducing sulfur oxide (SOx) and nitrogen oxide (NOx) emissions in the United States. During the G.W. Bush administration, however, it was difficult to get traction on a national cap and trade system, so RGGI emerged as a regional effort focused in the northeast United States (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont). Measurable GHG reduction projects can be registered with RGGI and sold to polluters who would otherwise exceed their permitted emissions allowance.

Foundation seed funding grants

In late 2006, after a CEA concept paper and business plan had been formulated through consultation with Pratt's extended colleagues, he started sharing these documents with colleagues at the Henry P. Kendall Foundation, Barr Foundation, and Chorus Foundation. He requested funds to cover CEA's personnel and consultants, marketing costs, office and other expenses. By the end of March, 2007 he had successfully raised $530K ($250K from Kendall, $250K from Barr, and $30K from Chorus). With this funding in hand, CEA hired Deborah Donovan, its first employee.

There are a number of characteristics displayed by these three foundations that made them amenable to funding CEA:

- All are based in the Boston metro area, with varying degrees of regional focus. Barr has the strongest regional identity, with an explicit local mission, "Using knowledge, networks, and funding to build a better Boston for all." The Kendall Foundation has provided grants to organizations across the United States and Canada, but has an explicit focus on New England and the northeast US. The Chorus Foundation has no explicit regional focus.
- All have environment and/or climate change as a dedicated focus area. During the period from 2001-2008, the Henry P. Kendall Foundation funded only environmental projects, and had a stream of money dedicated to climate change initiatives in New England, alongside commitments to landscape conservation and marine stewardship. The Barr Foundation has a climate change focus area alongside education and cultural commitments. The Chorus Foundation focuses entirely on helping consumers get information to enable them to make decisions about their environmental footprints.
- They are connected to one another through the network of Boston environmental elites. For example, Andrew Kendall, heir to Henry P. Kendall and Executive Director of the MA Trustees of Reservations, has been a Barr Foundation fellow and is listed as a contact for the Barr Foundation in public databases (Generate, Inc 2009).
- These foundations make grants almost exclusively to non-profit organizations, either 501(c)(3) tax-exempt charitable organizations or political action organizations like the Massachusetts Climate Action Network.

CEA's founding characteristics matched well with these features. It was a non-profit organization pursuing 501(c)(3) status, tackling climate change mitigation in the Boston metro area, with the personal backing of Rob Pratt.

Debt financing

For a second round of financing, the CEA founding team pursued capital from the private sector. Based on the possibility of drawing revenue from a surcharge on

efficiency projects, CEA wrote an RFP for loan-based financing in 2007 and sent it through its founders' network to a number of financial institutions. CEA only received one bid on the RFP, from San Francisco-based MMA Renewable Ventures (MMARV). MMARV was a project financing firm specializing in solar energy projects[10]. It pursued social and environmental benefit along with economic returns. It had been formed through the acquisition of a renewable energy investment firm by MuniMae, a real estate investment firm serving institutional investors and specializing in affordable housing. MMARV had executed financing contracts with a mix of corporate, municipal, and federal clients for solar energy installations, including the largest solar plant in the United States at Nellis Air Force Base in Nevada (MMA Renewable Ventures 2007). In May, 2007, MMARV had launched a business unit dedicated to energy efficiency projects and it was this unit that responded to CEA's RFP. As an indication of their work, one publicized project financed energy efficiency upgrades and solar installations at 14 Macy's stores (MMA Renewable Ventures 2008).

When MMARV responded to the RFP, they entered negotiations with CEA that ended with MMARV's offer of 16.5% interest rate. MMARV told them that the reason for this rate was that the revenue streams CEA proposed had not been successfully shown in other places. Given the higher risk, they wanted a higher return.

CEA's founders felt that this high interest rate would strain the organization so as to be dangerous to its survival. They also did not like the potential effect of the high interest rate on the perceived replicability of CEA. *"To have 16.5% in a national model that will be written up in your case study and others will be ugly."* CEA withdrew from negotiations with MMARV in January, 2008.

Founders notes

Amid the unfolding credit crisis of 2008, the prospect for other private sector loans did not look good to the CEA management team. In looking for a backup strategy, one that could be executed quickly as the organization was running out of its initial foundation grants, Pratt learned about the possibility of Program Related Investment (PRI) by foundations. PRI investments blur the line between grant-making and capital management for foundations, and are becoming particularly popular in light of social entrepreneurship and hybrid organization trends. In a PRI, the investment side of a Foundation makes a loan or other investment with an expectation of a return, but makes it to an organization whose mission is synergistic

[10] MMARV was purchased by Spain-based Fotowatio in March, 2009 for $19.7 million and now does business under that name.

with its grant making. For the Kendall Foundation, for example, which had a portfolio of grants around climate change, this kind of investment in CEA might make sense.

Pratt worked with a pro bono law firm to develop a promissory note or "founder's note" that could be allocated in notes of $250,000 each for a 10% interest rate. He then visited each of several foundations' investment management groups: the Kendall Foundation and Chorus Foundation, which had already funded CEA through grants; and the Merck Family Fund and the Boston Foundation. All of these foundations chose to participate.

In parallel, Pratt offered founders notes to people in his personal network that he categorized as "high net worth individuals." All of them had exhibited high tolerance for risk (all were principals in venture capital firms) and some degree of commitment to the cause of mitigating climate change. Of the group he contacted, five men (two working in tandem) agreed to invest in founders notes for a total of $1M. Together with the foundations' Program Related Investments, this founder's notes strategy resulted in commitments for $2 million.

In the two years following this debt financing strategy, CEA has had several periods of low cash flow. At these times, CEA successfully requested deferrals on interest payments from the founders' note holders, confirming the low expectation of return among these investors.

Foundation and government grants

The initial grants and loans enabled CEA to establish its operations in 2008 and begin conducting outreach to clients. In doing so, however, it developed a high "burn rate," spending its operating capital rapidly on a combination of personnel, consultants, office expenses, and (prior to the deferral) the interest and principal on the founders' notes. Originally, Pratt and his advisors intended that CEA would generate enough revenue from energy efficiency projects that it could cover this burn rate. Although CEA had some income from EE projects, this revenue was much slower to surface than anticipated, repeatedly putting the organization at risk of running out of cash. Reasons for the lower than expected income are discussed in the section below on C&I clients.

To close the gap between income and expenses, CEA shifted its strategy in 2009 and began focusing on foundation and government grants. This strategy, relying on the organization's non-profit identity, coincided with the American Recovery and Reinvestment Act (ARRA, the federal economic stimulus bill) and its generous funds for energy efficiency channeled through the Department of Energy, the State of

Massachusetts, and the City of Cambridge. *"There has never been a better time in history to be a non-profit working in energy efficiency,"* said one manager in the fall of 2009.

The reality has been a mix of success and failure at seeking grants. The first group of successes in getting grants was with established exchange partners. Between 2009 and 2010, CEA successfully obtained second grants from the Kendall, Barr, and Chorus Foundations in support of its residential and small business outreach program. Each of these involved a proposal written and delivered by CEA staff alongside Rob Pratt who now served as President of CEA.

The second success was CEA's assistance to the City of Cambridge with the city's application for federal Energy Efficiency Community Block Grant (EECBG) money. Block grant funds are allocated to cities around the country, according to a published formula, which would provide $1.1M to Cambridge. City staff can allocate 1/3 of the funds to independent non-profit organizations like CEA. At the time of writing this dissertation, all indications were that $250K would go to CEA to support its outreach program.

Finally, CEA obtained a $180K grant from the Kresge Foundation to contribute to the nationwide development of local energy alliances. This money would fund CEA staff to serve as technical advisors to organizations like the Greater Cincinnati Energy Alliance and other emerging municipal programs.

The failures during this period have been in the form of government grants beyond the city level. The first failure occurred when CEA applied for funds from the federal EPA in summer, 2009. Its application was scored 91 out of 100, with winning proposals ranging 92-95. In a debrief, EPA staff reported to CEA that their application was hurt by the high level of competition in New England, and would have been accepted with a score of 91 in other parts of the country.

The second and most significant failure occurred in a competition for the Massachusetts State Energy Program, for which CEA submitted a proposal for a substantial sum of 750K in late 2009. In April, 2010 they learned that the State decided not to fund any community initiatives, instead awarding funds to individual building projects. Given earlier indications from state officials that their application was among the strongest, CEA had expected this revenue and experienced its falling through as a serious blow.

NSTAR grant

CEA was also able to obtain a special grant in 2009 from its electric and gas utility partner NSTAR. CEA and NSTAR's relationship had begun in 2007 when the utility's CEO provided public support for the Alliance at a press event alongside Massachusetts Governor Deval Patrick. When the CEA Core Group began meeting, an NSTAR representative became a regular attendee. In 2008 when CEA designed and initiated their small residential and small commercial energy audit programs, the two began operational coordination; the utility's energy efficiency subcontractors (CSG, AECOM, and Prism) delivered energy efficiency services to these customers, paid for by NSTAR's regulated energy efficiency subsidy program. NSTAR had not, however, directly allocated funds to CEA to support its community outreach operations.

CEA presented them with a special grant proposal in late 2008. The timing was appropriate. In summer, 2008, Massachusetts had signed the Green Communities Act into law, which required utility companies to invest in all cost-effective energy efficiency: measures that would reduce energy demand for lower cost than supplying the same amount of energy. Complying with this law would require significant increases to NSTAR's efficiency funding, with some analysts estimating as much as a 10x increase in the long term. NSTAR's own plan involved a 42% increase in 2009 and a 300% increase in 2010 from previous years. Ramping up efficiency programs at this pace was seen within NSTAR as a particular challenge. Some saw developing new kinds of partnerships with municipal governments and community organizations as a potential strategy for meeting this challenge. In February 2009, an NSTAR staff member offered his personal perspective.

> *When the opportunity came to work on CEA I jumped on it. I do believe in this project as a model going forward. I don't think you can rain energy efficiency down from above - I think it has to come from the grass roots level. And I think that the community based marketing type of approach will work. I don't think we've quite got all the kinks out of it yet - but I think this approach of bringing this to people from people is going to work much better than [utility by itself]. There is some cynicism in our country, which is well-earned, I guess, but it reduces our opportunity to serve folks even when we have good programs that are cost effective. So by working with their friends and neighbors we are going to be able to do a lot more.*

Thus, in early 2009 NSTAR agreed to grant CEA $51,000 with performance goals based on recruitment of small residential customers (1-4 unit buildings). It is important to note that this grant represents an innovative kind of cross-sectoral partnership. In the context of new regulations in Massachusetts that stand to massively increase utility companies' obligations to deliver efficiency services,

NSTAR had been seeking new ways to grow their program. This grant may prove to be one way that utilities can collaborate with municipal governments and community organizations, so as to bridge the information and transaction costs necessary that impede such growth.

IRS

The last financial interaction worth exploring is with the federal Internal Revenue Service (IRS). As described earlier, CEA has pursued 501(c)(3) status as a tax exempt non-profit organization. The IRS must approve this status based on company structure, policy, and records. While this would not result in a direct financing of the organization, it does create decreased cost (in avoided taxes) and the possibility of new revenue streams (from grants targeted at non-profit organizations). Therefore it is useful to consider the IRS among exchange relationships that affected CEA's financial capital base.

In fact, CEA has faced challenges attaining 501(c)(3) status. As of the time of writing, the IRS had still not approved their application, almost two years after filing. CEA's initial proposal resulted in a round of detailed questions from the IRS, reflecting the latter's concerns. These included:

- CEA's relationships with for-profit firms was the focus of the majority of questions:
    - How CEA selected the banks it will use to finance energy efficiency projects.
    - How CEA's financing services differ from those offered by for-profit financial services, consulting firms, or banks.
    - Any CEA personnel's ties to the for-profit companies with which CEA does business.
    - How CEA selected the energy consulting firms it uses as independent contractors. Also how CEA determined the prices for consulting services.
    - How ESCos are selected, and how CEA works with them.
    - Professional fees paid to other organizations.
    - How construction companies are chosen for referral to customers.
    - Name of each for-profit organization that has a relationship with CEA, and all contracts with those organizations, and what percentage of revenue expected from those relationships.
- CEA's relationship with the City and other nonprofit organizations:

- Details of CEA's relationships with a range of partners it had mentioned in its application, whether any payments are made to these organizations, and how such payments were determined.
- CEA's relationship with the City of Cambridge (with whom do they work, how do CEA's services compare to the City's services).

- Other questions about CEA's revenue and financial management:
  - How CEA would accumulate and sell carbon offset, carbon credit, energy credit, and other "attributes" of energy savings.
  - The percentage of resources CEA is dedicating to public education programs.
  - Board of Director composition, resumes, and compensation arrangement with CEA.
  - When CEA operates at a loss, how will it finance its tax-exempt activities.

We can summarize these concerns as being about how CEA, as a non-profit organization, might be tied to (and potentially benefiting) business interests in its network. By contrast, the comparable Greater Cincinnati Energy Alliance, which planned to finance itself primarily through government grants and operate through a network of community organizations, received approval in five weeks during the summer of 2009. In the absence of CEA's own 501(c)(3) status, it has had to receive grants through a partnership with the Cambridge Health Alliance, a quasi-public hospital group with executives on the CEA board.

CEA's interpretation and internal impacts

Amid these financing deals, CEA's staff have recognized an increasing focus on grants, and even a shift in the basic strategy and identity of CEA, which had originally intended to operate as a fee-for-service business. At the time of writing, the organization had come to derive the vast majority of its revenue from foundation and government grants. Of the three full-time staff members, two of them were dedicated to the small residential program that is not a source of fee revenue. Discussions of current and upcoming government and foundation grants came to dominate the first half of each core group and board meeting by summer, 2009. Recognizing the shift in revenue mix, in fall 2009 executives began discussing the fact that CEA was *"coming to look more like a traditional nonprofit."* At the same time, they recognized that the IRS's concerns focused on the business-like dimensions of CEA and its for-profit partners. Thus they considered re-filing their request for 501(c)(3) status with the IRS, starting anew with a portrayal of the organization as a grant-driven non-profit organization primarily doing public education and outreach about energy efficiency. In the end they decided to continue

their existing process with the IRS in the hopes that the process might eventually start moving more smoothly. These processes of change are explored more fully in Chapter 4.

Client relationships

In parallel with CEA's attempts to secure resources from financial partners, it has pursued fee-based revenue from clients; this is the second category of exchange relationships in which we can see CEA's variable degrees of success.

Strategy for client engagement

CEA originally segmented its market into four categories – small and large residential, and small and large "C&I" or commercial and industrial, which includes hospitals, schools, universities, community centers, and other non-profit organizations we might call institutional. Large C&I (500 kW of electricity usage or more) and large residential apartment buildings (50 units or more) include the most substantial energy users, and therefore the largest potential projects and fees. While CEA decided to allow its ESCo partners to approach small residential and small business customers on their own, the more substantial clients merited an in-house client management approach. CEA initially built a list of 150 prospective large clients for its energy efficiency services. Of these, 77 were large enough to merit some attention by CEA's three part time client managers, and came to be listed on their internal tracking worksheets.

Among the large residential clients, CEA soon realized that it faced a perennial challenge in the energy efficiency industry known as the split incentive problem. In rental apartment buildings, there is a split incentive between landlords who are responsible for energy efficiency improvements and tenants who pay the electricity and heating bills. Even if substantial opportunities for energy efficiency exist, there is little incentive for owners to invest. Renters are for their part highly fragmented and difficult to organize, and often do not have the rights to modify central building systems. As a result, unless there are substantial incentives on the table from utility companies or government programs to support energy efficiency investments, "multi-family" large residential projects often stall (Brown 2001; Howarth and Andersson 1993; Levine et al. 1995; Biggart and Lutzenhiser 2007; Granade et al. 2009). This agency problem may be overcome by promotion of a "green lease" (Williams 2008) but after an initial exploration of the issue, CEA chose not to make it a focus. This was in part because the launch of CEA's program coincided with a period in which the utility company NSTAR discontinued its multifamily incentive program. Further, within Cambridge the relative contribution of large commercial and institutional energy use (biotechnology companies, universities) was

substantially higher than that of large residential buildings. Thus CEA decided to de-emphasize its large residential program. Like the small residential and small business programs, it handed the effort to one of its ESCo partners to manage. The exception was the stock of public housing operated by the Cambridge Housing Authority and Housing Rehabilitation Inc, since these could be treated as institutional clients and often paid for the energy bills of their occupants, thus eliminating the split incentive.

Therefore what remained was a list of 46 high priority C&I sites, to which CEA began applying a full "engagement model." In the standard protocol, the City Manager and Assistant City Manager – well-established political figures – make the initial contact to clients on CEA's behalf. They exhort clients to take part in a community-level effort. They ask for a meeting in which personnel from the client organization – often an executive and a facilities manager – sit down with a representative from CEA and one of CEA's ESCo partners. If instead CEA or its ESCo partners have a direct relationship with staff in the client organization, they enter conversations without the involvement of the City officials. CEA emphasizes at these meetings that the ESCo partners have been competitively selected, a procedure designed to portray CEA's good faith in offering high quality service.

Among large C&I clients, between January 2008 and April 2009, 10 went through the engagement process, and brought CEA's ESCos into their facilities for preliminary energy audits and proposals, free of cost. Several others engaged with CEA to seek other kinds of support with energy management, such as consultation on energy efficiency strategy or registration of prior investments with the FCM, using CEA as an agent.

The next step in the process, however, would be to commit to a detailed investment grade audit (IGA) and implementation of energy conservation measures. That step involves clients' up-front investment (using various kinds of financing) with payback from energy savings over time as part of a performance contract with an ESCo. CEA would take a markup on construction costs – originally planned as 5% then revised to 3%. This was framed to clients as payment for the following services:

- CEA's oversight of the ESCo projects, to ensure quality work and exhaustive/innovative scope (e.g., investigation of on-site renewable energy opportunities). Their intention was to serve as a trusted partner that could counteract what they understood to be a general mistrust of energy services businesses in the wake of Enron and 1980's era energy service businesses that failed to deliver the energy savings they promised.

- Publicity of energy investments as part of CEA's campaign, thus raising their clients' visibility to stakeholders in the community.
- An opportunity for corporate social responsibility and citizenship through support of the ongoing community campaign, particularly CEA's outreach to small businesses and homeowners whose efficiency projects would not generate substantial fees.

As of May, 2010, however, only one client had advanced to the IGA stage, more than two years into earnest effort at outreach to these organizations. Four other clients have moved forward with revenue-generating business relationship that do not include ESCo projects.

In the section below I review 11 of the cases in which CEA has conducted at least part of its engagement model with Large C&I organizations. I omit large residential, small residential, and small business from this analysis for the following reasons. First, small residential and small business customers are not managed on a one-on-one basis with CEA client managers, nor approached by senior City staff as part of the engagement model. Instead their interactions with CEA were managed directly with one of three energy service companies (Conservation Services Group for small residential, and AECOM and Prism Energy Services for small commercial). Thus they provide a less clear window through which to understand CEA's direct interaction with its external exchange partners. Second, the large residential customer interactions are difficult to evaluate, both because of the split incentive problem described earlier and because of CEA's relative under-emphasis on this market as a result of the split incentive problem.[11]

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[11] Although I focus here on large C&I clients, it is worth noting that results were no better in other market segments, as illustrated in the small residential sector. Here CEA has focused on owner-occupied, small residential buildings containing 1 to 4 units, of which it identified 6000. These are customers who usually have technical opportunities for retrofits, can get a free energy audit and subsidized retrofits through the utility company, and who don't face the split incentive problem between landlords and renters. August 2008 marked the beginning of CEA's outreach to this market, with significant efforts at door-to-door canvassing in July and October, 2009.

CEA has some indications that these efforts worked; for example during the canvass months, they experienced significantly more contacts and requests for energy audits through their web site (e.g., a jump from 25 the month before the canvass to 181 the month of the canvass). Data from the utility company corroborates the overall pattern of increase. For example, the total number of home energy audits in Cambridge from January to August of 2008 (just prior to CEA's program) was 86. During the same period of 2009, after the program had initiated, the number of energy audits increased to 138, a 60% increase. This increase was, however, consistent with an overall trend in the state of Massachusetts, in which the statewide total of energy audits increased 43% between the same

Among the C&I organizations that CEA engaged, I chose the 11 for which I have enough data from observations, documentary sources, and/or interviews to offer a satisfactory explanation. For those organizations that preferred to remain anonymous, I provide a Greek letter designation. If it was permissible to identify the cases I have done so. I have organized the three cases into three groups: extended delay / unsuccessful cases; moderate delay / moderate success cases; and success cases. I use the word "delay" here to recognize that outcomes could eventually change, but that within my window of observation there was relatively less progress toward CEA's intended outcomes. The cases are summarized in Table 7 at the end of this section.

Extended delay / unsuccessful cases

Alpha

Alpha is a non-profit institution with a multi-building campus in Cambridge. Traditionally this category of client is a good fit for Energy Service Companies (ESCOs) because they have high energy use, occupy buildings they own, have limited access to capital, and have under-resourced in-house facilities management. Thus it was among the first organizations that CEA approached as it launched its C&I outreach program. Alpha went as far as conducting free preliminary energy audits of a few buildings in its portfolio with ConEdison Solutions, one of CEA's ESCo partners. These audits uncovered several opportunities for energy efficiency investment, with energy savings that would pay back the construction investment within 7 years (a 14% simple ROI) while also providing comfort benefits to building occupants. Alpha declined to go further with CEA, however, choosing to roll the audit findings into an internally managed program of energy efficiency investment rather than work with an outside Energy Service Company (ESCo).

In explaining this decision, one executive said that the financing CEA offered (through its financial partner Bostonia Capital Group) was at interest rates higher

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periods. This probably reflects a general increase in awareness of energy and environment issues and enhanced outreach by the utilities.

If we attribute the marginal 17% increase in residential energy audits in Cambridge to CEA's efforts, this is only 22 audits over the course of a year. These represent a very small fraction of the 6000 single-family homes, which in turn is a fraction of the 43000 households in Cambridge, which in turn only accounts for 18% of the city's GHG emissions. These households thus represent around .009% of the Cambridge GHG footprint. CEA's original goal was to reduce the Cambridge GHG emissions by 10% by 2011; the residential sector activity is unlikely to contribute significantly to this goal.

than Alpha could obtain on its own, particularly if it relied on donor funding to support efficiency improvements.

> *I don't think there is any ESCo, there is no bank, there is nothing that can do it more cheaply than Alpha, because of our structures and our ability to do it ourselves. We can borrow money cheaply and cheaper than most of those people because of tax exempt, everything. So I think in some particular dislocations of the market, that may not be true, and we may not be allowed to go to capital markets and borrow or do some other thing... so there may be some instances where we benefit… but it's like giving 30% of company to private investor, you are giving up a lot of potential. So it's the same thing here. If you let an ESCo do it, they will do it, they have the capital base, but the reality is the cost would be probably at least 50% more than what we could do, if we set that project.*

Absent an offering of competitive financing, CEA's primary offer through its ESCo partner was the technical capability to deliver efficiency retrofits quickly, efficiently, and rigorously. Alpha acknowledged this.

> *[I am interested in] the rigor and measurement CEA/ESCOs bring to the endeavor as well as the potential expertise and additional bandwidth/capacity. This is a positive value that in some instances/projects could overwrite the pure financial economics. The best of both worlds is if they could do this, manage the project and Alpha had the capacity to finance it.*

On this point, however, another Alpha executive said that developing the internal capability to deliver efficiency might pay dividends in the longer term, because their staff could uncover and take advantage of further opportunities. *"We want our project managers to take control."*

After this initial failure, CEA attempted to use its political network to convince Alpha to re-engage with CEA. Thus its identity as a hybrid organization with political connections in the City was not lost on Alpha. Still, they initially did not respond. One Alpha executive said,

> *This has been the year of people coming to me about CEA in impressionistic way. They get brokered by people all the way up to [board members]… We can get some good stuff going, whether it involves CEA or not. I got frustrated with the "why aren't we doing anything with CEA" questions lobbed in. I'm not committed to CEA. They need us as a marquee name - and need us in their portfolio.*

In part, this quote reflects CEA's lack of an established track record and its liability of newness (Freeman, Carroll, and Hannan 1983; Singh, Tucker, and House 1986). Nevertheless, Alpha's facilities staff members who were sympathetic to CEA's mission did continue meeting with CEA, pursuing opportunities for efficiency in buildings that would not be covered by Alpha's internal efficiency programs. These

conversations, which included additional walkthrough audits, did not, however, bear fruit for CEA. The decisive conditions continued to be Alpha's belief that it could secure better financing and conduct the necessary energy efficiency investments internally, once they were identified by CEA's ESCo partners.

Alpha facilities staff and executives have said that even though they have not moved forward with an investment project in partnership with CEA, they do hope that the organization might help publicize its internally managed efficiency efforts. And they see a potential for Alpha's work to set an example that could set a benchmark for public policy requiring energy efficiency investment. CEA's internal debate about how to approach opportunities like this is the subject of Chapter 4.

Beta

Beta is an owner-occupied non-profit institution with a single building campus. The City Manager reached out to Beta on CEA's behalf. Beta then agreed to do a preliminary energy audit. In parallel they commissioned a similar audit with a traditional ESCo, then passed the results of both to a sustainability committee composed of internal staff and interested board members. CEA's proposal offered an aggregate payback of 7 years for a substantial portfolio of energy-saving investments. This offering was similar in technical detail and return on investment to that proposed by the traditional ESCo. Beta chose the latter, however.

CEA's attribution was that the decision was made on technical grounds, and they saw this as Beta ignoring the value of a community campaign.

> *[CEA staffer] attributes the problem to Beta's reliance on the facilities people "in the boiler room" to make decisions: "If [Beta staff member sympathetic to CEA] had been on the selection committee they might have made a decision more based on community engagement. There is a problem in being labeled as a non-profit - people say you are mission driven and that's code for we don't need to give you any money." (Field notes, 4/1/2009)*

In my interview with a representative at Beta, however, a more nuanced picture emerged. He explained:

> *I honestly haven't seen the Cambridge Energy Alliance model presented in a way where I… totally get it… I wish I understood it so I could have explained it to folks around here in a way that might have changed things.*

Thus, Beta's problem with CEA was a degree of confusion or incomprehensibility, perhaps owing to their hybrid organization and approach. For this reason, the value of participating in a community campaign was lost on the review committee as it compared CEA to the traditional ESCo. The interviewee continued:

> *[The review committee] were looking a bit at apples to apples. Had it been apples to oranges, they would have said CEA is providing us with oranges, that's pretty interesting. As it was, that didn't show up as issue… And, it comes at 3% cost.*

CEA got coded as an ESCo, evaluated as such, and failed the test. Beta did, however, roll the projects suggested by the CEA audit into their project with the competing ESCo. This means that the scale of efficiency investments at Beta was increased by virtue of CEA's participation in the process. Further, Beta saw CEA as an avenue for publicizing their efficiency investments.

> *OK, so you didn't get the job. But if you look at your highest level goals around reducing the greenhouse gas footprint of Cambridge, we're still achieving that goal. We haven't contracted with you but we have contracted with a reputable firm and we are doing things. You know, I don't mean this as consolation prize, but at the highest level… the reason for your existence is being addressed by the path of action that we're taking.*

CEA's debate about how to understand this outcome (where they have indirectly catalyzed energy efficiency investment without being able to capitalize on it) is explored in greater depth in Chapter 4.

Epsilon

Epsilon is a non-profit institution with a multi-building campus. CEA reached out to Epsilon in mid-2008 via the City officials and met with Epsilon's Director of Community Relations as well as its facilities staff. A CEA client manager then met repeatedly with facilities staff and CEA's ESCo partner, ConEdison Solutions, to conduct a walkthrough audit and prepare a portfolio of building retrofit investment opportunities. The proposal totaled $6 million in investments with $760K in guaranteed annual savings (close to an 8 year payback period).

Through the process of developing this proposal, it became clear to CEA's client manager that the facilities staff were interested in moving forward but were concerned about losing control of the construction and investment process if they contracted out the entire list of investments to the ESCo. Thus CEA created a special arrangement in which Epsilon would get a revolving line of credit with its financial partner Bostonia Capital, as well as ongoing access to the technical staff of ConEdison Solutions. Epsilon facilities staff would be able to approve and oversee each project in an ongoing way, with energy savings rolling back into the revolving line of credit with Bostonia. This represented a hybrid between a traditional ESCo energy savings performance contract and an internally managed process.

Nonetheless, after 5 months of deliberating about this opportunity, Epsilon decided not to move forward with CEA. Instead they would self-finance their energy efficiency investments and manage them with internal staff.

In CEA's internal discussions about the Epsilon case through this process, it was used as another cautionary story about "getting stuck in the boiler room," that is, having only the facilities staff as a point of contact.

> *Person 1 – We said we would link community as a driver to these organizations. If you look at our cases, we were unable to do that. With Epsilon, [Assistant City Manager] was terrific. Director of community relations attended. That seemed very good. But not administrative VP.*
>
> *Person 2 - We tried to get him, I'm sure.*
>
> *Person 1 - We did try. We had facilities people. I did try to keep link with community person. Shunted into facility and ESCo and getting project done. Community person drifted off. Clearly would have been better to work with her. But even she was notch too low. We didn't put community in front of them. We need bandwagon, put in driveway, CEO sees it, and we were never able to show that. Epsilon would have been easy place. (Field notes, 4/28/2009)*

Where the executives or community relations staff of an organization might have a strategic motivation to participate in a community energy campaign, the facilities staff are primarily motivated by a desire to maintain control of their facilities. I was unable to interview Epsilon staff for validation of this hypothesis, but it does fit with similar conversations in Alpha and Gamma.

From CEA's perspective, this represented a missed opportunity for Epsilon because the pace of projects is likely to be much slower using only internal resources, and as a result they will waste energy and money in the interim.

> *They could be saving $750,000 per year and fund completely out of savings but they aren't doing it. Elevator light bulbs this year…*

Zeta

Zeta is a non-profit institution with a multi-building campus that included a number of aging buildings with high likelihood of energy efficiency retrofit opportunities. CEA reached out to Zeta in the early stages of its large C&I engagement work, but was not able to get a response. CEA then asked the Cambridge City Manager to call Zeta and after several attempts, convinced the Zeta executives to call CEA.

The initial reluctance seems to have resulted from the fact that Zeta was already in conversations with two other firms that provided services related to CEA's: an energy services company that directly competed with CEA's chosen ESCos; and a

firm that assists clients with Demand Response, a particular technology that shuts down equipment during times of peak electricity pricing.

Zeta's VP of purchasing called, and CEA gave their pitch – that they would provide comprehensive energy services, that Zeta would be part of a community campaign including neighboring residents and businesses, and that their work might be complementary with the service providers they had already engaged. Zeta agreed to meet with CEA.

The first meeting, in November, 2008, included Zeta's administrative VP as well as its senior facilities staff. CEA brought in its new CEO, a client manager, and an energy consultant. This team convinced Zeta to move forward with sharing its utility data and moving toward a preliminary energy audit of the campus. In a CEA Core Team meeting, a CEA staffer gave an optimistic update.

> *Other client with progress is Zeta. [CEA team members] met with them in November. Then [client manager] meeting with them in two days. Eager to get started with… antiquated steam system they want to replace. Can get started right away with project there. Interested in [group of buildings] and measuring and monitoring to get [occupants] doing contests. Their culture is not tuned to energy and environment and administrators want to push that agenda forward. And other part of Zeta is [a cluster of small buildings] and we will get in there. Weather sealing and insulation, old boilers, all that kind of stuff. That could be good opportunity. (Field notes, 12/2/2008)*

CEA's client manager started by reviewing the campus buildings with the facilities staff to understand where opportunities for EE retrofits might exist, and what technical capabilities would be needed to address them. Based on this initial assessment, CEA's client manager chose one of the three ESCos from among its pre-qualified group. That ESCo did a walkthrough audit of the various facilities and a rough technical specification for some of Zeta's high priority projects.

The audit uncovered substantial opportunities for investment, and the Zeta facilities staff became convinced that CEA had a superior offering to the ESCo with whom they had been previously working.

CEA's client manager who managed the ongoing interaction with Zeta became confident that a deal would be signed for an Investment Grade Audit (IGA) and energy retrofit construction.

> *[CEA staffer] comes to talk. He first says that [client manager] told him the Zeta gig is a go. Crossing his fingers. (Field notes 12/12/2008)*

These initial phases were viewed by CEA staff as a real success of its cross-sectoral model. Zeta had not been interested in CEA's energy services until the City

government officials made contact and CEA convinced them of the value of participating in a community campaign.

> *[CEA staffer] says that this is a success story for the CEA model because we got the meeting after [City Manager] Bob Healy badgered the president of Zeta and said we are great to work with. (Field notes, 11/13/2008)*

As an organization with a reputation for positive relationships with its neighbors, Zeta was seen as a particularly good fit for this offering. The subsequent progress on the technical issues of energy efficiency, and the scoping of projects beyond those that CEA's for-profit competitors had achieved, was also seen as a success.

> *Of all customers, Zeta appreciates residential and outreach component more than any group or institution we've talked with. To them it's a value-add; the things they can do with CEA they can't do otherwise. Community, and outreach and bragging. [Larger potential client] doesn't need us for publicity. Zeta arguably does. (Field notes, 11/5/2008)*

In parallel, however, the financial crash of late 2008 had started to take its toll on Zeta, which experienced both decreased revenues and decreased income from the financial market investments of its endowment. In February, 2009, Zeta suddenly shifted direction, saying they did not want to pursue the projects that had been identified. When CEA's client manager inquired more deeply with the facilities staff, he learned that availability of funds was the key issue.

> *The VP, in a meeting with us on Monday, suddenly said she's not interested in the boiler, without explanation… I had to have a conversation with the facilities guy… He had us in over Christmas, moved up meetings, now suddenly not interested? We looked at rest of campus - there are opportunities. But can't get [ESCo] interested in it. Bill said it's the money. I said, that we can deal with. (Field notes, 2/11/2009)*

He then re-engaged with the administrative VP to talk about ways CEA might be able to help with financing the project, since this was a challenge anticipated by CEA's business model. Once it became clear that any financing option from CEA would either involve debt on Zeta's balance sheet or an expensive contractual commitment amounting to off-balance sheet financing, Zeta pulled out of conversations with CEA.

> *Her perspective was that even going off balance sheet, if it's a financial obligation that has to go off revenue or cash flow it's the same for her given her concerns. (Field notes, 2/13/2009)*
>
> *There are some very good projects there that are perfect for performance contracting even if they don't decide to do something with central plant. That project seemed to be undermined completely by their perceived financial issues. The operations people were extremely enthusiastic. (Field notes, 12/7/2009)*

The Zeta case is one in which CEA's offering was seen as attractive at first, but the project did not move forward because of exogenous changes in the economy and financial position of the client.

Moderate delay / moderately successful cases

Gamma

Gamma is a non-profit institution with a multi-building campus. CEA worked with the City officials to approach Gamma's senior staff in charge of facilities management. Gamma responded with a mixed strategy. On some facilities Gamma has implemented energy efficiency projects with no direct involvement from CEA, as part of an ongoing program of building retrofits. For a selected set of two facilities, Gamma invited CEA to conduct free energy audits and propose an Investment Grade Audit and comprehensive project. In one of these facilities, CEA's ESCo partner was able to propose measures with a 7 to 9 year payback period, or an 11-14% ROI on $1.5 million of investment. In the other facility, CEA proposed a high priority tier of measures with an 8 to 9 year payback period and a set of longer payback investments with ancillary benefits to occupant comfort and building system reliability that would push the payback period to 15 to 20 years on roughly $2 million in investment.

Gamma's initial reactions to this proposal were positive, and facilities managers gave indications in meetings I observed that the organization was likely to move forward with the deal.

> *[Gamma rep at start of meeting]: Great job. We're calculating things the way you are. Lots of information to help us see what makes sense. Looks like less than 10 year payback, and 20% off GHG footprint. [everyone smiles and tone is very positive; CEA client manager claps his hands and ESCo engineer blushes].*
>
> *[Gamma rep at end of meeting]: My take is I think you guys have done what we were looking for. Achieves the goals we need. Lot to understand on agreement, need to understand what risk, what that looks like. I will digest info you send to us. We will have one meeting to talk about contract language. (Field notes, 5/15/2009)*

Like Alpha, however, Gamma subsequently broke off the engagement and decided to conduct the recommended retrofit projects with their own internal construction and financial resources. My interviews revealed that one reason, similar to Alpha's, was a feeling that CEA was not offering project financing better than what Gamma could access on its own. Another stronger rationale, however, was building managers' desire for internal control, particularly given what they saw as a problematic reputation of performance contracting (the arrangement in which ESCo's conduct portfolios of projects for which they guarantee energy savings).

Gamma interviewee 1: We're not going for performance contracting. What's behind that… probably part of it is financing. But also, performance contracting doesn't have best reputation in the world… Performance contracting can be very complicated and expensive in terms of M&V… You don't always get results you had hoped for. So it's something that most people feel like, "Let me put something in, let me get a rebate, and then I'm done with this." They do what they want to do and get good results. And perhaps it's not quite as comprehensive, but I think it ultimately it gets you to the same goal. And then you're not tied up with some outside organization - praying that you're going to be able to achieve the savings that you had, and therefore pay them… I don't think people want to be that involved with an external source. But that's just my gut.

Interviewer: They'd rather have the autonomy to manage it internally.

Gamma interviewee 1: Yes. And they are doing a good job. We have seen considerable drop in our electric demand over the past year.

Similarly:

Gamma interviewee 2: Generally when I've talked to facilities managers about these kinds of things [ESCos and performance contracting]… eh, they're not so sure. It's a multifaceted problem in a sense. But I think it's rooted in the fact that facilities managers are a pretty cautious lot. And sometimes not as technically proficient in some of these areas as they should be. Therefore, not knowing that they can manage something like this as well. Because maybe they don't fully have the skillset, therefore they are trusting someone to do the right thing.

One Gamma interviewee also referred to the confusing nature of CEA's structure and identity as a hybrid organization.

I'm not sure they are as coherent as they should be. I think there is a little bit of an identity crisis here. Maybe that's too strong a word, but... the idea, is it part of the City, is it not part of the City? What is this thing? The perception among potential customers, residential or commercial, about what's the business model… All of that has seemed a little fluid from the beginning… Because City has arms-length relationship with it through Cambridge Health Alliance. Although [City Manager] Bob Healy is on the board, he has to be very clear, very careful about how much of this is the City, and putting City at risk, and so forth. So there is kind of this odd position of whether it is or isn't. And at the same time it's not a pure competitive private sector consulting energy development operation… So it does have this kind of odd... so my guess is to people who don't really understand how all these things work, they kind of wonder, "well, what is this thing?" Is it an agency of city? Is it not? It's non profit, but it has to make own money. So I think there's... ***the business model has that challenge in terms of understanding what this thing really is. And ultimately therefore how people perceive it.***

> *It has become even less clear to me over time… And the business model has changed for variety of different reasons. So the concept is still there, but the details are quite different. And the identity, I think, is affected by that. That has been part of the problem.*
>
> *I think even that lack of clarity has affected the way [Gamma building managers] look at this as well. Are we doing this because we want to have good relationship with the city? What's in it for them? What's in it for us? How does this thing work? Not having that quite as clear as it might be. I do think that's an ongoing challenge. I don't have a good answer for it.*

From CEA's standpoint, these attempts to partner with Gamma on facilities investments represent an important failure. The intention of their hybrid model was that their non-profit status and connection to the City would help provide oversight and lend credibility to ESCo performance contracting, but in this case it was not able to overcome the bias for internally managed efficiency projects, and its hybridity generated confusion that seems to have undermined exchange.

In parallel, however, CEA has had one successful exchange with Gamma, in which Gamma did a quasi-charitable contribution to CEA of trade-able credits for the Forward Capacity Market (FCM; see earlier footnote in this chapter). Gamma had made significant investments in a combined heat and power cogeneration plant, but had not registered the asset with the FCM. Gamma decided to work with CEA to register the assets retroactively and donate a portion of the ensuing revenue to CEA. Although this revenue stream does offset CEA's financial challenges, it has two distinctive features: first, it does not contribute to new energy efficiency investment; and second it represents a kind of donation by a C&I organizations more in line with a charity logic than a fee-for-service logic. The exchange conforms to an existing schema: contribution to support a community-based non-profit organization.

Like Alpha and Beta, Gamma has stated that they want all of these activities to be considered part of the community campaign to promote energy efficiency and demand reduction, and publicized as such. These comments and associated issues are explored further in Chapter 4.

Eta

Eta is a non-profit institution with a single building campus. Because of Eta's activities in the life sciences it is part of the Massachusetts Biotechnology Council (MA Biotech). MA Biotech had originally been formed as a political lobbying organization for the life sciences sector, seeking legislation such as tax breaks that would help promote life sciences businesses in Massachusetts. In the early 1990's, MA Biotech started to become an umbrella for other aspects of collective action by the life sciences firms, such as group purchasing of laboratory equipment from

manufacturers in order to obtain better pricing. Through these activities it developed a network of purchasing staff at life science firms and institutions, making it an ideal contact point for organizations like CEA offering professional services. In November, 2008, CEA gave a presentation to MA Biotech about its offering as a community initiative and a provider of energy efficiency services, and met the purchasing director for Eta at that presentation.

The purchasing director then invited CEA to meet with senior Eta staff, including herself, the head of facilities, an architect, and the head of Human Resources (HR). The participation of the HR director is particularly interesting, and reflects what appears to be a general phenomenon in the life sciences sector. For these organizations, by far the largest operating cost and perceived driver of business value comes from recruiting and retaining world-class scientists. These scientists tend to have strong concern for environmental issues, making them an important stakeholder influencing sustainability strategy. If life science companies reduce their greenhouse gas footprint by working with CEA, it gives the company a good story to tell their employees. There are also opportunities to engage employees directly in educational efforts about energy and environment and in behavior change campaigns. These citizenship initiatives are perceived to have spillover effects in terms of employee commitment and productivity. As one interviewee of a neighboring biotechnology firm said,

> *In the last couple of years especially, in the last two months, two weeks, two days, there's all of this out there about climate change and greenhouse gas reduction and so on. So today it's hard - it's different than it was 10 years ago. Today it's already on people's minds, so just from that alone, you need to address - you need to address it, 'cause your employees are thinking about it. And if you want to remain competitive with employees, I would think you would want to consider what's on their minds and what are they - what are they concerned about.*

An Eta informant said something similar about Eta's choice to engage with CEA in the context of its own employees:

> *I think we were hoping to do two things. One is, you know, we have young population at Eta. And that, to attract the best and sometimes the youngest scientists, we want to have, we want to be the kind of organization that is again sort of cutting edge just like the science. So there was an interest in the mission of Eta that we are interested in the latest technologies. The second of course was cost savings. So the idea of co-generation - the idea that it is incredibly expensive to implement but you will see at some point that it will pay for itself.*

On this basis, Eta agreed to have one of CEA's ESCo partners conduct an energy audit of its building, a proposal which included opportunities for energy savings that Eta found attractive. To help finance the project, they decided to apply for

government funds released through the American Reinvestment and Recovery Act (stimulus bill). When their grant was not approved by the government, the project became stalled as it awaited approval through the standard budgetary process. An Eta staff member did acknowledge that "they [CEA] were a catalyst for us at Eta to start thinking about what is our future." At the time of writing, however, it is unclear whether Eta will make any significant investments with CEA.

City

The City of Cambridge, the original founder of the Cambridge Energy Alliance, itself has a substantial portfolio of administrative buildings, schools, and public works facilities. Municipal energy use accounts for approximately 3% of the City's total greenhouse gas emissions and 78 MW of energy demand, which places it among the largest energy users in the city. By CEA's initial estimates the City could achieve substantial efficiencies through a $13 million bundle of projects. Such projects would be an important source of revenue for CEA – with its intended markup of 3%, this would mean $390,000 for the organization, plus the value of credits from the Forward Capacity Market and Regional Greenhouse Gas Initiative, which could mean on the order of $70,000 per year to be divided between the City and CEA. As importantly, it would show the residences and businesses in Cambridge that the City is "walking the talk" and trusts CEA to work in its own facilities.

Nevertheless, the enticing prospect of municipal projects has run into repeated obstacles related to procurement laws at the city and state level. Because CEA is a separate organization from the City, it could be categorized as a subcontractor. Any contract with CEA involving a transfer of funds from the City to CEA could therefore require competitive bidding by CEA alongside other entities. Although the City Manager may have had the power to simply move forward with a contract and made early commitments to do so (since energy performance contracting enjoys specific exemption from some procurement rules), he escalated the question to the State Inspector General. Doing so ultimately resulted in the need to conduct a Home Rule Petition and special legislation at the state level. This legislation allows the City and CEA to maintain their legitimacy amid a context of recent procurement scandals in Massachusetts. A City official explained:

> *I think… the whole process will now be much better served for having made this choice. I think that we can move down the line with complete legal legitimacy without people saying, well, who the hell is CEA, I could have done that stuff. You don't need to turn a positive into a negative… and in this world… the current view of public sector is very cynical. And I guess in some cases for good reason. But in other cases, I guess it's easier to be negative than be positive and accomplish something. Easier to criticize it…*

Once we looked at anti-aid amendment and how it was envisioned that this would work I said, in current law, this can't be done without some competition. And the makeup of CEA itself administratively… the reality is it's not a big organization. You're heavily reliant on consultants, which is how it should be, and I understand that's the way industry needs to work. It doesn't blend itself easily for a public sector contract with a small entity that then is going to get a big number that it is going to do as pass through to consultants or almost a pass-through with a 10% administrative charge. There are still some details to be worked out.

But the symbolism, real and perceived, of being… blessed… whatever the right word is… by legislation makes it easier to move forward.

While the special legislation did pass in December, 2009, this was long after the Q1 2008 date by which CEA had planned to book revenue from municipal projects. In the process, the petition has also gradually been watered down, so that CEA is able to provide "owner's agent" consulting services, but not to execute contracts for the much larger energy efficiency implementation projects. The net result for the City has also been a delay in municipal project implementation.

A useful contrast to this case can be seen in Cincinnati, Ohio. There, the city government has been able to move faster by operating independently on municipal infrastructure projects, rather than through the cross-sectoral Greater Cincinnati Energy Alliance that was based on the CEA model.

Nevertheless, in the end there is a contract in place for owner's agent services by CEA. Under this contract CEA will provide strategic guidance to the City in prioritizing investments in its portfolio of buildings as well as some oversight for retrofit projects. It will generate some revenue for CEA, even if not at the level originally hoped (i.e., if CEA were able to arrange actual construction projects and take a percentage of project size). This contract represents a case of persistence on the part of both the City and CEA staff through political and bureaucratic challenges in order to craft the special legislation and a way forward. This persistence is in part a result of the close ties between City officials and the CEA organization. The twice-monthly "core team" meetings – in which staff report on CEA activities and discuss current issues – include three City staff members. Progress on the Home Rule petition was discussed at nearly every core team meeting I observed, with an eye toward finding ways that CEA and City staff could contribute to its progress. Further, the City Manager sits on CEA's board, and attended the quarterly meetings at which the Home Rule Petition and the prospect for municipal energy efficiency projects was also a regular topic of discussion through the legislative process.

Successful cases

CDM

Camp Dresser McKee (CDM) is an environmental consulting and construction firm serving private firms, non-profit institutional clients like universities, and municipal, state, and federal governments. CDM was one of the few clients, and the only large C&I client, that reached out to CEA directly. One of their staff members had heard about CEA at a sustainability-related event put on by the City of Cambridge, and recommended that CDM's facilities manager contact CEA. That facilities manager arranged a meeting of a few senior CDM staff with CEA's CEO and client manager. After that first meeting, CEA brought its ESCo partner ConEdison Solutions to CDM for a walkthrough audit of its building.

The ESCo's findings were presented at a meeting of a dozen senior CDM staff members that I observed. In the meeting, the value of CEA's offering was appraised along three dimensions that I could discern. The primary dimension was financial return on investment, within the constraint that CDM is a lead tenant but not a building owner.

> *We don't own - we are tenants. Only one, so not democratic but... on other side only have 10 year lease. An 11 to 12 year return on investment is harder for us to see as something to expend funds on. But we may not move, so may be good to do, and we want to lead. (Field notes, 3/4/2009)*

This quote points to a key risk for CEA of engaging with CDM: landlord-tenant split incentive issues could have overwhelmed the return on investment for either party. Because CDM controls the vast majority of the building, however, and was at the beginning of a lease period when they engaged CEA, they still had an appetite for investment. The situation was further helped by the participation of a property manager in the discussions with CEA. He represented the building owners' interests, and in concert with the CDM, CEA, and ConEdison teams, he helped the group go through the ESCo proposal line by line and categorize each energy efficiency measure as either "operations" (to be covered by CDM) or "capital" (to be covered by the building owners).

The second dimension was the environmental impact of the investments. A member of CDM's internal sustainability team was present, and asked repeated questions about the greenhouse gas reduction associated with the efficiency measures. Representatives of CDM and the property manager posed questions about how the measures would contribute to the Leadership in Environmental Engineering and Design (LEED) rating system for buildings. They saw having the building rated with the LEED system as potentially increasing property value for the owner and could

provide a good public relations story for CDM. The discussion revealed that a subset of the energy efficiency measures would contribute to LEED certification, but achieving the certification would also require other environmental improvements (such as bike racks for employees) that would not have a payback on the energy bill.

Finally, CDM talked about the opportunity to participate in a community campaign, particularly in a leading position as the first major project CEA would conduct.

Through the meeting, it became clear that CDM hoped that CEA would help them balance these three dimensions, as illustrated by the following comments, peppered throughout the meeting.

> *We all know Cambridge wants to be leader of pack. We also want that. When you put all that together, it's a good fit…*
>
> *We want to do something. Want to be leader in sustainability. Have to spend money. But I don't want to go out of business buying all hybrid cars. Need to be careful how we spend…*
>
> *Any way to tie to LEED report? If we show that, it's easier. Measures helping certification was 150K out of the 723K to 1M potential project scale? We are together. We want LEED, we want footprint. Bigger bang for buck. (Field notes, 3/4/2009)*

This meeting ended with a commitment to further consider the proposal with the senior executives of the firm.

Two months later, the result was CDM's decision to move forward with a $41K Investment Grade Audit (IGA). Following the IGA, CDM and its landlord agreed to invest almost $700K in total, providing a 15% annual return on investment. This deal has been CEA's one bona-fide success of CEA's original model to broker ESCo contracts, upcharge to support their operations, and publicize the deal as part of a community campaign to encourage others to get on board.

In explaining the rationale behind their decision, one CDM interviewee cited a basic philosophy at the firm: to account for the multi-faceted effects of their decisions.

> *I think there are these three facets we consider in implementing sustainability improvements - one is for the community, one is for our clients, and one is costs. So we take all three of those… and we evaluate anything that we do, and if it has a benefit to all three of them, we'll do it. If one of them does not, or has a significant negative impact, then we won't…*

> *The planet has an indirect benefit. If we do something for a very local community like here in Cambridge, or if we do something on a larger scale like for a water treatment plant, or if we do any sustainable decision making for any of our offices, these changes benefit the local communities. If every one of our offices did something in their local community then our changes have an impact on the world.*

In describing their decision to work with CEA, he made it clear that the financial return on investment was a strong motivator for the CDM executives, but one that dovetailed with the community and client dimensions.

> *I told them for an investment of three-quarters of a million dollars, you will save 135K per year and end up with 5 year payback. So if you have three quarters of a million dollars you are willing to spend, in 5 years you're going to get it back…*
>
> *And we saw benefit to doing this because we can demonstrate to our clients, that what we are designing for your facilities, we have done in our office. That's why it's very important to make a decision on the impact of all three [client, community, cost].*
>
> *The executives are always careful with our discretionary spending. Why don't we ask our engineers to do it? Could we put it off til next year? I said it's worth doing. First of all we want to be the leader, and we want to be the forefront. What if we're the 10th building that does this? We might not stand out as well in our clients' eyes. It might help us with the community and saving money, but might not be as big an impact with the client base.*

It is important to note that the impact of this engagement was not just on clients in general. The City of Cambridge is itself an important client for CDM.

> *We've worked with Cambridge since our founding in 1947. We designed the water treatment plant over at Fresh Pond. And we do a lot of work for them in water and other public works.*

With clients like Cambridge, CDM's value proposition is to improve environmental performance in a cost effective and sometimes cost saving way. They are ideologically committed to the idea of saving the planet, and pragmatically aware of the opportunities to save and make money doing so. They work through public-private partnerships around the world as part of their business.

Thus one interpretation of the success is that CDM is itself a kind of hybrid organization, one for whom CEA's hybrid mission – "Save Money. Save the Planet." – and hybrid form is resonant.

Delta

Delta is a life sciences company with significant operations in Cambridge, and is among the city's top energy users. CEA did not, however, approach Delta directly to

offer ESCo projects. Instead CEA chose to work slowly toward a more comprehensive strategy for approaching the life sciences sector as a whole. These organizations have very distinctive needs with respect to energy efficiency. The vast majority of their energy consumption occurs in laboratories, and is used in a combination of chemical fume hoods (to protect the health and safety of scientists) and vivariums (specialized ventilation and climate control systems to govern the living environments of laboratory animals). Retrofitting these technologies for energy efficiency requires distinctive technical expertise; if any changes to the facilities infrastructure results in disruption of scientific experiments, the cost can far exceed any potential energy savings (what one life sciences facilities manager referred to as "the million dollar rat problem").

CEA did, however, approach the Massachusetts Biotechnology Council, a professional association of life sciences firms, and gave a presentation to its working group focused on facilities management. Through the contacts made in this forum, CEA staff began a conversation with Eta (discussed above), and SourceOne, an energy consulting firm providing assistance to life sciences companies in the purchasing of electricity on deregulated utility markets. SourceOne had Delta as a client, supporting Delta's construction of a large combined heat and power co-generation plant (co-gen). As SourceOne came to understand CEA's connection to the Forward Capacity Market, they suggested that CEA might be able to register the Delta co-gen plant and share the auction proceeds between Delta, SourceOne, and CEA (70% to Delta, 20% to SourceOne, 10% to CEA).

As in the Gamma FCM deal, this arrangement did not result in new energy efficiency installation, but did create a revenue stream for CEA. It can be understood is a quasi-charitable contribution to CEA in support of its mission, since FCM registration could have been accomplished without CEA's participation.

Cambridge Housing Authority

The Cambridge Housing Authority (CHoA, to disambiguate from the Cambridge Health Alliance) is a governmental agency established by the City of Cambridge in 1935 to manage subsidized housing services. CHoA manages 2700 units of housing in a network of facilities that includes state and federal public housing as well as buildings owned and managed by non-profit partner organizations. It also manages a housing voucher program for an additional 2300 households. Because CHoA is responsible for construction, renovations, maintenance, and building management of public housing, it represents a substantial potential client for CEA. It conducts $5-8 million per year of capital improvements, which could include energy efficiency retrofits. With the financing available through the ESCo business model of guaranteed energy savings, much more might be possible.

CEA's engagement with CHoA dates to the early stages of the organization. Several of the founding team members had been involved in designing and/or managing low-income weatherization programs for the state of Massachusetts, and had contacts in CHoA as a result. Nonetheless, working together was seen by CHoA and CEA staff as bureaucratically difficult because CHoA is subject to government procurement laws, and as such would face the same challenges described above with the City of Cambridge. It would, however, as a government agency affiliated with the City, be subject to the Home Rule Petition granting the possibility of single-source procurement to CEA.

Thus, CEA's work with CHoA prior to the Home Rule Petition took the form of non-revenue generating activities. In the fall of 2008, CEA brokered a connection between CHoA and a team of masters level students at nearby MIT, who looked at three things: the technical and financial challenges in promoting energy efficiency investments at CHoA; the opportunities CHoA might have for running energy conservation behavior change campaigns with its residents; and opportunities for ongoing collaboration with MIT faculty and students to promote greener building construction and management. CEA, as a secondary client to the project, was able to gain some insight into the operations of CHoA through the process.

Real progress with CHoA as a client began, however, in 2010 after a former CHoA staff member joined the CEA staff. Garrett Anderson had been involved in installing digital control systems for the heating and cooling systems of a key CHoA facility. When CHoA began looking into installing similar systems in their other facilities, Anderson agreed to help via a consulting contract between CHoA and CEA. This project involved Anderson advising CHoA on both the technical implementation of control systems and the training of maintenance staff in their proper use. This latter focus on maintenance staff came about both because of Anderson's prior experience at CHoA and because CEA had seen through its other clients how important maintenance staff are to the success of energy efficiency initiatives. If maintenance staff override digital control systems in response to occupant complaints, doing so can negate the energy saving benefits of such control systems, and sometimes make buildings less efficient than they had been prior to control system installation. Maintenance staff also have a positive opportunity to use the data from control systems to target preventative maintenance and repairs before they result in more catastrophic breakdown. Based on these and other experiences, CEA has begun pursuing the possibility of offering an energy watchperson service that complements in-house maintenance staff of organizations with multi-building portfolios.

Cambridge Health Alliance

The second relative success case is the Cambridge Health Alliance (CHeA). CHeA is a conglomerate of hospitals and clinics, located in Cambridge and neighboring Somerville and Everett. It was formed as a public instrumentality, a kind of legislatively-anointed public-private partnership. CHeA became an early partner of CEA's after the City Manager asked them to help CEA receive grants while its 501(c)(3) status is pending. To oversee the organization CHeA placed four executives on CEA's Board of Directors, including CHeA's Senior Vice President Paul Allison who serves as CEA's Chairman.

CHeA, as a major energy user in Cambridge, then started to become a client of CEA. In fall, 2008, Allison approached CHeA's facilities and support services department (who have accountability for energy use in buildings) and suggested they work with CEA. This began a conversation about possible collaboration between the two organizations. At the time of writing, this conversation has led to a Memorandum of Understanding and then a consulting agreement specifying several tasks for CEA:

- Helping CHeA strategize its energy efficiency investments across its 66 building portfolio
- Recommissioning of building energy management systems.
- Engaging with employees to promote education and behavior change related to "sustainability" – energy use, recycling, waste minimization, transportation, etc.
- Because the Home Rule legislation covers CHeA's operations, CEA may be able to execute a single-source contract for more capital-intensive energy efficiency projects with an ESCo partner.

In addition, CEA endeavored to broker a relationship between CHeA and local university MIT to deploy business students to the problem of sustainability strategy at CHeA. To their disappointment, the students did not "bid" on the project and chose to work with other more globally renowned organizations.

It is noteworthy, however, that each of these roles go beyond CEA's original strategy of brokering ESCo contracts. They take advantage of CEA's special status in the community, and seek to uniquely align with CHeA's needs and interests. For CHeA, the relationship represents an opportunity to extend their capacity in creative ways.

CHeA interviewee: We are looking at CEA as kind of being an extender, and a coordinator, and trying to be innovative in how can we get increased activity, focus, and energy (no pun intended) realized on getting our employees activated and engaged… Our intent with CEA was to see if we could leverage them to help us with organizing, stepping up our tempo on sustainability efforts with their expertise, and their programs, and their services.

Because part of what I think is an interesting aspect that I think has a lot of potential is the whole emphasis that President Obama has with, you know, green technology and energy… so we think that CEA is uniquely poised, you know, as a national model, to be able to really take this topic and really go forward and make some innovative programs and coordination of services and delivery of services to help us reduce our operating cost and do the right thing for the environment. Whether it's solar or whether it's more recommissioning of the plants to make sure they are achieving and operating the way they are supposed to… There's multiple dimensions on the energy side.

This evolving business arrangement has occurred in part through a long term, multifaceted inter-organizational tie between the organizations, mediated by individuals who fostered patient and creative engagement between both parties. It also helps that CHeA and CEA are twin hybrid organizations aligned with the same municipal government. One CHeA staff member explained:

There is some unique history with CEA and CHeA - with the incorporation and the establishment. Our attorneys were asked by the City Manager to help establish CEA… So we are inextricably interwoven with their establishment. Paul Allison said to us, "At the bequest of Bob Healy, the City Manager, we helped establish this [CEA]. And I know you guys are working on these different energy efficiency initiatives, and we wanted to see if there are any synergies." It was no directive, only if it makes sense. Now we are just trying to understand how we can benefit from the relationship.

Internal interpretation and impacts

Amid this mix of client project outcomes, but particularly in the face of failures such as those with Alpha, Beta, Gamma, Epsilon, and Zeta, CEA's staff and partners engaged in active interpretation of their experience. These conversations and analysis resulted in several causal attributions that were mentioned repeatedly in discussions about the C&I client challenges. First, the CEA staff described undue conservatism on clients' part, and an unwillingness on clients' part to overcome bureaucratic impediments to action. "I guess we'll just do the elevator lights this year!" is a typical sarcastic comment born of the frustration with reluctance to invest in more ambitious energy efficiency retrofits.

Second, CEA staff recognized that despite early engagement with general managers and executives of the C&I organizations, the interactions with CEA would often get

handed off to facilities staff. This led to what CEA staff refer to as "getting stuck in the boiler room," in which facilities staff become the primary negotiating partners. CEA staff believe that C&I facilities staff are motivated by three things: a desire to minimize complaints by building occupants, and thus avoid unnecessary disruptions to facilities operations; a desire to maintain control of facilities management without undue interference by outside contractors and service people; and a desire to minimize the cost of any necessary projects. For facilities staff, the value proposition of CEA is sometimes seen as a benefit, but can be experienced as a threat if it is seen as handing over energy efficiency management to a third party. The value of engaging in a community campaign that might win the organization good publicity is also not part of a facilities' manager's purview; rather it is more likely to resonate with public relations, marketing, or human resources staff who are concerned with the organization's reputation with key stakeholders.

Third, CEA staff focused on the role of the financial market crash and slumping economy, particularly after this was revealed to be an important influence on the Zeta case. They saw this as adding to the general conservatism of organizations, providing at minimum an excuse for inaction.

There is, however, another explanation for CEA's failures that informants contemplated privately, one centered on problems with the identity of CEA itself. An executive of CEA reflected on the challenges with clients and said,

> *I also think that we have a fundamental credibility issue in the large C&I sector. You know, if I'm [names three large clients], I'm not going to do a multi-million dollar project with a 2 person non-profit. I do those projects with Johnson Controls or Ameresco [two key ESCos], I don't do it with little non-profits.*

A CEA client manager suggested that their model presents customers with a *"multi-headed hydra"* of a partnership, such that they are not sure who they are working with. These informants were, however, slow to raise the credibility issues in open conversations about CEA's challenges. My interpretation was that they did not want to undermine CEA's central narrative – that it is an ambitious initiative with strong institutional backing and a national model that is being imitated around the world.

Analysis: Explaining CEA's outcomes

Given this mosaic of cases of financial and client exchange, what patterns can we distill? Table 7 summarizes the cases narrated in this chapter. It organizes the exchanges into three categories: successful; moderately delayed/moderately successful, and extended delay/unsuccessful. Again, I use the word "delay" here to recognize that outcomes could eventually change, but that within my window of observation there was relatively less progress toward CEA's intended outcomes.

Table 7 – Exchange partners of CEA providing within-case comparisons, organized into three categories of varying success. Successful outcomes tend to be built from interpersonal ties, involve exchange partners with their own hybrid identity/logic, or involve quasi-charitable donation to CEA

Exchange partner	Intended exchange type	Special features	Initial connection (ST= Structural Tie; PT=Personal Tie)	Internal handoffs	External influences	Exchange outcome
Success cases						
Kendall Foundation (grantmaking)	Financing (grant)	Philanthropic grantors targeting non-profits	**ST:** Rob Pratt was Kendall program manager	None		$250K seed funding for CEA + $150K for program development and activities
Barr Foundation (grantmaking)	Financing (grant)	Philanthropic grantors targeting non-profits	**PT:** Rob Pratt reached out to personal connection	None		$250K seed funding for CEA + $100K for outreach activities
Chorus Foundation (grantmaking)	Financing (grant)	Philanthropic grantors targeting non-profits	Approached Rob Pratt looking for investment opportunities	None		$30K seed funding for CEA
Kendall Foundation (PRI)	Financing (loan)	**Hybrid** goals of mission and ROI	**ST:** Rob Pratt reached out to investment side of Kendall	None		$250K loan to CEA at 10%
Merck Family Foundation (PRI); Boston Foundation (PRI)	Financing (loan)	**Hybrid** goals of mission and ROI	**PT:** Rob Pratt reached out to personal connection	None		$750K loan to CEA (250K Merck; 500K Boston) at 10%
Chorus Foundation (PRI)	Financing (loan)	**Hybrid** goals of mission and ROI	Relationship established via grant (above)	None		$250K loan to CEA at 10%
Angel lenders	Financing (loan)	**Hybrid** goals of mission and ROI	**PT:** Rob Pratt reached out to personal connection	None		$750K total loans to CEA at 10%
Kresge Foundation (grantmaking)	Financing (grant)	Philanthropic grantors targeting non-profits	**PT:** RFP sent to Rob Pratt via personal connection	None		$180K Grant to support national model development and replication in other cities
NSTAR utility company	Financing (grant)	Regulated utility company	**ST:** City staff to CEO Tom May; NSTAR staff in CEA core team	Dave brought proposal to more senior staff	Legislative mandate to increase EE	$51K grant in 2009 to support residential outreach

Exchange partner	Intended exchange type	Special features	Initial connection (ST= Structural Tie; PT=Personal Tie)	Internal handoffs	External influences	Exchange outcome
CDM	Large C&I Client	**Hybrid** environment/ business mission; Building lessee	Approached CEA after publicity from launch	Started with interdisciplinary senior team	Extending lease; Interest in pursuing LEED certification	Successful contracting of Investment Grade Audit and $700K project
Delta	Large C&I Client	For-profit company; prior investment in co-generation	MA Biotech Council → SourceOne → Delta facilities/energy manager	None		**Donation** of 10% of FCM revenue from co-gen to CEA in exchange for CEA's management of FCM registration
Cambridge Health Alliance (CHeA)	Large C&I Client	Legislatively-founded public-private **hybrid**	**ST:** Founding partner of CEA; Originally linked via City officials	Financial/legal execs on CEA board → facilities managers	Subject to some government procurement rules	After Home Rule Legislation passed, MoU for comprehensive energy and sustainability consulting services (no ESCo project)
Cambridge Housing Authority (CHoA)	Large C&I Client	City-founded public-private **hybrid**	**PT:** CEA consultants unsuccessful; then Garrett Anderson (CHoA→CEA employee)		Subject to some government procurement rules	After Home Rule Legislation passed, Small contract for energy consulting services focused on retro-commissioning (no ESCo project)
Moderate delay / Moderate success cases						
Gamma	Large C&I Client	Non-profit institution. Experience with ESCos.	Senior facilities and sustainability staff	Individual facilities' managers		Free audits conducted, dropped for internal efficiency efforts. **Donation** of FCM credits.
City of Cambridge	Large C&I Client	Founding partner of CEA. Government.	**ST:** City environmental staff	Public works facilities staff; public schools facilities staff	Subject to government procurement rules	Delayed contracting because of procurement rules. Filing of special legislation. Contract for owner's agent services (no ESCo project)
Eta	Large C&I Client	Non-profit institution, employee focus	MA Biotech Council → Eta purchasing director	Proposal to facilities manager	Applied for stimulus funds and failed	Stalled ESCo project

Exchange partner	Intended exchange type	Special features	Initial connection (ST= Structural Tie; PT=Personal Tie)	Internal handoffs	External influences	Exchange outcome
Extended delay / Unsuccessful cases						
IRS	501(c)(3) tax exemption status	Evaluator of non-profit identity, policies, practices	Formal application	Regional evaluator		Delayed review; raising questions about private sector partners (consultants and ESCos)
MMA Renewables	Financing (loan)	Private sector; Portfolio of EE and renewable energy projects	Responded to CEA RFP	Program manager focused on EE		Only private lender responding to RFP, but wanted 16.5% interest
Alpha	Large C&I Client	Non-profit institution. Experience with ESCos.	City environmental staff → Alpha facilities and environmental staff	Senior facilities engineering staff → senior financial staff		Preliminary free audits conducted, dropped for internal efficiency efforts
Beta	Large C&I Client	Non-profit institution. Experience with ESCos.	City officials → executive director	Facilities managers, sustainability council		Preliminary free audits conducted, then alternative ESCo chosen
Epsilon	Large C&I Client	Non-profit institution	City officials → director of community relations, director of facilities	Facilities staff		Preliminary free audits conducted, then dropped in favor of internally managed efficiency efforts
Zeta	Large C&I Client	Non-profit institution	City officials → administrative VP	Facilities manager	Financial crash during project negotiations	Preliminary free audits conducted, then project dropped because of internal financial challenges

Clearly each case has its own idiosyncrasies, such as internal organizational politics (e.g., facilities staff wanting to maintain control of efficiency programs, community relations staff wanting to participate, sustainability-minded employees creating a demand for green investments) and varying vulnerability to the financial market crisis. If, however, we use the quote above about CEA's "fundamental credibility issue" to orient our attention, we can see an interesting pattern emerge.

As described in the earlier chapters, CEA seeks to operate through a mix of three institutional logics. One is the logic of an official effort by the City of Cambridge government to serve its constituencies and reach the policy objective of greenhouse gas reduction. One is the logic of a public service, mission-driven nonprofit organization that thrives on grants and charitable contributions in order to meet community environmental goals. The third logic is of a self-sustaining client service business thriving on debt-based financing and revenue from various kinds of consulting and construction project fees.

Exchange partners respond to this mixed logic in varying ways. The delayed and unsuccessful cases tend to involve those exchange partners who clearly expect one *or* the other logic. MMA Renewables is looking for profitable projects to finance; the IRS is looking for non-profits to certify; the non-profit institutional clients are looking for good client service providers; the City is looking for a politically acceptable service provider for execution of municipal construction projects. For these actors, CEA's hybrid model and its ties to the City government present a confusing entity (as we hear from the Beta and Gamma informants) that may even involve dangerous conflicts of interest (as we hear from the City, IRS, and clients preferring to manage projects internally). These exchanges have therefore tended to get stalled.

Where there are interpersonal or structural ties (i.e., individuals participating in both CEA and the client organization), however, this problem gets mitigated. Foundations that are inclined to support non-profit organizations nonetheless support CEA philanthropically when interpersonal conversations with Rob Pratt enable him to build a degree of comfort in those organizations. CHoA engaged with CEA through an employee with ties to both organizations. This same phenomenon occurs when structural ties between organizations create an interpersonal context in which challenges can be overcome – with NSTAR that conducts a pioneering grant, with the City that pursues a Home Rule Petition to overcome procurement rules, and with CHeA in its development of a broad consulting engagement.

The final condition that seems to contribute to success is when CEA's hybridity gets framed as an opportunity for win-win business/community strategy. This happens

with partners who are accustomed to hybridity through their own hybrid identity (foundations doing program-related investment, philanthropic angel investors, CDM, CHeA, CHoA).

Gamma and Delta are interesting cases because CEA approached these organizations with a hybrid strategy proposing client service, but the organization instead pursued a path of quasi-philanthropic donation of FCM credits. This speaks to the way CEA can get categorized by the market as a traditional non-profit when its business strategy is unsuccessful. They can succeed by offering an option for exchange that fits this existing schema.

The (il)legitimacy of CEA

To assemble these conditions into a coherent explanation, it is useful to employ the concept of legitimacy: the degree to which CEA's exchange partners see the organization and its actions as "desirable, proper, or appropriate" (Suchman 1995, p. 574). The history of CEA shows that while CEA's hybrid form was intended to enhance its legitimacy (and succeeded in some cases), its hybridity can be a source of illegitimacy as well, when it is seen as undesirable, improper, or inappropriate. I term this contradiction the paradox of hybrid legitimacy and explore the implications for CEA and hybrid organizations more generally.

Bryson, Crosby, and Stone (2006) acknowledge that legitimacy may be a problem for cross-sectoral collaborations like CEA. They build on Human and Provan (2000), who analyze small-firm manufacturing networks. These scholars find that networks must build legitimacy both internally (among partners who must see others in the network as trustworthy) and with external audiences (who must see the network form as understandable and worthy of support). Applying these insights to cross-sectoral collaborations, Bryson, Crosby, and Stone propose the following:

> *Cross-sector collaborations are more likely to succeed when they establish— with both internal and external stakeholders— the legitimacy of collaboration as a form of organizing, as a separate entity, and as a source of trusted interaction among members. (p. 47)*

The issue of legitimacy for CEA is not, however, simply due to its structure as a collaborative network form of organization, but to its cross-sectoral hybridity as

well: the fact that it combines competing institutional logics.[12] Further, Bryson, Crosby, and Stone do not specify *how* cross-sectoral collaborations can establish legitimacy. Their work thus bears elaboration. The data and analysis above allow us to pick up where Bryson, Crosby, and Stone's proposition leaves off, and accomplish three things – to expand the proposition, illustrate it empirically, and uncover some conditions under which legitimacy can be established.

First, it is necessary to further develop the concept of legitimacy. Suchman's (1995) useful and widely accepted definition is as follows:

> *Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions. (p. 574)*

Suchman goes on to elaborate "desirable, proper, or appropriate" into three dimensions of legitimacy – pragmatic, moral, and cognitive. Pragmatic legitimacy depends on exchange partners' seeing the entity as working in line with their rationalized interests. This involves an assessment of the entity's own interests and character, as well as the degree to which exchange and influence seem possible. This conception builds on Pfeffer (Pfeffer 1981; Pfeffer and Salancik 1978) and others taking a strategic perspective on legitimacy. Moral legitimacy is a dimension largely built on Weber (1968) and institutional theorists (Scott and Meyer 1991; Meyer and Rowan 1977) who build on that earlier work. Moral legitimacy involves an assessment of how "proper" are the entity's consequences, procedures, individuals, and structure according to institutionalized norms. Finally, cognitive legitimacy is a measure of the degree to which the entity and its actions are comprehensible and even taken-for-granted. This conception also builds on institutional theorists (Zucker 1987; Powell and DiMaggio 1991).

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[12] Bryson, Crosby, and Stone acknowledge the problem of combining logics, but only as pertains to internal alignment: "Competing institutional logics are likely within cross-sector collaborations and may significantly influence the extent to which collaborations can agree on essential elements of process, structure, governance, and desired outcomes." (p. 50). This assertion is valid – such internal conflicts among partners in cross-sectoral networks have been documented (Layzer 2008; Miraftab 2004; Ellersiek and Kenis 2008; Bloomfield 2006), and scholars have proposed processes for overcoming them (Huxham and Hibbert 2008; Huxham and Vangen 2005; Selsky and Parker 2005). What I emphasize here is that competing logics also create legitimacy problems in facing the outside world.

The common feature of all three dimensions is that they are highly audience dependent: legitimacy is a relational property.[13] The founders of CEA composed its hybrid network with assumptions about its audience in mind: that the imprimatur of the City of Cambridge would lend credibility; that the non-profit form would convey a sense of fair civic mindedness; that the offering of oversight and coordination services would create trust in the quality of ESCos' energy services. In a sense, they sought to "borrow" the legitimacy of their public sector partners, as when corporations portray themselves as serving the public interest by creating partnerships with NGO's (LaFrance and Lehmann 2005), angling for what Dacin, Oliver, and Roy call the social legitimacy of strategic alliances (2007). The cases in this chapter illustrate what actually happened when this self-presentation met CEA's financier and client audiences.

On the one hand, the diversity of CEA's exchange relationships does illustrate one key benefit of the hybrid organizing strategy. Each of the institutional logics it combines defines an organizational field (Thornton and Ocasio 2008) and therefore a set of potential supporters, funders, clients, and other exchange partners. The audience for its legitimacies (plural) is larger. Thus, by holding a simultaneous identity as a civic-minded non-profit and a revenue generating business, it can access a range of resources through a kind of bricolage. Foundation grants, government grants, loans, and client revenue provide a range of possible financing sources, granting some degree of flexibility and resilience to the organization. Legitimacy has the potential of being additive (Kraatz and Block 2008).

At the same time, there are risks in appealing to this broad range of audiences that cross institutional lines. Institutional logics define what is understandable and acceptable for an organization or network to do; they define the basic expectations behind cognitive and moral legitimacy. In the United States we have differing expectations surrounding government agencies, businesses, and non-profit organizations. We expect government organizations to enforce rules and deliver public services, with funding from legislative mandate and bureaucratic accountability to elected officials and constituencies. We expect for-profit businesses to be financed by debt and equity shareholders, to deliver products and services for revenue, to be customer oriented, etc. Finally, the IRS, government grant programs, philanthropic foundations, and charitable citizens all create rules and expectations about what a "non-profit" or "public interest" organization is

[13] Although Suchman suggests that the three dimensions can be distinguished based on their "behavioral dynamic," it is clear from his examples that behavior is coordinated in the relationships between the entity and its audiences.

supposed to look like, how it is supposed to behave. For example we expect non-profits to secure grants and donations, to enroll volunteers, and to deliver on a mission of public good, perhaps one that government or business would not otherwise accomplish. We attribute that non-profit organizations are "warm" while for-profit organizations are "competent" (Aaker, Vohs, and Mogilner 2010).

The delay and failure cases illustrate how CEA's attempt to combine these logics has hurt its legitimacy by defying these expectations. Some exchange partners have seen it as undesirable (pragmatically illegitimate): bidding for private financing failed when MMA Renewables saw CEA as too risky to merit a competitive interest rate; Alpha, Gamma, and Epsilon have opted for internal management of efficiency projects so as not to surrender control. Others have seen it as potentially improper (morally illegitimate), as when the IRS raised questions about private sector involvement and the City required special legislation before granting it a contract. Finally, they have seen it as incomprehensible (cognitively illegitimate), as when Beta opted to work with a traditional ESCo in part because they did not fully understand the CEA organization and offering, and Gamma suggested that confusion about the city/business/non-profit business model affected building managers' willingness to work with CEA.

These outcomes illustrate that hybridity can be a liability. When schemas and expectations exist for interaction with one kind of organization, a hybrid that combines multiple kinds may not be cognitively understandable or morally justifiable. In fact the existence of institutional logics at all requires a definition of boundaries between them, the crossing of which risks being seen as "impure" (Douglas 1986). The result is friction and delays with exchange partners that pose serious risks to the enterprise. This idea is connected to what Zuckerman (1999a) terms the *illegitimacy discount* – the fact that firms with a diverse mix of business activities do not fit into security analysts' narrow categories, and therefore get less investment capital. Novel or ambiguous combinations are particularly vulnerable to this illegitimacy discount effect (Ruef and Patterson 2009).

The paradox of hybrid legitimacy

The contradictory effect of hybridity across institutional logics is what I'll call the *paradox of hybrid legitimacy.* Being a hybrid organization expands the number of potential exchange partners who might provide the hybrid organization with critical resources. Hybrid organizations may have less success in completing the exchange, however, because their hybridity violates cognitive and normative schemas – i.e., it is illegitimate – among those exchange partners.

Thus, to expand upon the Bryson, Crosby, and Stone (2006) proposition, I suggest a few new propositions. These are based upon my observation of the conditions under which CEA was successful. If these observations are generalizable, then the propositions should hold.

> *Proposition 1: Cross-sectoral collaborations will be successful when they establish the legitimacy of both the network form and a hybrid way of organizing. Doing so requires navigating the paradox of hybrid legitimacy.*

What does it mean to "navigate the paradox of hybrid legitimacy?" As described earlier, legitimacy is a relational phenomenon arising between an entity and its audiences. It is a result of presentation and perception amid a field of cultural schemas and norms. Thus the conditions that permit navigating the paradox of hybrid legitimacy are those in which the presentation and audience are chosen carefully, enabling *alternative pathways to legitimacy*:

- The organization offers options for exchange partners to engage more narrowly via one or the other institutional logic. *Examples: CEA's securing grants from foundations and federal grants as a non-profit organization; FCM donations from Gamma and Delta.*
- The organization engages exchange partners whose own hybrid identity, mission, and strategy create schemas in which hybridity is comprehensible and taken-for granted. *Examples: Program Related Investment from Foundations; CEA's client engagement with environmental consulting firm CDM, the Cambridge Health Alliance, and the Cambridge Housing Authority.*
- Friendship ties and structural ties (shared membership of individuals in both the organization and its exchange partner) provide a context for interpersonal engagement. In this context, trust in what Suchman (1995) calls "personal legitimacy" can become a scaffold for organizational legitimacy. *Examples: Rob Pratt's connection to foundations and investors; an NSTAR representative's participation in the CEA Core Team; CEA's board-level ties to the Cambridge Health Alliance and the City of Cambridge.*

I suggest:

> *Proposition 2: Navigating the paradox of hybrid legitimacy requires pursuing alternative pathways to legitimacy that allow circumventing the illegitimacy of defying known organizational types.*
>
> *Proposition 3: One alternative pathway to hybrid legitimacy is to sequentially present the organization as one or the other known type. This may be a more feasible strategy in the early stages of organizational development before a dominant reputation has been established.*
>
> *Proposition 4: One alternative pathway to hybrid legitimacy is to work with exchange partners who are themselves hybrid organizations, with whom cognitive and moral legitimacy can be more easily established.*

Proposition 5: One alternative pathway to hybrid legitimacy is to use interpersonal relationships such as those built through structural ties, enabling interpersonal trust to scaffold the development of cognitive and moral legitimacy.

Experiencing the paradox

It is also important to recognize that the paradox of hybrid legitimacy is not just a theoretical contradiction. It is a tension experienced first hand by the actors involved in crafting and enacting a hybrid organization. CEA tries to advance public policy by combining organizational forms, accessing a diverse array of resources, and pioneering new kinds of transactions that advance public and private good. At the same time, CEA's hybridity is itself a source of illegitimacy. It can stymie progress and create conditions in which the organization is inclined to simplify its image, collapsing its hybridity into a pre-existing institutional logic.

For actors experiencing this paradox from within, success feels elusive. One recurring refrain, often uttered as a half-joke, is that CEA is supposed to reach 50% penetration for energy efficiency in a 5-7 year campaign, but "we're still not sure when to start the clock." Frustration with clients and financiers' reluctance to move forward with CEA was common throughout my observations.

It is also worth noting that the founders themselves took time in coming to terms with CEA's hybridity. They had to discover the appropriate strategy of PRI and angel loans, and the value of clients who are themselves accustomed to crossing public and private lines. Along the way, the organization gradually drifted toward grant financing reflecting a more traditional non-profit institutional logic, taking advantage of resources targeted at organizations that fit into this logic. Then, when this strategy encountered difficulty, CEA began pursuing a more complex mix of exchange partners. This trajectory is explored in depth in Chapter 4.

Scholars of paradoxes in group and organizational life have pointed out that such feelings of stuck-ness and experience of oscillation are common (Lewis 2000; Lüscher and Lewis 2008; Quinn and Cameron 1988; Smith and Berg 1987). These authors suggest that paradoxes are not problems to be "solved" permanently. Rather, extraordinary performance sometimes comes from successfully "holding" or "navigating" paradoxes toward "workable certainty" and creative synthesis in practice. This can happen for example through reflective practices that enable naming and reframing of paradoxes (Lüscher and Lewis 2008)[14] or sustained

[14] Lüscher and Lewis (2008:231) describe managers' grappling with the conflicting demands to *both* engage in team building *and* increase their focus and productivity. Gradually they came to see that taking time to deal with conflicts would create more efficient teams over the long run.

productive conflict between internal factions (Ashforth et al. 2009).

In the present case, however, the paradox extends beyond the inner life of a group or organization to its external relationship with exchange partners. The organizational actors move back and forth among framings of the organization, at times emphasizing a single logic in order to be in the running with legitimate exchange partners (e.g., positioning themselves as professionals, as kind of ESCo). Yet when they are placed up against other potential competitors like Johnson Controls (a traditional ESCo), they switch to the hybrid logic as a source of differentiation. Then when exchange partners find the hybridity confusing, they switch back to the single logic. This oscillatory and partly stuck behavior is typical of organizations operating amid paradoxes, but it arises in a dynamic between CEA and exchange partners. Thus the capacity to navigate the paradox, and balance the unstable equilibrium of hybridity, depends on a feature of the relationship.

Considering the paradox of hybrid legitimacy from the inside, as a challenge to sensemaking and identity work, I propose the following:

> *Proposition 6: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience stuckness, in which the organization hesitates in engaging with exchange partners until it has successfully resolved its internal contradictions, but to the detriment of performance.*
>
> *Proposition 7: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience oscillation, moving back and forth between organizational identities and images.*
>
> *Proposition 8: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience some reduction in organizational complexity and cleaving to one pole of the hybridity; this creates path dependency based on its most successful exchange relationships.*

It is worth noting, however, that unlike in past depictions of organizational paradox, the paradox of hybrid legitimacy is not confined to the boundaries of the organization or network. Instead it arises in the interface with exchange partners in the external environment. The implications for practice cannot, therefore, only follow past prescriptions to engage in reflective practice or productive internal conflict. Instead the implication is to BOTH choose exchange partners with whom navigation of the paradox is possible as a characteristic of the relationship (propositions 2-5), AND be aware of the internal dynamics and consequences of the paradox (propositions 6-8).

Chapter 4 – The catalyst's paradox

Introduction

The theme of this dissertation is that hybrid organizations like CEA seek solutions to complex problems by combining elements of government, business, and civil society organizations, but that there are unintended consequences of this hybridity. These paradoxes of hybrid organizing can stymie progress and can lead to a drift away from the very hybridity that offered the unique approach to seemingly intransigent issues. At the same time, there are conditions and processes through which it is possible to navigate these challenges and realize the potential of hybrid organizing.

In the previous chapter, I looked at a set of CEA's exchange relationships to identify the *conditions* under which it has experienced both success and failure. In this chapter I focus on *processes* of interpretation, learning, and change within CEA amid these experiences.

The result of these processes (and the empirical motivation for analyzing them) is that by 2010 CEA had become a different organization from its early inception. While CEA did not have a formal mission statement in 2007, an approximation can be found in a "Chronicle of CEA" document.

> *The Cambridge Energy Alliance (CEA) is a new nonprofit organization affiliated with the City that will design, market, finance, manage, and document unprecedented efficiency improvements in the use of energy, water, and transportation. The CEA will carry out a massive $100+ million efficiency effort offering new technical services and financing options to residents, businesses, organizations, and institutions. Where feasible, the CEA will also support installations of new renewable and clean energy generation, and technologies that curb electricity use during peak demand periods.*

When CEA redrafted its mission statement in May 2010, the language used was as follows:

> *The Cambridge Energy Alliance confronts Climate Change by educating, inspiring, and assisting residents and businesses in Cambridge to improve the efficiency of their buildings and reduce their climate impact. We work to overcome barriers that prevent people and organizations from implementing efficiency measures in their buildings through programs, outreach, and financing; creating new solutions to old problems. We work to share our successes and our challenges with other communities so that Cambridge can be a model for energy efficiency to communities across our nation. Our goal is transformational change of buildings and organizations so that energy efficiency and conservation is realized across our society.*

CEA's definition of its mission and activities has changed. In 2007, CEA sounds like a business. The key verbs were "design, market, finance, manage, and document" energy efficiency improvements, all of which are processes associated with being a client service enterprise. In 2010 the verbs had become: "educating, inspiring, and assisting"; "overcome barriers"; "share our successess and our challenges." This language represents a mix of practices and goals that includes grant-funded education and outreach, client-funded "assisting" and solutions to attempt more systemic change as a hybrid organization.

This chapter confronts this basic empirical puzzle: how and why had CEA changed over the course of time? Following other researchers' guidelines for process-oriented research (Van de Ven and Poole 1995; Poole 2004), I first describe *how* CEA has changed (*what* has changed, and *in what sequence*). I employ the concept of organizational logic from Chapter 1 and illustrate three phases of change in CEA's organizational logic. I then use qualitative data analysis to explain *why* these changes happened in terms of three interrelated processes: CEA's learning from relatively unambiguous successes and failures in the market; CEA's adaptation to a changing political and institutional context; and CEA's reframing of its identity amid the ambiguity of "successful failures" – situations in which the definition of success and failure is a matter of debate. This third process illuminates a critical tension of hybrid organizations that I term the catalyst's paradox. I explore that paradox in depth, both within the CEA context and as a broader phenomenon.

Changes in CEA's organizational logic

What changed in CEA, and in what sequence? To describe the changes I observed, it is useful to employ the language of institutional and organizational logics. From its inception CEA organized itself through a mix of three different institutional logics: those pertaining to business firms, non-profit organizations, and government bureaucracies. These logics are described in the table below, to give a clear point of reference. As in Chapter 1, the choice of rows is based on past conceptualizations of institutional logics rooted in Giddens' (1984) theory of structuration and adapted into a similar tabular display by Ewick and Silbey (1998, 2002). To these authors' inclusion of normativity, agency, constraint, time, and space, I have added artifacts (at least those relevant to the CEA context) as carriers (Scott 2003). In this expanded table I have also included the actors most relevant to these dimensions: the constituent population of energy-using people and organizations that serve as the unifying focus for CEA's work; the actors inside the organization who carry that logic; and the exchange partners outside CEA that embody its institutional constraints.

Table 8 - Institutional logics at play in the Cambridge Energy Alliance

Institutional logic	State	Market	Civil Society
Ideal type organization	**Municipal government bureaucracy**	**Business firm**	**Non-profit organization**
Normativity/ strategic imperatives	Policy implementation, serving constituents, accountability	Revenue, profit, client service, value creation	Mission, public service, solidarity, selflessness
Framing of constituent population of energy users	Political constituents (rights and responsibilities of citizenship)	Clients (need to be served, given choice via competition)	RANGE: Activist targets, campaign participants, partners, members
Source of agency/ capacity to act	Coordination of public resources, rule making, enforcement power	Salesmanship, innovative service delivery	Collective action framing, education
Primary actors in CEA	City officials	Consultants	Community organizers
Constraint/ structure	Law, procurement rules, transparency to public	Rules of the game, scarce client attention and resources, brokerage position, fiduciary responsibility to financiers	Normative expectations of stakeholders
Exchange partners of CEA embodying constraint	Budgeting bureaucrats and officials, City Council, elected officials, taxpayers / voters	Investors, clients, subcontractors, board of directors	Foundations, donors, members, board of directors, IRS
Time	Budget cycles, election cycles	Sales cycles, quarterly reporting	Campaign momentum, tipping points, grant funding cycles
Space	Public meetings/hearings	Homes and businesses as clients	Neighborhoods, events, intimacy
Artifacts (carriers)	Climate action plan, budgets	Business plan, sales brochures	Grant proposals

Of course, none of these ideal-type institutional logics perfectly typifies CEA. Instead together they serve as a kind of cultural toolkit (Swidler 1986) – a collection of diverse schemas and resources from which actors in CEA can draw. The result at any moment in time is a more concrete *organizational logic* that draws on elements of all three abstract institutional logics. Normative imperatives coalesce into organizational strategy and identity. Sources of agency become people in organizational roles. Structural constraints become exchange partners. Structures of time, space, and artifacts come together in everyday practice. Past scholars have conceived of organizational logic in a variety of ways – as a legitimating principle (Biggart 1991), a bundle of practices (MacDuffie 1995), or the combination of

governance, strategy, and workflow (Spicer 2006). I understand organizational logic as the interconnections among organizational identity (how organizational members understand and talk about the organization), strategy (the selection and binding together of ends and means), and practice (what people do on a day to day basis, including division of labor among actors with diverse backgrounds).

It is this organizational logic of CEA that has changed over time, through shifts in the balance among the three institutional logics described above. This change has occurred in three phases. Phase 1 was a period of emphasis on a business logic. Phase 2 was a period of emphasis on a non-profit logic. Phase 3 was a period of more balanced, complex hybridity. These phases are hard to precisely delineate: while there are marker events that help define them (e.g., the resignation of CEO Josh Hassol in April 2009, the reorganization of responsibilities among the staff in December, 2009), these marker events both recognize and precipitate change, so they represent fuzzy boundaries. The phases are, however, analytically useful in describing and explaining the change processes at CEA.

In Table 9 and the sections below, I describe these three phases in detail and then explain the changes from Phase 1 to Phase 2 and from Phase 2 to Phase 3. My analysis suggests three interrelated processes at play: learning from success and failure; adapting to changes in the institutional context; and reframing the organization amid the ambiguity of what I call "successful failures."

Table 9 - Phases of change in CEA and contributing processes

		Phase 1: 6/2006 to 5/2009	**Phase 2: 5/2009 to 12/2009**	**Phase 3: 12/2009 to 5/2010**
Organizational changes	*Organizational logic*	Client-service business	Public-service non-profit	Complex hybrid organization
	Indicative self-description	*"I really wanted CEA to be private sector based, because unless people in the private sector are making money doing things, you can't reach scale."*	"*CEA is starting to look more like a traditional non-profit organization."*	*"It's a very different organization from what we envisioned a few years ago. More realistic, more adaptable to conditions on the ground, and more useful on the national stage."*
	Financial strategy	Loans to finance CEA; client fees from ESCo projects; grants to taper	Grants as primary income source	Staff billing time to mix of grants + consulting client fees
	Significant personnel changes	Outreach coordinator hire 1/2009; CEO Hassol resignation 4/2009	Energy advisor hire, 6/2009; Co-executive directors, 12/2009	
Process 1: Learning from success and failure	*Revenue successes and failures*	*Successes*: foundation grants; NSTAR grant *Failures*: Large C&I clients (Alpha, Beta, Gamma, Epsilon, Zeta)	*Successes*: Kresge grant; FCM donations from Gamma, Delta; CDM ESCo project; scoping contract with City	*Successes*: CHeA project; CHoA project *Failures*: SEP grant, DOE grant
Process 2: Adapting to institutional change	*Federal-level events*	Market crash, 2008; Obama inaug., 1/2009; ARRA passes, 2/2009	ARRA grants announced, 5/2009	
	Signs of adaptation	*"Our core model to finance efficiency is an elegant model and works under most conditions but I'm skeptical that it works today."*	"*There has never been a better time in history to be a non-profit working in energy efficiency."*	
Process 3: Reframing the organization amid successful failures	*Successful failures*	Residential contracting, late 2008; Beta, 3/2009	Gamma, 11/2009	Alpha, 5/2010
	Identity framing	*"One stop shop"*	*"Laboratory"*	*"Catalyst"*
	Catalyst (mixed part/whole) projects	NSTAR grant application, rewarding for city-wide increase in energy audits	Public schools project proposed	CHeA project with MIT students proposed; Life sciences lab energy project formulated; Small business recognition program launched

Phase 1: June, 2006 to May, 2009: Business logic emphasis

As described in Chapters 2 and 3, CEA was founded after two staff members of the City's Department of Environmental and Transportation Planning approached Rob Pratt at the Kendall Foundation in June, 2006. The City had set a target in 2002 of 20% reduction in GHG emissions by 2010, and had invested in some municipal energy efficiency projects. Its assessment of 2005 emissions, however, showed them going up, not down, and they sought help in reaching their original target.

The City and Foundation jointly convened a group of energy efficiency professionals and entrepreneurs. These advisors developed a business plan and established the idea of a hybrid, cross-sectoral Cambridge Energy Alliance. The City would be closely involved, with City Manager Bob Healy on the Board of Directors and a regular core group that would involve City staff. At the same time, the founding team envisioned an organization slightly separate from the City bureaucracy. They wanted an enterprise that would be autonomous, flexible, replicable in other cities with different bureaucratic structures and capabilities, and that would have a private sector feel.

> *What's the organization, who's going to run it? Is it a city department? Well, no, because we don't want to have to deal with procurement regulations and we don't want to have to deal with HR restrictions - can't hire and fire people, for example. So we don't want it to be a City department. But is it entirely private? No, because then we won't have the City's name behind it. Right?* ***So we want it both ways, in a sense.***

This statement "we want it both ways" by one of the founders points to the basic hybridity of CEA, and the dynamic tension between being associated with the City government but not part of it.

At their first meeting, Pratt suggested that Cambridge conduct an aggressive campaign for energy efficiency in buildings that would mobilize $100 million in investment by the private sector. In design meetings with Pratt's colleagues over the ensuing months, the form of CEA took shape. It would be a non-profit 501(c)(3), closely aligned with the City government, and conducting projects through a group of pre-selected private energy service and financial service firms who could deliver energy audits, construction, and financing.

As described in the introduction to this chapter, while CEA did not have a formal mission statement in its earliest days, an approximation of such a statement can be found in a "Chronicle of CEA" document dated May, 2007.

> *The Cambridge Energy Alliance (CEA) is a new nonprofit organization affiliated with the City that will design, market, finance, manage, and document unprecedented efficiency improvements in the use of energy, water, and transportation. The CEA will carry out a massive $100+ million efficiency effort offering new technical services and financing options to residents, businesses, organizations, and institutions. Where feasible, the CEA will also support installations of new renewable and clean energy generation, and technologies that curb electricity use during peak demand periods.*

Although the organization presented itself as a "nonprofit organization affiliated with the City," the founders' early intention was for CEA to be revenue driven, funding its operations through two sources based on their successful completion of energy efficiency and renewable energy projects. First would be a 5% markup fee on energy efficiency retrofits, that clients would pay in return for CEA's oversight and publicity of ESCo projects. The second would be a set of payments from government-created markets for the public-benefit "attributes" of EE projects: energy demand reduction (through the Forward Capacity Market or FCM) and greenhouse gas reduction (through the Regional Greenhouse Gas Initiative or RGGI). These revenue sources would come from a mix of public and private actors, but followed a fee-for-service logic, rewarding CEA for its efforts to "design, market, finance, manage, and document" efficiency improvements.

As described in Chapter 3, given the intention to generate revenue like a business, the founders pursued a debt-based financing strategy – they sought loans from the private sector that could be paid off with interest as the organization grew its fee-based revenues. Any foundation and government grants pursued early on were intended to taper off over time. Their rationale for this business-like design was primarily one of replicability. Says Pratt,

> *I really wanted CEA to be private sector based, because unless people in the private sector are making money doing things, you can't reach scale. It's pretty clear that energy efficiency is only going to work as a truly impactful climate solution if the market opens up and businesses profit by doing the right thing. With the Cambridge Energy Alliance, I also wanted to do a model that was private sector oriented so it could be replicated in other places.*

In 2007 and 2008, the CEA founding team executed on this original concept. In 2007 they conducted a well-publicized launch event featuring the CEO of the NSTAR electric and gas utility, Massachusetts Governor Deval Patrick, and a variety of state and City of Cambridge officials. They selected a stable of energy service companies to support energy efficiency projects. They secured debt-based financing in early 2008 using the founders' notes strategy described in Chapter 3. In Q1 of 2008 they begin outreach to large C&I clients, an effort that accelerated with the hiring of Josh

Hassol as CEO in July, 2008 who made it a focus. The outcomes of that process were described in depth in Chapter 3.

A 7-year financial forecast dated May 16, 2008 presents the original model of operating as a revenue-generating business. It anticipated $442K in fees for 2008, ramping up to $4000K by 2014. Grant revenue was anticipated to taper down from $100K in 2008 to $50K per year by 2010. After 7 years, at the end of 2014, CEA would have paid off its debt and reduced GHG emissions in Cambridge by 10%.

Phase 2: May, 2009 to December, 2009: Non-profit logic emphasis

As CEA evolved, however, this basic identity and strategy as a fee-for-service business shifted closer to a non-profit institutional logic.

This change occurred in a second phase that began around May, 2009, after Josh Hassol resigned as CEO in an effort to reduce CEA's operating costs. Deborah Donovan, the project manager who had been CEA's first employee was appointed acting Executive Director. It is noteworthy that this title reflects institutional norms of non-profit organizations rather than the more corporate "CEO" title for Josh Hassol. For governance purposes, Rob Pratt became President and Paul Gromer (a consultant to CEA and earlier acting CEO) became Vice President.

By this time, the organization had come to derive the vast majority of its revenue from foundation and government grants. Lilah Glick had been hired as a community outreach coordinator in January 2009 and had organized volunteers and grant proposals to support that work. Supported by a grant in July 2009 from NSTAR, CEA hired Garrett Anderson as Energy Advisor for residential customers. The result was that of the three full time staff members, two of them were dedicated to the small residential program that is not a source of fee revenue. Both had community organizing and grant writing backgrounds in non-profit organizations. These staff were further supported by a summer intern and a group of student volunteers conducting neighborhood canvassing, making this activity a major focus of organizational attention.

Gradually, discussions of current and upcoming government and foundation grants came to dominate the first half of each core group and board meeting, an emphasis that began in summer, 2009 and continued through the end of 2009. The only significant non-grant income to CEA came from Forward Capacity Market credits, but these were not the result of new efficiency projects facilitated by CEA. Rather they came from a quasi-charitable donation to CEA by large C&I clients who had made prior efficiency investments and chose not to participate in the Market themselves.

Recognizing this shift in personnel, activity, and revenue mix, in September 2009 executives began discussing the fact that CEA was coming to look "more like a traditional nonprofit." They began discussions with their attorney and Board of Directors about the possibility of re-filing their request for 501(c)(3) status with the IRS (a key statement of official organizational identity) on that basis.

Phase 3: December, 2009 to May, 2010 (end of observation period): Complex hybridity

In early 2010, the organization made yet another transition towards a more complex way of operating that reintegrated the three institutional logics. Like the shift from Phase 1 to Phase 2, this shift was precipitated by a personnel change. In lieu of hiring a new Executive Director or CEO, the Board of Directors agreed to name the three core staff members – Garrett Anderson, Deborah Donovan, and Lilah Glick as Co-Executive Directors.

In this shift, Anderson's job responsibilities were re-oriented to focus on managing Large C&I client interactions. Glick would focus on residential and small business outreach. And Donovan would manage FCM projects and financial management and reporting requirements for CEA's grants.

In addition to this re-division of labor to balance the client-service and public-service lines of activity, new organizational routines were put in place. CEA's staff and consultants were asked to log their hours and activities, and internally bill their time against either client projects (which could include employee education, advising on energy strategy, and other support activities) or grant-funded projects like community outreach in Cambridge or advising other communities in the formation of energy alliances. The intention was that this practice would enable the organization to be rigorous about getting sufficient funding to support all its activities, while enabling them to pursue a variety of projects with a variety of funding streams. After summarizing this model at a board meeting, one of the founders said this:

> *It's a very different organization from what we envisioned a few years ago. More realistic, more adaptable to conditions on the ground, and more useful on national stage.*

In the months that followed, a few projects were initiated that had a different character from either purely grant-funded community education and outreach or purely client-service-revenue-driven building retrofit projects. These included an initiative to gather life sciences firms in thinking together about laboratory energy management, and a recognition program for small businesses that invest in energy efficiency. These projects (which I describe in greater depth below) involve participation by both the City government and the business community, and seek to

catalyze energy efficiency investments without necessarily being directly involved in them. This represents a more complex way of integrating institutional logics and actors than existed in the earlier phases of CEA.

In this period, a new mission statement drafting process began that reflected the changes in Phase 2 and Phase 3. As quoted in the introduction to this chapter, the draft as of the time of writing in May, 2010 was as follows:

> *The Cambridge Energy Alliance confronts Climate Change by educating, inspiring, and assisting residents and businesses in Cambridge to improve the efficiency of their buildings and reduce their climate impact. We work to overcome barriers that prevent people and organizations from implementing efficiency measures in their buildings through programs, outreach, and financing; creating new solutions to old problems. We work to share our successes and our challenges with other communities so that Cambridge can be a model for energy efficiency to communities across our nation. Our goal is transformational change of buildings and organizations so that energy efficiency and conservation is realized across our society.*

It is worth noting a few changes from the earlier statement to this one. In May, 2007, the key verbs were "design, market, finance, manage, and document" energy efficiency improvements, all of which are processes associated with being a client service business. Now in 2010 the key verbs are: "educating, inspiring, and assisting"; "overcome barriers"; "share our successess and our challenges." This represents a mix of practices and goals that includes grant-funded education and outreach, client-funded "assisting" and hybrid solutions to attempt more systemic change.

Explaining the change

The top half of Table 9 summarizes the three phases I have just described. How to explain this evolution from Phase 1 to Phase 2 and from Phase 2 to Phase 3? My analysis suggests three interrelated processes at play, which are highlighted in the bottom half of Table 9 and summarized in the following section.

Process 1: Learning from success and failure

One explanation for CEA's evolution is that they learned from their own pattern of success and failure in the marketplace. As described in Chapter 3, in a number of critical cases – Alpha, Beta, Gamma, Epsilon, Zeta – CEA was not successful at securing fee revenue. The organization encountered financial difficulties as a result, which culminated in Josh Hassol's resignation as CEO in order to reduce the organization's monthly expenses.

In the absence of fee revenue, grant revenue became a fallback position. Then, as the organization came to rely more on grants for its livelihood, the CEA team's began to realize that it had come to look "more like a traditional non-profit." Perhaps, then, further success could be realized by continuing to enact that organizational logic. In the transition from Phase 1 to Phase 2, this learning process was very much in play.

The implication of this explanation based on learning is that if we can explain why CEA failed to secure fee revenue for energy efficiency projects, then we can understand a key driver of its organizational change. As I described in Chapter 3, the paradox of hybrid legitimacy is a useful mechanism for understanding that failure: CEA has had trouble establishing its legitimacy among exchange partners who expect it to fit into one or another familiar organizational logic. The result of the ensuing change (from Phase 1 to Phase 2) is that the organization came to hew closer to the non-profit logic. This process suggests a micro-level mechanism through which organizations conform to – and perhaps move between – institutionalized organizational forms.

Process 2: Adapting to changes in the institutional context

If we are to take the institutional environment seriously, however, it is worth expanding our view to understand some important external influences on CEA's organization's development.

As described earlier, CEA was initiated in 2006. This was during the presidential administration of George W. Bush, which favored relaxing environmental regulation, and whose energy strategy focused on expanding foreign and domestic fossil fuel production rather than energy efficiency (Thompson 2005; Parenteau 2004; Reardon 2004). Climate change, to the extent it was even acknowledged as a problem by the Bush administration, was approached through voluntary regulation. As a result, the federal government was not seen as an ally for advocates of environmental protection or energy efficiency at that time. This meant that state and local government action, as well as action by the private sector, was seen as critical to fill the gap (Rabe 2007). The Cambridge Energy Alliance was founded in this context, and we can see the imprint on key organizational choices; most notably it focused on investment from the private sector rather than government funds.

Two things changed in the following two years as CEA matured. The first was the collapse of the financial markets and beginning of the "Great Recession" in 2008. This had the effect of tightening the capital markets and making private investment seem less feasible. CEA's original business model had included its arranging loans to homeowners and small businesses in order to help them finance energy efficiency

projects. Now those prospective clients looked increasingly debt averse. In response to this trend, CEA began to de-emphasize its brokering of financial transactions. At a residential strategy meeting in December 2008, one consultant suggested the following.

> *Our core model to finance efficiency to pay out of savings is an elegant model and works under most conditions but I'm skeptical that it works today. Given economy, people are unwilling to assume debt. 0% doesn't help. Automobile sales are 25% off last year's, even though they are offering 0%. We could make decision to buy down interest rate and may not be expensive because others wouldn't take up. But we'd be further down the road and success not achieved. Our elegant model may not float in this storm and we may need to change the boat. Need to get the most people to participate in CEA. [We should route them toward the] NSTAR program. Behavioral changes in addition or instead of NSTAR model. (Field notes, 12/3/2008)*

Absent financing of deals, CEA's offering came to increasingly resemble the traditional energy audit offered by the NSTAR utility company. Thus CEA's role in this context became one of simply educating people (through public events and canvassing) about the NSTAR utility company's free energy audits. Such educational activity fit more closely with a grant-funded, non-profit business organizational identity.

The second change in the institutional context was the election of Barack Obama. When the Obama administration took office in January 2009, the federal landscape of energy and environmental policy changed. During the campaign, Obama had made it clear that climate change would be taken as a serious issue (Obama 2007), and that pursuing energy efficiency would be a cornerstone of Obama's climate strategy (Romm 2008). The new Secretary of Energy, Steven Chu, gave a great deal of attention to energy efficiency in his public addresses and policy statements (Charles 2009).

The Obama administration also made energy efficiency a key element of its strategy for economic recovery. It was framed as a triple win – saving homeowners money on their utility bills, reducing fossil fuel consumption and greenhouse gas emissions, and creating jobs in the weatherization industry. Thus the American Recovery and Reinvestment Act (ARRA, also known as the stimulus bill) included $16.7 billion for energy efficiency measures, to be deployed primarily through the Department of Energy (USDOE 2010). The Cambridge Energy Alliance was even mentioned in a speech to Vice President Biden and his Middle Class Task Force about the potential of energy efficiency initiatives for economic recovery (Podesta 2009).

The transition from Phase 1 to Phase 2 – from emphasis on a business logic to emphasis on a non-profit logic – was in part an adaptation to this shifting institutional context. Commenting on this new state of affairs, one CEA manager said in the fall of 2009, *"There has never been a better time in history to be a non-profit working in energy efficiency."* Thus CEA's changes resulted in part from a retrospective look at success and failure (Process 1), and partly from a prospective look at new revenue sources coming available (Process 2).

We can see further evidence of the CEA team's acknowledgement of the changing context in a parallel setting. Several of CEA's founding consultants began advising the Greater Cincinnati Energy Alliance (GCEA) in 2009. From the ground up, GCEA was built around the idea of a munificent government funding environment. It focuses primarily on residential energy efficiency (an activity that is less likely to generate client service revenue). After two foundation seed grants, GCEA's main source of funds is a group of cities and counties in Ohio and Kentucky that agreed to pool their Energy Efficiency Community Block Grant (EECBG) funds endowed by ARRA. GCEA then won a substantial grant from the federal Department of Energy as part of the Retrofit Rampup program. GCEA plans to draw almost entirely on this kind of federal funding at least for the first few years of their operation.

Unlike GCEA, however, CEA did not operate with a clean slate. Its imprint from the earlier era had real consequences, notably the $2.5 million in debt with accumulating interest from the CEA founders' notes. This structural tension helped contribute to the continual search for revenue opportunities that could both support the organization's efficiency programs and pay off the debt load. The transition to Phase 3 and a more complex way of operating is partly a result of that search.

Process 3: Reframing the organization amid successful failures

These first two processes – learning from failure and adapting to institutional context – help us partly understand CEA's shift from an early phase of business logic to a middle phase as a "traditional non-profit." They do not, however, fully explain the shift to the third phase of more complex hybridity. A third process fills this gap. It provides evidence that not only the organization's failures led it toward a nonprofit form, but its "successful failures" – ambiguous situations in which the definition of success and failure is a matter of debate – did as well.

Over the course of its work, CEA has helped catalyze energy efficiency projects outside of their fee-for-service business model. Residential customers pursue energy audits through CEA, but then work with outside contractors to implement home improvements. C&I clients work with CEA's ESCos on preliminary energy audits, then roll the findings into programs of investment that they conduct

internally or with competing contractors. As described in Chapter 3, they seek to participate in CEA's public campaign without engaging them as a service provider.

From the logic of private service, these indirect effects are seen as failure (because they do not draw revenue), while from a logic of public service they are seen as success (because they advance city-level climate goals). This contradiction – what I call the *catalyst's paradox* – created a dynamic tension between the institutional logics that make up CEA. As actors in CEA sought to frame the organization as successful, and to capitalize on what they catalyze, they first contributed to CEA's drift toward grant funding and an identity as a public service non-profit (Phase 1 to Phase 2). Then as they came to understand what I call the Catalyst's Paradox, they learned to work with it more constructively (Phase 2 to Phase 3).

The result of this reframing was both a redefinition of the organization in terms of being a catalyst, and the pursuit of projects that took more creative advantage of their hybrid identity in the community. It was in this context that the new mission statement quoted earlier came to be.

Integration

I have briefly described three processes that explain the changes in CEA from Phase 1 to Phase 2 to Phase 3, summarized in the bottom half of Table 9:

> Process 1: Learning from success and failure
>
> Process 2: Adapting to a changing institutional context
>
> Process 3: Reframing the organization amid the ambiguity of successful failures

For Process 1, the critical events are successes and failures at their early business model, in which they planned to broker and capitalize on energy efficiency projects (events which I explored in depth in Chapter 3). Actors in CEA learned from the pattern of events that they could be more successful as a grant-driven non-profit than as a revenue-driven business. This represents a kind of experiential organizational learning (Levitt and March 1988; Huber 1991). As a mechanism it is particularly useful in explaining the shift from Phase 1 to Phase 2.

For Process 2, the critical events are shifts in the political and institutional environment of energy efficiency and climate change. Actors in CEA see the policy changes and grant funding by the federal government, and anticipate that a grant-driven non-profit model will continue to be successful in this environment. This adds to the explanation of the shift from Phase 1 to Phase 2. Here we see a kind of

adaptation to the institutional context (Fox-Wolfgramm, Boal, and Hunt 1998) and to changing resource dependencies (Pfeffer and Salancik 1978), phenomena that resonate with past literature on organizational change.

For Process 3, successful failures are the critical events, along with a gradual reframing of these ambiguous events, the organizational identity, and the kinds of projects that CEA might pursue.

This third process in particular bears further elaboration because it is novel, surprising, and sheds light on some unexplored aspects of hybrid organizations. At the center of Process 3 lies the particular challenge of defining success amid a dual public and private mission. While the issue of goal definition has been raised more generally by previous studies, there is a particular dynamic –the *catalyst's paradox* – that has not been sufficiently explored and that the case of CEA helps identify.

The remainder of this chapter thus focuses on Process 3. What were the most important successful failures in CEA's history? How were these framed and reframed over time, contributing to the shift from Phase 2 to Phase 3? What do these processes reveal about hybrid organizations more generally?

Successful failures at CEA

Early conceptualization of success and failure

From the period of CEA's founding through initiation of its energy efficiency programs, there were two sets of distinctions that organized its business model. The first was a market segmentation that it borrowed from the utility industry – energy users can be divided into residential vs. commercial, and small vs. large. To each of the four resulting market segments, CEA assigned an internal client manager and an energy services company who could implement energy efficiency projects.

The second distinction was an array of four funding sources that CEA would obtain in return for servicing these market segments.

- Clients would directly compensate CEA for their work in brokering and overseeing energy projects.
- Government-mandated market mechanisms would pay CEA for each project's contribution to two public goods – electric grid demand reduction (through the Forward Capacity Market) and greenhouse gas reduction (through the Regional Greenhouse Gas Initiative).
- Government funds, arriving through community block grants and other municipal funding mechanisms, would fund CEA's programs in the hopes of helping them attain city-level energy and environmental goals.

- Foundation grants would support CEA's general operations, its specific local programs, and its efforts to serve as a "national model" for other towns seeking innovative climate change solutions.

The business model assumed that all four types of funding would be possible to attain for work in each market segment. It also assumed, however, that the small businesses and residences would be less lucrative than large commercial and institutional clients – that the large would subsidize the small. In the early days of CEA, the idea of some contradictions between its private and public mission did arise, but they focused on this tension between the small and the large. This is evident in an early interview in July 2008:

> *To put this in perspective with City objective, to reduce greenhouse gases, the fact that this is a City run effort is belied by the fact, or illustrated by the fact that we are doing small customers. Small customers will be 90% of participation in numbers, but only 15-20% of greenhouse gas reduction. And then about 150 organizations, including Alpha and Beta will deliver 70-80%. We are trying to serve thousands of customers, only 150 of which will do 80%. In that respect it's a political exercise… These are decisions largely made by political actors, like the City Manager responsive to the City Council. Lots of effort to get low-income customers involved… These other goals are to some extent competing for the reduction in greenhouse gases.*

In this early period, the idea of indirect effects, in which CEA might influence people and organizations to invest in energy efficiency without being able to engage them as clients, was not a salient issue. To the extent the issue arose at all, such indirect effects were implied to be a benefit, part of launching a campaign or movement in the City.

> *I don't know if I'm the only one, in the core group, but my view is the key to this is to organize a web campaign not unlike the Obama campaign. Where you offer so many opportunities that are enriching to get people in competitions, critique the program, testimonials and case studies, organize each other. Trying to get participation an order of magnitude greater than a utility program. Good utility program is 1% per year. We are trying to get 10% per year.*

One place where an issue did surface was in contemplating the design of a recognition program for participants in the CEA program. If CEA were to provide a "gold seal" on homes and storefronts, would it be for working with CEA as clients, or for simply reaching an ambitious benchmark of energy use? Should prior efficiency efforts be acknowledged? Should work outside the CEA umbrella be acknowledged? This conversation remained academic, however, until the launch of CEA's energy efficiency program offerings.

The problem of indirect effects became more salient and pressing once CEA started to engage with clients. This recognition began in the residential sector, and then became salient in the C&I sector through the Alpha, Beta, and Gamma clients whose stories I elaborate below. These were the cases in which CEA was not successful in engaging clients to conduct energy efficiency projects in a fee-for-service arrangement, but where the organizations did conduct projects in part influenced by CEA. The purpose of these narratives is not to explain the "failed" client transactions (the previous chapter explores the issues at play in CEA's legitimacy and efficacy as a service provider). Rather the stories focus on the internal interpretation of results and implications for CEA's changes in identity and strategy.

Successful failures in the residential program

CEA began concerted outreach to homeowners in September, 2008. They had selected Conservation Services Group (CSG) as a partner in the small residential building sector. CSG had a standing contract with the utility company NSTAR to conduct home energy audits throughout Massachusetts.[15] CSG's program with CEA would be an extension of this effort. Customers would receive a brochure or other marketing materials from CEA. They would then fill out a contact form on the web or call a special phone line that CSG had set up for CEA customers. The call center representative would pre-screen the homeowner for eligibility and then schedule a free home energy audit. The audit, when completed, would be a slightly more thorough audit than the one usually provided by NSTAR (e.g., including a rough assessment of potential for solar panels). It would also include an offering of two special services: CSG's installation and arranging services for home energy efficiency measures such as insulation, air sealing, and heating system upgrades; and a financing option via CEA's partnerships with two local banks.

Originally, CEA anticipated that customers would sign up for financing and installation with CSG because of the convenience involved. Economic and policy analyses of the energy efficiency industry have indicated that transaction costs are a primary barrier to getting EE done (Brown 2001). This assembly of a "one stop shop" was an attempt to decrease those transaction costs. In fact this logic of being a one-stop shop has been central to CEA's discussions of their offering and identity throughout their history. CEA hoped that their convenience would be a value-add and would enable them to charge a 3-5% markup on installation costs to support the residential program.

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[15] See Chapter 5 for a brief narrative of CSG's history as a comparison to CEA.

As the results of energy audits came back from the field through the fall of 2008, however, it seemed that something else was going on. Residential customers were calling CEA/CSG to do energy audits, then taking the suggestions to outside contractors for bidding. When CEA reached out to customers to understand why this was occurring, the most common answer was that they simply did not know or trust that CSG was offering them the best price for home energy efficiency services. In an uncertain economy, the prospect of taking on additional debt through CEA's financing mechanisms was also not an attractive proposition.

In analyzing discussions about this topic in my field notes, I developed a grounded code called "Inside Outside": meaning making about green energy investments happening inside vs. outside CEA's direct involvement. CEA managers saw this as a problem and as a conflict between its public service mission and its need to sustain itself as an organization. In a Core Group meeting 12/2/08:

> *Person 1 - Let's keep in mind that any projects [done with others' resources] don't produce revenue to CEA. If we are really bringing them… doing their marketing for them…*
>
> *Person 2 - We should get fee.*
>
> *Person 1 - Not in CEA's interest to pursue and promote -* ***maybe from political standpoint but not financial.***
>
> *…*
>
> *Person 3 -* ***From an organizational mission standpoint, it's right to do, but it doesn't create sustainable entity.***

The following day, in a residential strategy meeting on 12/3/08:

> *Person 2 - Yes, partly because we know people doing heating systems but not using CSG to do it.*
>
> *Person 4 - We can still capture that as success.*
>
> *Person 2 - Yes but need CSG to be compensated… Already down 115K expenditures with no revenue…. Sooner or later… they will say we're out of here.*
>
> *…*
>
> *Person 4 - Speaks to idea of how create immediate successes. Doing multiple measures is measure of success. If person decides to do heating system but not through us then we lose track. Or massive uptick in audits in Cambridge… amount of uptick…* ***what are our measures of success?***

This final question captures the essence of the problem. What can CEA count as success, given the mix of a public logic that dictates reducing energy use throughout the community and a private logic of achieving financial sustainability through transactional revenue with particular clients? How should it make sense of indirect effects and successful failures?

The outcome of these conversations (in December 2008) was that CEA responded to the customer trend by giving up on the idea of a markup fee in the residential sector. If customers did not take them up on their offer, it would be best to lower the price and complication of trying to secure a markup.

In parallel, a second revenue stream for this residential work also seemed increasingly elusive. CEA had planned to track its transactions with small customers, track the energy and greenhouse gas savings associated with these transactions, and bundle the savings together for sale in artificial markets. The Independent System Operator of New England (ISO-NE) had created a Forward Capacity Market (FCM) to ensure a future match between energy supply and demand; CEA is authorized to sell demand reduction credits on the FCM. Similarly, the Regional Greenhouse Gas Initiative (RGGI) of New England created a market in which CEA could sell energy demand reduction as carbon offsets. These market-based mechanisms had been created by government regulation as a way of correcting market failures (the first due to short planning horizon, the second due to externalities).

Artificial markets like FCM and RGGI theoretically allow organizations operating with a private sector logic (providing services, buying and selling credits) to contribute to public good. As such these markets require a careful accounting of private transactions' contribution to public good. When CEA's customers went outside its umbrella to carry out energy efficiency improvements, this accounting became impossible. Further, even if CEA had executed residential projects, the measurement and verification of projects to make them sufficiently credible for the FCM and RGGI markets would be excessively costly given their small scale. Thus CEA gave up on the idea of securing these "attributes" in their residential work.

As described above, CEA had already contemplated the idea of the "large" subsidizing the "small." Now it seemed that the subsidy would be complete. CEA accepted the outcome as part of their mission to provide a public service to the citizens of Cambridge. The revenue and perhaps even the logic of client service transactions did not seem to fit here. Instead they saw potential for securing grants from government and foundations aimed at the small residential sector. In

considering the prospect of hiring a community outreach coordinator for the small sectors, one manager said:

> *The dilemma is if we hire someone it's another mouth to feed, but if we don't hire then we eliminate our ability to get attention and Foundation money. Have to get going and get some visibility. Residential and small business will never generate a lot of revenue but will generate buzz and attention. Between Chorus, Barr, and Kendall Foundations, I think we can hire and support this person for a few years and support most of what we want to do. Just have to get going with this. (Field notes, 12/10/08)*

In early 2009, CEA did in fact secure new grants from the Chorus and Barr foundations. They also joined solicitations for funds from the Massachusetts State Energy Program, the federal Department of Energy, and the US EPA. These grants would require CEA to perform certain activities such as canvassing and community event participation, as well as demonstrable contribution to city-wide carbon and energy reduction goals. They would not, however, create accountability based on individual transactions with homeowners – they aligned with a public service rather than a client service institutional logic.

Successful failures in the residential sector therefore contributed to the transition from Phase 1 to Phase 2 and the ascension of the non-profit logic.

Successful failures in the large C&I sector

The dominance of non-profit, community-organizing logic was never, however, complete. For the large commercial, industrial, and institutional (C&I) energy users, CEA still employed client managers targeting universities, hospitals, and biotechnology companies. On that side of the organization, a client-service business logic continued to be in play. Prior to resigning, the CEO hired a marketing consulting group to do interviews with managers of local biotechnology firms to understand their decision drivers. The client managers developed increasingly detailed worksheets for tracking the progress of individual projects through a sales cycle.

As described in Chapter 3, this outreach to C&I clients was not altogether successful. CEA faced unexpected challenges of legitimacy, given its newness as an organization and novelty as a hybrid form. Some of the C&I clients, however, can be understood as successful failures. Like the residential clients described above, these clients engaged with CEA but then chose a different ESCo to conduct projects, or decided to conduct projects using internal resources or independent contractors. In these cases, CEA had made an important contribution to the client's energy efficiency, but not one for which CEA was compensated.

The Beta organization was a salient example. Beta engaged CEA to do a preliminary energy audit, following an introduction by the City Manager. Beta compared CEA side by side with a traditional ESCo and chose the latter. An informant from Beta had the following to say about this outcome:

> *OK, so you didn't get the job. But if you look at your highest level goals around reducing the greenhouse gas footprint of Cambridge, we're still achieving that goal. We haven't contracted with you but we have contracted with a reputable firm and we are doing things. You know, I don't mean this as consolation prize, but at the highest level… the reason for your existence is being addressed by the path of action that we're taking.*

The "reason for your existence" here refers to the public service mission of CEA to meet city-level goals. Those goals were particularly salient to Beta, whose staff had actively contributed to the Cambridge Climate Action Plan several years before. From their perspective, CEA's work with Beta could be framed as a success. It engaged the senior leadership of the organization in a conversation about energy efficiency. Further, CEA's analysis of the facilities was incorporated into the final scope of work that the other ESCo will execute, expanding the range of measures that will be done.

CEA did not see it this way, at least initially. The Beta case was felt as a tremendous blow, precisely because their mutual tie to the City's climate change agenda made them a likely client. One manager said to me,

> *There is a problem in being labeled as a non-profit - people say you are mission driven and that's code for we don't need to give you any money. Beta is eager to say they'll share their data and contribute to the community effort, but they're still going with [other ESCo].*

Although not directly attributing his decision to the Beta outcome, CEA's CEO resigned from his salaried position two weeks later, citing the need to reduce the organization's operating costs in order to keep it viable. A conversation began among the remaining management team about how to make sense of this outcome and how to move forward. A client manager had this to say:

> *We took such a hit with Beta and Epsilon that we really put on the brakes to say what can we do differently… I don't mind… well I kind of do mind doing what I've doing. We need to get people together to absorb these failures, and get common thought on how to proceed and then proceed.*

Within a private sector, client service logic (CEA's interpretive frame and strategy for securing resources) Beta was a failure. The implications of this interpretation are discussed further below.

There are, as well, other kinds of client interaction that fall along a spectrum: circumstances in which green energy investments are happening with CEA's direct involvement, as an indirect result of their work, or independent of their work.

Gamma, for example, pursued a mixed strategy. They invited CEA to conduct free energy audits on some of its facilities, then broke off the engagement and decided to conduct the recommended retrofit projects with their own internal construction and financial resources. On other facilities Gamma implemented projects with little to no direct involvement from CEA. In parallel, Gamma worked with CEA to support it financially as they would a charitable community organization, through donation of FCM credits. Yet they want all of these activities to be considered part of the community campaign to promote energy efficiency and demand reduction. One representative from Gamma had this to say:

> *I think there is a lot of opportunity for CEA to reach their goal without necessarily doing it themselves. And I think that has been… sort of a sticking point for me.* ***Whatever we do, if we reduce our demand, that will represent a significant decrease in greenhouse gases in Cambridge.*** *And CEA won't have had to do very much. Perhaps they should embrace that a bit more. It's part of the deal, it's part of the Cambridge thing…* ***But my impression is if they don't do it, they don't want to have anything to do with it****. That's a not a good city goal. They should be looking at what I call the '****parasitic opportunities****.' Not trying to control that, as much as encourage and support that.*

The Gamma quote further illustrates a contradiction at the heart of CEA's hybrid identity. As a public service organization, CEA has city-level targets in terms of energy reduction (50 MW of peak load), penetration (50% of residences and businesses), and capital investment ($100 million of investment mobilized). These could be reached through a variety of means, including persuasion, education, policy design and advocacy. Direct implementation is but one strategy. From this logic of public service, indirect effects and "parasitic opportunities" – perhaps claiming credit and press for the campaign based on others' work – would mean success.

This possibility had occasionally been part of the CEA conversation. In 2008, before the organization's financial troubles came to a head, CEA executives explicitly considered what Gamma described.

> *That's where we need to be… we need to take some credit for that. Regardless of whether we do [the project] directly or they do it… in terms of overall impact of CEA, if we're working with Gamma it all gets blended together. In terms of being a national model and getting things moving, it's all part of one happy family, hopefully.*

On the other hand, CEA is a client service organization, with a particular offering and a business model that depends on project revenue in order to sustain its operations

and pay off its debt-based financing. From a logic of private service, "parasitic opportunities" are seen as failure and exacerbate its financial troubles. The idea of "one happy family" cannot get traction without a corresponding revenue model. Thus, as CEA focuses on opportunities for fee income, they create the impression that "if they don't do it, they don't want anything to do with it."

The case of Alpha illustrates a problem with this latter stance – that CEA becomes unable to acknowledge the progress that is being made without their involvement. Alpha had been an early ally of CEA and participant in the design charettes that crafted its business model. Once the C&I program launched, Alpha facilities staff brought CEA in to conduct walkthrough audits and propose efficiency projects. Alpha decided not to go further with CEA and its ESCo partner, however; like Gamma they preferred to use in-house financial and human capital to execute projects, even though this would mean slower progress than contracting with an ESCo. CEA continued to aggressively pursue opportunities to engage Alpha as a client, but became increasingly frustrated. One manager said,

> *I knew going in that I would eventually get them on board. I am not giving way here. I'm going to be tactful and I'm going to go through the right channels and so forth but we WILL get them to do what they gotta do.*

Gradually, however, this assertiveness gave way to resignation. At a CEA board meeting in mid-2009, the following interaction summarized the feeling.

> *Person 1 - I would say Alpha is not low hanging fruit.*
>
> *Person 2 - We have completed a building survey… Talking about a project there… we are a square peg in a round hole. They do a lot of talking.*
>
> *Person 3 – So we are 'pre-breakthrough.' [all laugh]*

From Alpha's perspective, however, progress continued. The organization incorporated CEA's audit findings into a list of potential energy projects, to be prioritized by return on investment. It then undertook a process of raising and allocating a variety of funding sources to that list of projects. As I quoted in Chapter 3, one Alpha representative said,

> *We can get some good stuff going, whether it involves CEA or not. I got frustrated with the "why aren't we doing anything with CEA" questions lobbed in. I'm not committed to CEA. They need Alpha as a marquee name - and need in their portfolio.*

In fact Alpha has a plan to invest $13 million dollars on energy efficiency measures. As these are completed and publicized, they could be "parasitic opportunities" to build momentum in the city-level campaign. One Alpha executive suggested this very possibility.

Alpha exec: I see [CEA] at the political and dissemination level. I still relate everything we do to our mission. Even if it's administration, even if it's about this [building improvements], it's about disseminating knowledge. I see CEA as a very key vehicle in doing that - in partnership with City… Making sure that our methods, Alpha methods, are understood and potentially disseminated across many others… There are many projects in that list that could be interesting advancements in understanding how savings could be achieved. I would see our contribution and our partnership with CEA would be a much better platform for disseminating knowledge…

Not only that, but a bolder proposition, I think. If we are like a testbed for CEA and we reach x% of goals, you could almost push that to be in the regulations or expectations of the City of Cambridge. This is about being a citizen of the world. So there are two avenues, I think. One is the actual case study, which you can replicate. The other is from the case study you could derive real policy implications and expectations of good citizenship.

It remains to be seen whether or not CEA takes advantage of these "political and dissemination" opportunities.

Responding to successful failures in Phases 1 and 2

What CEA has done is reconsider its approach to engaging and servicing clients. In the meetings and backstage conversations that followed the Beta "failure" in the spring of 2009, CEA questioned all aspects of the business model. Is CEA's value-add worth the 3-4% markup they are asking above the ESCo pricing? Was Beta the right kind of client to pursue, given their existing familiarity with the ESCo approach and relationship with another ESCo? Are CEA's competitively selected ESCos skillful enough in identifying the technical opportunities, and engaging with facilities managers? Does CEA have a fundamental credibility or legitimacy problem as described in Chapter 3?

CEA gradually settled on a new strategy for Large C&I clients. Rather than approach clients immediately with ESCos, they chose to take a more consultative approach and offer services with less intensive financial and physical capital investment. These offerings include: consultation on a "sustainability strategy" for the client organization; education of clients' employees about energy and environment issues; organization of employee behavior change campaigns to conserve energy; and knowledge- but not capital-intensive projects like re-commissioning and reprogramming electronic building energy management systems. Such services are designed to save some energy, help client organizations cultivate a green image for employees, and provide a progressive face for cost-cutting efforts amid the economic crisis. They might also be a "stepping stone" toward more intensive capital projects with deeper, more lasting energy savings. Building on the Beta experience, they would avoid placing CEA in direct competition with other ESCos

until after a relationship is established, although they are certainly in competition with other sustainability consultants.

These strategic conversations of mid-2009 did not, however, confront the basic contradiction between public and private service logics. The new offerings continued to focus on serving the "parts" – the individual clients with whom they can develop a revenue-generating partnership. Initiatives focused on the "whole" of the Cambridge C&I building sector – such as a recognition program for organizations making investments outside the CEA umbrella – remained quietly on the back burner.

Thus, after its first year of program implementation, CEA was in the midst of an unanticipated change. The organization had formed two distinct groups with distinct logics and strategies – a small residential community outreach apparatus, and a large C&I consulting practice. While the consulting approach was being developed, the basic relationship between the small and large businesses had flipped – CEA had assumed the large would subsidize the small, but now grants acquired to support the small were subsidizing the development of a new model for the large. It was this basic fact that led to acknowledgements at board meetings that CEA was coming to operate "more like a traditional non-profit." Confronting the IRS's challenging response to CEA's original application for 501(c)(3) status, they considered resubmitting their application with a depiction of the organization as far more dependent on grants as it had become. Again, we see the shift from Phase 1 to Phase 2.

Defining new kinds of success

In this context, however, some new kinds of interaction started to emerge. First, as described in Chapter 3, the residential team in CEA had successfully negotiated an innovative grant from NSTAR to support CEA's residential outreach. This grant included concrete goals for energy use reduction in Cambridge (measured in kilowatt-hours and therms), but without the requirement of CEA's conducting and tracking individual transactions. Rather, progress would be measured in an overall increase in the number of energy audits conducted through NSTAR's programs, and energy use reduction among residential customers in aggregate. This funding stream, if it proves repeatable, would reward CEA's service of both individual clients and the community as a whole through education and outreach that has indirect effects.

Second, CEA has begun exploring a greater variety of arrangements with client organizations that leverage its role as a community organization. It worked to broker a relationship between the Cambridge Health Alliance – a potential customer

for its new consulting services – and MIT business students in a course on sustainability. This action sought to leverage CEA's role as a community organizer with ties to student and faculty organizations. Although the students ended up opting for projects with more global organizations, this would have been an innovative route to better serving a key C&I client. A traditional consulting firm may not have had the connections or inclination to make this kind of connection. CEA similarly pursued an engagement with the Cambridge Public Schools, in which they would work with high school students in supporting energy audits in both their homes and the school buildings. This project again would both support a key C&I client and potentially catalyzes important indirect effects in homes and neighborhoods.

Third, starting in early 2010, CEA started crafting a special program focused on laboratory energy use, which they hope to use as an entry point to biotechnology companies and research institutions in Cambridge. Research laboratories account for the largest concentration of energy use and greenhouse gas emissions in Cambridge, and have always been a priority for CEA. Within the frame of CEA as a client-service organization, however, labs were always seen as an obstacle or challenge. The specialized nature of laboratory buildings requires very specific engineering capabilities from ESCos, and saving energy in laboratories must always be done very carefully so as to preserve human and animal health and safety (e.g., sufficient ventilation must be maintained).

In stepping back from individual client interactions, CEA realized that it might be able to play a role forging connections among organizations wrestling with common energy and environment problems in laboratories, building on the knowledge within the organizations as well as outside experts. CEA plans to play a facilitator role, convening a summit and monthly working groups that join companies, universities, and City government inspectors charged with assuring health, safety, and environmental compliance in laboratories. As an organization tied to the City of Cambridge, CEA has secured the commitment of these inspectors and regulators to participate in the initiative; their intention is to give laboratory organizations the confidence to move forward without being sanctioned by regulators. The involvement of inspectors could also create a draw for laboratory organizations looking to have a positive, proactive relationship with government. CEA plans to pursue a combination of funding sources for this endeavor, including outside grants and partnership with the Massachusetts Biotechnology Council, an industry association. Eventually as laboratories pursue energy efficiency renovations, CEA hopes to be involved as a service provider.

Finally, the small business recognition program described earlier – long held on the back burner because of its lack of clear revenue streams – was brought onto the docket of projects in the spring of 2010 for piloting and execution in the second half of the year. This work is in part funded by community block grant money from the federal government, routed through the City of Cambridge.

The common feature of these interactions is a somewhat more subtle synthesis of the public and private service logics within the CEA organization than had occurred before. They create funding streams that reward serving both the parts and the whole of the Cambridge building stock. They take advantage of CEA's distinctive role in Cambridge, established through its non-profit-style community outreach. And they create new combinations of human and financial resources in the community, all toward the goal of reducing energy use and greenhouse gas emissions.

Reframing the organization

Increasingly, CEA has begun to define itself in terms of this kind of combinatory, bricolage-like activity. An early trope to emerge was the idea of CEA or Cambridge itself as a "laboratory." This term came into most frequent use when CEA was confronting its major challenges in the C&I sector; in a sense the word helped reframe failures as necessary parts of a learning journey. For example in April, 2009 (the transition from Phase 1 to Phase 2), they even talked about bringing on a high-level volunteer to explicitly strengthen that identity:

> *Person 1 – We could get a Chief Scientist - if Cambridge is laboratory, make sure we are learning… Extends the metaphor. We are using CEA as a national laboratory… We talk about implementation organization rather than learning organization. Documenting what you've done is as important or more than what you accomplish. Test tubes. Laying down body of knowledge. Energy Advisor tracking calls, what doing, what works and doesn't. Experience.*
>
> *Person 2 - Hypothesizing and testing, and moving on when you've learned.*
>
> *Person 1 - Make sure we are recording so we can sell ourselves as a laboratory. (Field notes, 4/28/2009)*

While the idea of "laboratory" has been used to reframe failure, it also gets used in a more positive sense to characterize some of the innovative initiatives described above. In a core group meeting discussing some of the newer initiatives, for example, a manager said:

> *We can be creative, innovative, be a laboratory… It's all about getting as much done as possible. (Field notes, 9/2/2009)*

This idea of a Cambridge as laboratory underpinned CEA's application for a grant from the Kresge Foundation during Phase 2. This grant would support CEA's staff in educating and advising other cities around the United States so they could replicate CEA but learn from its challenges.

As CEA transitioned from Phase 2 to Phase 3, however, another trope emerged: the idea of CEA's serving as a "catalyst." Early in CEA's development, the word "catalyst" or "catalyze" appears only once in my database of archival documents, field notes, and interview transcripts.[16] In January, 2010, however, this concept became prominent in internal discussions as a new way to think about CEA. By this time, members of CEA had started talking more explicitly about the problem of having city-level goals but trying to deliver value to individual clients. They had read a paper I had written in which I discussed some of the contradictions that can arise between city-level and client service goals. In our discussion of ideas from the paper, a client manager introduced the idea of catalyst and used it to frame CEA's identity and mission.

> *Author - How much do we expect is going to happen as a result of CEA's direct action as opposed to the community as a whole, given CEA's existence here? I think that's an important thing... if Beta works with CEA to a certain extent and then goes with [other ESCo], they are still reducing their footprint, they are still moving Cambridge on all these goals. So that could be seen as a success or it could be seen as a failure.*
>
> *Person 1 - Especially in the way we word this.*
>
> *Author - Yeah. I think that is a point of ambiguity that is worth touching on in conversations about mission and goals.*
>
> *Person 2 - **I think it should be viewed as a success**. I mean... it doesn't help us, our bottom line, but that's not the purpose. We are trying to get people thinking about it and taking action regardless of how they get there.*
>
> *Person 1 - Because **when we say 'one stop shop' I question that. I think we are trying to be a catalyst. We are trying to be the thing that is added to this mix of ingredients that causes something to happen.** There is a lot of ways we can do that, but **when we say 'one stop shop' that implies that we step up and we command everything and that is never going to be the case**.*
>
> *Person 3 - I think that notion of being a catalyst is a good one.*
>
> *Person 4 - Yeah.*

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[16] A strategy document by a marketing consultant mentions the idea of a "campaign thermometer" displayed on CEA's web site that would "catalyze activists." This idea has yet to be implemented.

Person 3 - I think noting the context that CEA is operating in. It's not just CEA making stuff happen. There is stuff happening at federal and state level. There is municipal policy. There are other private initiatives... ***The mission could/should address that context or include that context and talk something about what CEA's role is as a catalyst, facilitator.***

Person 4 - I like that, and I think that... my feeling is that we ought to... acknowledge the fact that [other ESCo] and others not directly with CEA are doing stuff. And that is OK. It doesn't have to be this 'us and them.' So finding ways to indicate that if efficiency occurs in Cambridge, that's a good thing, doesn't have to be done by us specifically... is not only fine, it's something we ought to be acknowledging and talking about.

Person 1 - And we are certainly not trying to push the private sector aside. We are acknowledging that the government, the utilities, the private sector all have different programs. We are trying to get owners to step up and take advantage of everything that is out there. (Field notes, 1/20/2010)

Several things are notable about this interchange. First, Beta is being actively reframed as a success, where earlier in the organization's history it was considered a "blow to the organization." Second, the idea of being a catalyst is juxtaposed explicitly with what had been a dominant way of describing CEA's mission and offering, to be a "one stop shop." A significant feature of the "catalyst" framing is the shift in agency – rather than CEA doing the projects, or even driving the projects, it acknowledges that CEA is one among many influences on building owners (including policy makers). We see this shift reflected in the new mission statement of CEA, quoted earlier, which focuses on "educating, inspiring, and assisting" rather than doing the work directly.

A catalyst might acknowledge and reward actions happening outside its direct influence, although this idea is controversial:

Person 5 - And [Author's] point is not to take advantage of what other people do but give them recognition, promote it, somebody does something and we had nothing to do with it, still, give them recognition, promote it on our web site, do what we can.

Person 6 - We do get criticized for that.

Person 5 - By whom?

Person 6 - Well.. of saying that... you know, that CEA isn't really doing anything, we are just recycling others' successes.

Person 5 - If we do it right we shouldn't be criticized for it.

Person 1 - Well, if our mission is to reduce greenhouse gas emissions in Cambridge… then everything is fair game!

Person 5 - We are trying to get others to emulate what they did...

Person 3 - We could recognize people, not take credit for it…

Person 5 - Yeah, we're not taking credit for it…

Person 6 - Even when we've done that in the past…it has been… [a problem]

Person 7 - I do think that ties to how you define the mission. If CEA is there to do what others don't do…and to recognize what goes on by itself…

Person 5 - That word catalyst…

Person 2 [simultaneously] – catalyst… (Field notes, 1/20/2010)

CEA continues to wrestle with what it might mean to give (or take) credit for others' actions, and particularly how to sustain itself as an organization in doing so. As they invent new kinds of interactions with building owners, however, and explicitly reflect on the question, they are more directly confronting the tension between public-service and private-service logics described in this chapter. I would predict that this exploration will be characteristic of CEA's ongoing development.

Theorizing – the challenge of defining success

Bryson, Crosby, and Stone (2006) in their review of the literature on cross-sectoral collaborations, touch upon the question of goal definition and the challenges that might arise:

> *Competing institutional logics are likely within cross-sector collaborations and may significantly influence the extent to which collaborations can agree on essential elements of process, structure, governance, and desired outcomes. (p. 50).*

One valid way to interpret this proposition is to imagine competing priorities and perhaps factions. Whose rules of order will we follow? Whose interests will we serve? How will we enact diverse values such as efficiency, fairness and equity, transparency, and long-term sustainability? In domains where contentious interests are at play, it is easy to see where agreements may break down. For example, Layzer (2008) offers vivid case studies of collaborative environmental planning where real estate developers' concerns clashed with those of environmental conservationists; these clashes stalled negotiations and often favored developers who use their own participation as a bargaining chip. Such situations present a kind of zero sum game – land conserved vs. land developed in a finite territory.

In the domain of energy efficiency, by contrast, such conflicts are not nearly as salient. As described in Chapter 2, efficiency retrofits in buildings have a dual public and private benefit, yielding both cost savings and pollution reduction. So too in other domains where actions can yield public and private good: good agriculture practices that reduce chemical inputs and water and air pollution; process safety

management in high hazard manufacturing that saves lives and equipment; preventative health measures that prevent treatment costs for individuals and governments. These are domains where promoting the mix of public and private good would seem to demand a mix of actors and logics as we see in CEA.

In these domains, competing institutional logics are more subtle phenomena than overtly competing interests or factions. Instead they provide competing interpretive schemes. In particular, competing institutional logics make it difficult to determine, no less define, whether particular transactions are successes or failures. In reframing events as one or the other or both, the organization reframes its activities and identity and can thereby transform its organizational logic – either picking a winner among competing institutional logics or developing a novel synthesis between them. This process can underpin the "ongoing and largely uncontrolled flux" that Kraatz and Block (2008) predict in pluralistic organizations.

Given the potential importance of "successful failures" in determining the fate of hybrid organizations, it is worth exploring the particular conditions under which such situations occur. To do so, it is valuable to define the kinds of impact that an organization can have in the world, and the conditions under which those impacts get framed as success vs. failure amid competing logics. In the following section I develop a typology of "scopes of impact" and show how CEA's successful failures arise as a disjunction between two of the scopes. I discuss implications of the *catalyst's paradox* for CEA and similar organizations. I then discuss the fact that the catalyst's paradox is in turn part of a class of potential disjunctions between scopes of effects, some of which CEA has experienced. By stepping to this slightly higher level of abstraction, we can see some more general implications for hybrid organizations and the institutional contexts that enable and constrain them.

Scopes of impact

Hybrid organizations in energy efficiency and similar domains often seek to achieve a societal benefit (public service) through value-added transactions (client service). For example, CEA recruits people to conduct a home or business energy retrofit by exhorting them with a dual imperative to "Save Money. Save the Planet." The organization was originally designed to sustain itself through a mix of resources indicative of this mixed logic: client fees and proceeds from artificial markets in the business logic; and philanthropic and government grants from the non-profit and government logics. Such hybrid models are not unique to CEA nor to the domain of energy efficiency. It parallels closely the history of agricultural extension services in the U.S for example, whose work is partially subsidized by the government, partly supported by public minded institutions like universities, foundations, and NGOs, and partially covered by fees to farmers (Anderson and Feder 2003).

In this kind of hybrid organization, when client transactions are successfully completed and recorded, the dual missions of client and public service are aligned, and the original funder and investor goals are satisfied. These direct, intended transactions are not, however, the only outcomes or consequences of a hybrid organization's activity. Scholars of cross-sectoral collaboration and social entrepreneurship have identified an array of ancillary effects as well. These can include: new relationships formed within the collaboration leading to spin-offs and additional collaborative efforts (Innes and Booher 1999); transactions that imitate those carried out by the hybrid organization within the same geographic area or organizational field (a category explored in depth in this chapter); and imitation of the hybrid organization itself, leading to the emergence of new organizational forms and proto-institutions (Lawrence, Hardy, and Phillips 2002; Santos and Eisenhardt 2009; Maguire et al. 2004).

One tempting way to conceptualize these diverse effects is as hierarchical "orders" of effects. For example, Innes and Booher (1999) include spin-off collaborations as "second order" effects while direct impacts on the ground and institutional imitation are "third order." Bryson, Crosby, and Stone borrow this conceptualization when discussing the outcomes of cross-sectoral collaboration.

> *Cross-sector collaborations are most likely to create public value when they produce positive first-, second-, and third-order effects. (p. 51)*

The problem with such hierarchical ordering is that it implies a kind of stage model or Guttman scale, one in which each subsequent order happens if and only if the lower order happens. In fact it is exactly the disjunction between types of effects that make for the most interesting phenomena in organization studies. For example corporate diversity training continues to spread as an institutionalized practice despite minimal direct impacts on managerial diversity (Kalev, Kelly, and Dobbin 2006), illustrating Meyer and Rowan's (1977) classic idea of "myth and ceremony."

Thus in the table below I delineate "scopes" of effects, with the understanding that they may be decoupled from one another. Each scope corresponds to an increasingly wider "radius" from the geographic center of CEA's territory and/or its relational position in the inter-organizational network.

Table 10 – Scopes of effects for hybrid organizations, with examples from the domain of energy efficiency alliances.

Scope	Effects	Examples in CEA
1	Formation of hybrid organization or network; goal setting; planning	Early stage success in formation of CEA and similar alliances.
2	Social capital among allies, spin-off efforts	Development of workforce/green job initiatives building on relationships from energy service delivery partnerships.
3	Direct effects on the ground	Energy efficiency measures conducted under the CEA umbrella
4	Indirect, catalyzed effects on the ground	Alpha, Beta, Gamma, and residential clients conducting EE measures outside the CEA umbrella.
5	Replication and institutional effects of establishing new organizational forms.	Cincinnati and Mumbai imitating CEA

The essential problem I have explored in this chapter is that effects in scope 2 to 5 serve the public service logic of hybrid organizations, but only scope 3 aligns with the private, client service logic. In CEA's case for example, energy efficient building retrofits help "Save the Planet," whether or not CEA carries them out, but CEA only wins fee revenue for scope 3 projects. In certain situations, CEA fails at scope 3 transactions, but ends up contributing to scope 4 transactions through processes of education, brokerage, and imitation. In other situations (described later in this chapter), they help foster replication of their model nationally, but doing so is a strain on local resources and client engagement.

Catalyst's paradox

The concept of catalyst is not only useful in CEA's sensemaking as described earlier, but gives us a helpful label for the contradictions between public and private missions that arise in the context of these distinctions between scopes of effects. The **catalyst's paradox** arises when hybrid organizations "catalyze" transactions outside their umbrella of client service – these transactions are considered successes for the public service mission but failures for the client service mission.

The catalyst's paradox is not unique to CEA. A parallel stream of my research suggests that it has been prominent in the Energy Efficiency Partnership of greater Washington, DC (EEPGW). This organization facilitated public events bringing together building owners and energy service companies, in the hopes of helping broker deals for a markup fee. Like CEA, however, it saw many projects happen outside its umbrella. And like CEA, EEPGW has drifted toward a more public service logic as a result, focusing on education and job training for the EE sector (Jay et al. 2009).

Such contradictions and paradoxes provide a critical challenge to the basic iterative work of organizing and sensemaking (Weick, Sutcliffe, and Obstfeld 2005; Weick 1979). Like any organization, hybrid organizations prospectively define goals and prioritize activities, attempt to carry out those activities, bump up against constraints of the internal and external environment, retrospectively make sense of successes and failures, and adjust their activities and goals as they go. In the process an organizational identity emerges as both a product of action (the Weickian "How can I know what I think until I see what I say?") and a constraint on action as individuals seek to forge a coherent narrative about their work. That attempt at coherence can run aground on paradoxes like this one. Are these catalyzed transactions failures or successes? What are the consequences for the organization of defining them as one or the other?

A general theoretical proposition about the catalyst's paradox is as follows:

> *Proposition 9: In organizations with a combined mission to serve clients and achieve general social objectives, the catalyst's paradox will exert an important influence on sensemaking, identity construction, and organizational change.*

In fact, the case of CEA exhibits the hallmark behaviors of organizations grappling with paradox. In general, a paradox is a conceptual and epistemological challenge, involving two contradictory statements that are both true, or a single statement that contradicts itself such as "all rules are meant to be broken, including this one" (Smith and Berg 1987, p. 14). In the catalyst's paradox, the self-contradictory statement that "transactions that are the indirect effect of hybrid organizations' action are *both* successes *and* failures." As Poole and Van de Ven (1989) suggest, such paradoxes can be useful points of focus in theory building, helping scholars understand the tensions inherent in our concepts. They tend to lead theorists down one of four paths: holding both poles or ends of the contradiction as true, without attempting to resolve it; spatially or structurally splitting statements, particularly across levels of analysis, so that truths only look conflicting in different contexts; temporally splitting the contradiction so that contradictory statements are true at

different times; or developing a synthetic reframing that includes the contradiction (e.g., using "structuration" to resolve structure and agency paradoxes).

The paradox addressed in the present study, however, does not just exist in the realm of theory, but appears as a tension confronted on a daily basis by the CEA practitioners themselves. It arises in the course of action and becomes a pragmatic challenge akin to a dilemma (Lüscher and Lewis 2008; Smith and Berg 1987) or double bind (Bateson 2000) placing contradictory demands on action. The resulting behavior and outcomes correspond to Poole and Van de Ven's typology of theorists' moves amid paradox (Lewis 2000).

The first outcome is stasis or feeling "stuck" because the actor reflectively perceives the structure of the situation and realizes that any action will have contradictory effects. This has been characteristic of the actors in CEA at various points in the organization's history when they find themselves stymied in defining success for the organization and knowing how to allocate scarce resources. An example is CEA's recurring discussions about conducting a recognition program for homes and small businesses investing in energy efficiency – this idea was proposed by a marketing consultant in CEA's first year of existence but had yet to be implemented three years later. Discussions of whether to allocate resources to such a program partly hinged on the question of whether CEA should recognize projects it did not itself implement, which is at the center of the catalyst's paradox.

A second outcome is for individuals or groups of people to reframe or escape the contradiction such that one or the other side is no longer the actor's responsibility, a phenomenon described as "splitting" (Smith and Berg 1987). Within organizational contexts, splitting can result in different organizational subunits pursuing contradictory strategies, as when ambidexterity is achieved through cordoning off "skunk works" innovators (O Reilly and Tushman 2004). This is exactly the pattern we see for much of CEA's life, where the small residential team and strategy came to adhere to a public service logic while the large C&I business adhered to a private, client service logic.

Temporal splitting is a third outcome, and results in an oscillation behavior in which the actor alternates between polarities (Johnson 1996; Lewis 2000). We see this in the life of CEA, which began by asserting City-level goals, then developed a fee-for-service business model, then oriented itself toward grants to support its operations with less direct client accountability. It is precisely this temporal dynamic that contributes to CEA's evolution toward a more traditional non-profit model from Phase 1 to Phase 2. Thus I propose:

Proposition 10: Stuckness, splitting, and oscillation can be expected as organizational responses to the catalyst's paradox.

Scholars of paradox have differed among themselves as to whether and how any lasting resolutions to paradoxes might be possible, and what such resolutions might look like. They might involve temporary truces producing "workable certainty" (Lüscher and Lewis 2008) that guides one action at a time. Paradoxes may require that the actors involve confront, accept, and work with the deeper contradiction in an ongoing way, as part of leadership and collective sensemaking (Smith and Berg 1987; Smith and Tushman 2005) in order to achieve a more lasting "transcendence" (Seo, Putnam, and Bartunek 2004). Still others focus on the idea that oscillation between two contradictory poles is a natural pattern, such that accepting and managing oscillatory cycles might be another strategy (Johnson 1996). All, however, suggest that a particular quality of sensemaking and leadership is required, a capability to manage dynamic tensions and contradictions.

One compelling description and measurement of this capability has been framed as *behavioral complexity* (Denison, Hooijberg, and Quinn 1995) on the part of the individuals involved:

> *The concept of behavioral complexity is perhaps best understood as an analog to the concept of cognitive complexity. In the same sense that Fitzgerald (1945) noted that "the test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time and still retain the ability to function," the test of a first-rate leader may be the ability to exhibit contrary or opposing behaviors (as appropriate or necessary) while still retaining some measure of integrity, credibility, and direction. Thus, effective leaders are those who have the cognitive and behavioral complexity to respond appropriately to a wide range of situations that may in fact require contrary or opposing behaviors…*
>
> *If paradox exists in the environment, then it must be reflected in behavior. (Denison et al. 1995, p. 526)*

I use this behavioral complexity to refer to the more creative and dynamic thinking and actions that have emerged at CEA, each of which work toward a synthesis across the contradictions between business, government, and non-profit logics. These include: CEA's pioneering grant with NSTAR; its more complex client interactions with CHeA, the Public Schools, and the laboratory energy program; the ultimate launch a small business recognition program; the direct confrontation and acceptance of the ambiguities involved in successful failures; and its explicitly articulating a new framing of its identity as a "catalyst." Thus I suggest a more general proposition.

Proposition 11: When organizations find themselves stuck, splitting, or oscillating in response to the catalyst's paradox, behavioral complexity by individuals in the organization may enable the organization to move beyond these patterns toward creative synthesis.

Related contradictions

As I have hinted throughout this chapter, the challenges CEA has faced in defining goals and success, and its path-dependent evolution, are not unique to this organization. They arise from a more general catalyst's paradox facing hybrid organizations, which is itself part of the challenge of combining competing institutional logics (Bryson et al. 2006). This paradox rests on the problem of indirect effects: in hybrid organizations, indirect effects in the organizational field may forward the broader public mission but supplant direct client interactions on which the organization depends for revenue. Further research will be necessary to understand the contexts in which the catalyst's paradox arises, and the methods and approaches through which to navigate it.

For example, another interesting dynamic occurs with success in scope 5 (replication) but failure in scope 3 (direct implementation), which can take at least two forms. The first is neo-institutional "myth and ceremony" wherein organizational forms are replicated independent of their efficacy, so that replicants can obtain legitimacy and symbolic benefit (Meyer and Rowan 1977). A second is what might be called a "modeler's dilemma" in which social enterprises put excessive resources toward being a replicated "national model," and neglect results on the ground. In an earlier paper I touched on these dynamics at CEA (Jay 2009): since CEA's founding it has seen replication of its model in Cincinnati, OH and Mumbai, India, and received information requests from two dozen municipalities interested in possible replication. It has even received a grant from the Kresge Foundation to help it share lessons learned as a "national model." These "modeling" activities can distract staff from the local campaign, however, and the contradiction between local and national success is not lost on the CEA founders. One of the City staff had this to say:

> *We get invited like every other day to go and speak everywhere… Everybody loves it. Well… let me say this. It's always the case, it's very hard to be world famous in your own town… Here people are… they know us, and they know city programs, and they are much more critical. Where people out in the world are like oh, wow, that's amazing, I wish we could do that, and this is the big idea that's out there, and nobody is doing anything like that.* ***And I think both are true****.*

The public service mission – to reduce energy use and greenhouse gases – potentially benefits from replication, since climate change is a global problem

served by successful initiatives anywhere. This is only true, however, if CEA and subsequent initiatives are also successful in on-the-ground service delivery that secures revenue. This modeler's dilemma could therefore be seen as an extension of the catalyst's paradox in the broader organizational field.

> *Proposition 12: In organizations with a combined mission to serve clients and achieve general social objectives, a modeler's dilemma can arise in which resources devoted to replication compete with resources dedicated to local success, with similar effects to the catalyst's paradox.*

Catalyst's paradoxes in mission-driven businesses

Furthermore, the catalyst's paradox is not confined to CEA's particular form of hybrid organization (a cross-sectoral collaboration). It is also relevant to mission-driven private-sector organizations.

For example, the "green" home products company Seventh Generation entered a period of strategic reflection and soul searching in 2009 as a result of an emerging disconnect between their mission (public service) and their business goals (private service) (Hollender 2009). The company's original goal was to create a market for low toxicity and more environmentally sustainable home care products, and to serve as educators of consumers and the marketplace about the virtues of such products. Initially this was a very successful business proposition, and they enjoyed rapid growth (25-35% annually from 2000-2005) as a product company, as well as entrees into conversations with Wal-Mart, Target, and other major market players that they would never have had as a fringe catalogue company (their earlier incarnation).

Increasingly, however, their success drew new entry into the green products business by large traditional companies, particularly Clorox. These competitors threaten to satisfy retailers' demands for green products and price the niche Seventh Generation products out of the market; Seventh Generation is starting to see sales level off and anticipates their decline.

Seventh Generation's leadership team began a period of deep questioning about whether this trajectory constitutes a success or a failure, given their dual goals to be a successful business and to transform the market. In wrestling with these issues they have considered reframing themselves as an education provider, and have brought on staff to conduct educational programs with manufacturing companies about green product development and production. This line of work could, however, further empower their competition. Again, the combination of public service and private service logics creates this tension. One could imagine the company oscillating between despair and hope, and between strategies of taking

credit for Clorox's progress – maybe even seeking business partnership or acquisition – and downplaying that progress as a copy of their own pioneering business model.

Enabling hybrid organizations: Implications for policy and practice

There are a few implications and questions that arise from this analysis. First, it strikes a cautionary note for individuals and institutions looking to create and support hybrid organizations. The catalyst's paradox can put great strain on managers looking to both sustain their organization and realize a dual mission. It may be that separate public policy and private service organizations working in concert (or even in tension with one another) may be able to avoid the paradox altogether: perhaps a return to the traditional conception of government creating incentives and sanctions to encourage action, while firms provide services that help people follow the rules. As described in chapter 2, however, problems like climate change are a result of dual market and policy failures and may therefore necessitate new kinds of hybrid organizations, networks, and institutions (Bryson et al. 2006) or at least coordination between different organizational types.

If we take the emergence of hybrid organizations and networks as given, then the question becomes one of how to enable them to effectively navigate the catalyst's paradox, modeler's dilemma, and other contradictions between institutional logics that arise. In this chapter, I imported the concept of behavioral complexity from the leadership literature to suggest that particular capabilities might be required of people staffing and managing hybrid organizations. Moving one step beyond internal dispositions and capabilities, there is also an important role for organizations in the immediate network of a hybrid organization, particularly its clients and funders, to also develop more complex understandings and behaviors. This idea was emphasized in chapter 3 because the paradox of hybrid legitimacy can only be navigated in conversation with exchange partners. It is also true in the positive cases explored in this chapter, in which NSTAR, the public schools, and the biotechnology companies will have to approach CEA's proposals with an open mind. Thus I suggest:

> *Proposition 13: Behavioral complexity among a hybrid organization's exchange partners will enable the organization to more easily navigate the catalyst's paradox.*

It is also valuable to examine the broader institutional context of hybrid organizations. What kinds of funding and human resource streams are cognitively conceivable, normatively valid, and codified through corporate and government policy? It is tempting to suggest that a simple mix of government and private sector money will enable hybrid organizations to operate in complex, creative ways. In

fact some forms of government policy simply exacerbate the problem because they rely on organizations to conduct individual client transactions. We see this where CEA has sought FCM credits and carbon offsets. These mechanisms work through *internalization* of market externalities – putting a market price on the public benefit or harm created by market transactions. Because they are bound to particular market transactions, however, they create the same problem for indirect effects as does fee-for-service *compensation*. It is only a special kind of funding, such as that provided by NSTAR to CEA, that helps resolve the problem by creating accountability for territory-level goals (serving the whole) through direct and indirect effects. We might label this form of funding *donation.* Some private sector resources can be garnered through indirect effects, but only indirectly, for example if Beta were to refer other clients to CEA as a gesture of *respect* for the work CEA had done to support Beta's endeavors. Table 11 below shows four different categories of support that hybrids can and should garner in order to support more complex modes of operating.

Table 11 - Types of funding for Scope 3 and 4 effects.

	Public funding	Private funding
Scope 3 Direct effects	Internalization: SBC, FCM, RGGI	Compensation: Client service fees
Scope 4 Indirect effects	Donation: Grants for serving the whole	Respect: in kind, status, referral

Putting these together, I suggest the following:

> *Proposition 14: Overcoming the deleterious effects of the catalyst's paradox will be easier in policy and funding environments that offer multiple forms of compensation to the hybrid organization: internalization, compensation, donation, and respect.*

In the concluding chapter of this dissertation, I synthesize my results and consider a question that follows from this proposition – how might CEA shape its institutional context so as to make their own navigation of these paradoxes easier?

Chapter 5 – Conclusion

This dissertation has used a theory-building field study of the Cambridge Energy Alliance to better understand hybrid organizations – organizations that combine institutional logics – in this case the logics of business, government, and civil society non-profit organizations. Such hybrid organizations – and the institutional entrepreneurs that create them – seek novel solutions to complex social, economic, and environmental problems. Extant literature, however, reveals their contradictory tendencies. Hybridity is both an asset and a liability for organizational effectiveness because it creates possibilities for both robustness and confusion. Hybridity can lead organizations to change toward more simplified practices that conform to single logics, and toward more complex forms enacting innovative practices at the nexus between logics.

These contradictions suggest the following questions that I have addressed in the preceding chapters. Under what conditions are hybrid organizations effective in internal coordination and external exchange? How are the contradictory robustness and confusion effects experienced and navigated in practice? How do hybrid organizations change over time? Under what conditions do they resist the domination of a single logic and instead innovate in the space between logics? How do these processes of simplification and complexification interact, and how are they experienced in practice?

My overarching argument has been that institutional entrepreneurs are more likely to generate value from hybridity when they engage with two paradoxes of hybrid organizing, and develop explicit strategies to navigate through them.

The first paradox was revealed in Chapter 3, in which I explored the questions about effectiveness. A cross-case comparison of CEA's exchanges with financiers and clients revealed that failures and delays occurred under three conditions best understood in terms of legitimacy (Suchman 1995): when CEA was seen as confusing or cognitively illegitimate ("a multi-headed hydra" as one client manager described); when it was seen as undesirable or pragmatically illegitimate, as when clients preferred to maintain internal control of energy efficiency projects rather than bear the risk of a long-term relationship with CEA; and when it was seen as improper or morally illegitimate, as when the City of Cambridge required special legislation to avoid the appearance of conflicts of interest. This pattern, along with extant literature, helped reveal the *paradox of hybrid legitimacy*. Being a hybrid organization expands the number of potential exchange partners who might provide the hybrid organization with critical resources. Hybrid organizations may have less

success in completing the exchange, however, because their hybridity violates cognitive and normative schemas – i.e., it is illegitimate – among those exchange partners. In navigating this paradox, CEA suffered both inaction – it avoided engaging with some important exchange partners in the life sciences industry because of concerns over how to present itself – and oscillation between portraying itself as a public-service non-profit and portraying itself as a client-service business.

Ultimately CEA was effective when legitimacy concerns were mitigated as a feature of its relationship with specific exchange partners. Success occurred through three conditions: personal legitimacy (established in personal friendship ties or structural co-membership ties); situations where CEA's exchange partners were themselves hybrid organizations accustomed to the blend of institutional logics; and situations in which CEA offered options for exchange that fit the conventional schema of donation to a community-based non-profit organization.

The second paradox emerged in Chapter 4, in which I explored questions about change, and the dual pulls toward more simple and more complex ways of operating in hybrid organizations. I examined CEA's pattern of change and identified three phases, in which it hewed closer to a business logic in Phase 1, to a non-profit logic in Phase 2, and then towards a more complex hybridity in Phase 3. In other words, it moved among poles of simplicity and then toward greater complexity. To explain these transitions I identified three contributing processes: learning from clear success and failure with exchange partners; adapting to institutional changes related to the election of Barack Obama and passage of the ARRA stimulus bill; and reframing the organization amid the ambiguity of "successful failures."

As this third dynamic related to successful failures had not been previously identified, I explored it in depth. I found that it occurs when organizations indirectly catalyze but do not directly capitalize on exchanges that forward their public-service mission. Such exchanges are seen as a success in the "public service" government and non-profit logics but failures in the "client service" business logic. The process of interpretation and framing these events can lead to organizational change, as the organization pursues activities it frames as likely successes. In particular it can lead to a drift toward a more public service logic (where indirect effects are framed as successes, as in CEA's transition from Phase 1 to Phase 2). It can also lead toward a more complex logic when the people involved more explicitly and reflectively navigate this *catalyst's paradox.* The result is innovative new practices that serve the parts and whole of a constituency simultaneously. Sustaining such practices may require, however, an institutional context that provides four kinds of support: compensation, internalization, donation, and respect.

I also observed that there is an important interaction between the two paradoxes. The catalyst's paradox contributes to a process of change – dynamic reframing of the organization and its activities, and ultimately experimenting with new ways of operating. Such changes, however, can feed back into the problem of confusion that is part of the paradox of hybrid legitimacy. We see this in the reflections of an informant from the Gamma client, quoted in Chapter 4:

> *The business model has that challenge in terms of understanding what this thing really is. And ultimately therefore how people perceive it.* ***It has become even less clear to me over time****… And the business model has changed for variety of different reasons. So the concept is still there, but the details are quite different. And the identity, I think, is affected by that. That has been part of the problem.*

This reinforcing dynamic – in which a hybrid organization confuses its exchange partners, then tries to adapt to its failures by changing its strategy and identity, thus causing further confusion – suggests a profound challenge for this organizational form. It recalls Kraatz and Block's (2008) concern that organizations conforming to pluralistic and changing institutional demands might undermine their legitimacy when they are seen as lacking consistency and organizational integrity. Here I propose:

> *Proposition 15: Hybrid organizations can experience progressive erosion of legitimacy when seemingly adaptive changes in the organizational logic result in greater confusion among critical exchange partners.*

As I suggest in Chapter 4, a particular quality of behavioral complexity may be required among entrepreneurs and managers who hope to overcome this challenge.

The propositions developed in the dissertation are summarized in the table below.

Table 12 – Summary of Propositions

Chapter	Proposition
Chapter 3: The paradox of hybrid legitimacy	*Proposition 1: Cross-sectoral collaborations will be successful when they establish the legitimacy of both the network form and a hybrid way of organizing. Doing so requires navigating the paradox of hybrid legitimacy.*
	Proposition 2: Navigating the paradox of hybrid legitimacy requires pursuing alternative pathways to legitimacy that allow circumventing the illegitimacy of defying known organizational types.
	Proposition 3: One alternative pathway to hybrid legitimacy is to sequentially present the organization as one or the other known type. This may be a more feasible strategy in the early stages of organizational development before a dominant reputation has been established.

	Proposition 4: One alternative pathway to hybrid legitimacy is to work with exchange partners who are themselves hybrid organizations, with whom cognitive and moral legitimacy can be more easily established.
	Proposition 5: One alternative pathway to hybrid legitimacy is to use interpersonal relationships such as those built through structural ties, enabling interpersonal trust to scaffold the development of cognitive and moral legitimacy.
	Proposition 6: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience stuckness, in which the organization hesitates in engaging with exchange partners until it has successfully resolved its internal contradictions, but to the detriment of performance.
	Proposition 7: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience oscillation, moving back and forth between organizational identities and images.
	Proposition 8: In facing the paradox of hybrid legitimacy, actors inside the hybrid organization will experience some reduction in organizational complexity and cleaving to one pole of the hybridity; this creates path dependency based on its most successful exchange relationships.
Chapter 4: The catalyst's paradox	*Proposition 9: In organizations with a combined mission to serve clients and achieve general social objectives, the catalyst's paradox will exert an important influence on sensemaking, identity construction, and organizational change.*
	Proposition 10: Stuckness, splitting, and oscillation can be expected as organizational responses to the catalyst's paradox.
	Proposition 11: When organizations find themselves stuck, splitting, or oscillating in response to the catalyst's paradox, behavioral complexity by individuals in the organization may enable the organization to move beyond these patterns toward creative synthesis.
	Proposition 12: In organizations with a combined mission to serve clients and achieve general social objectives, a modeler's dilemma can arise in which resources devoted to replication compete with resources dedicated to local success, with similar effects to the catalyst's paradox.
	Proposition 13: Behavioral complexity among a hybrid organization's exchange partners will enable the organization to more easily navigate the catalyst's paradox.
	Proposition 14: Overcoming the deleterious effects of the catalyst's paradox will be easier in policy and funding environments that offer multiple forms of compensation to the hybrid organization: internalization, compensation, donation, and respect.
Chapter 5: Conclusion	*Proposition 15: Hybrid organizations can experience progressive erosion of legitimacy when seemingly adaptive changes in the organizational logic result in greater confusion among critical exchange partners.*

Implications for theory

The findings of this dissertation are relevant to three audiences: scholars of cross-sectoral collaboration and other forms of public-private hybrid organizing; scholars of institutional logics and their relationship to organizational legitimacy and innovation; and scholars of paradox in social life.

Cross-sectoral organizing

First, the perspective and concepts developed in this dissertation form an important contribution to the literature on cross-sectoral collaboration, social entrepreneurship, mission-driven businesses and other forms of hybrid organizing that combine logics of business, government, and civil society organizations. Past studies of effectiveness and change in such organizations have tended to focus on tensions and dynamics internal to hybrid actors, such as power struggles among factions, members of a network, or public and private partners (Layzer 2008; Miraftab 2004; Ellersiek and Kenis 2008; Bloomfield 2006; Bidjerano 2009; Battilana and Dorado 2010; Ashforth et al. 2009; Huxham and Hibbert 2008; Huxham and Vangen 2005; Vangen and Huxham 2003; Harter 2004; Westley and Vredenburg 1996). Here I orient attention to the external environment, and the hybrid's exchange relationships, as a critical piece of the puzzle. CEA's outcomes cannot be explained solely with reference to internal struggles to align its immediate partners (although these have occurred).

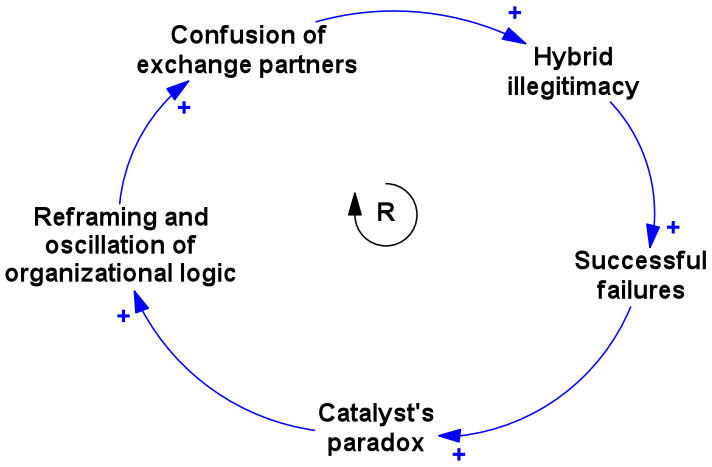
This external-facing perspective offers three theoretical contributions. The first concerns legitimacy. Bryson, Crosby, and Stone (2006) do suggest that establishing legitimacy among internal and external stakeholders is important to the effectiveness of cross-sectoral collaborations. They do not, however, describe the conditions under which such legitimacy can be obtained, the dynamics of the process of legitimation, or the interaction of legitimation with other organizational processes. The CEA case reveals the paradox of hybrid legitimacy and some conditions in which it can be navigated, as described above. It suggests a necessary focus on the *types of actors* with which cross-sectoral collaborations engage (other hybrid actors may be more amenable to exchange) and on *access points* (exchange partners with personal and structural ties to the collaboration).

Second, the existence of a catalyst's paradox in CEA is indicative of more general challenges in conceptualizing organizational effects and outcomes, particularly amid a combined public service and private/client service mission. While various scholars have attempted to conceptualize and categorize "orders" of organizational and institutional effects (Bryson et al. 2006; Innes and Booher 1999; Lawrence et al. 2002), they have not explored conflicts between them. I suggest that "scopes" may

be a better way to categorize effects, so as not to assume a Guttman Scale-like hierarchy, and to open the door to conflicts between scopes of effects. These are important because in hybrid organizations, indirect effects in the organizational field, as well as imitation and diffusion, may forward the broader public-service mission but supplant direct client interactions on which the organization depends for revenue. Further research will be necessary to catalogue conflicts of this kind and the practices through which to resolve or navigate them. I suggest, however, that doing so requires looking beyond the boundaries of the organization or collaboration. Outside resource streams (from government, philanthropists, and regulated businesses like utilities) can be more or less supportive of serving "the whole" of a community along with its "parts." I suggest that a combination of internalization, compensation, donation, and respect from the outside may be necessary.

Third, the CEA case suggests important feedback loops between the internal processes of alignment and goal formation on the one hand, and external legitimacy and effects of action on the other. In CEA, the process of internal strategizing and goal formation led to its formulation as a cross-sectoral collaboration with an emphasis on a client service business logic. This structure had an important effect on the organization's legitimacy, when it was seen as confusing or improper. As a result sometimes CEA's effects in its "market" were indirect, as when Alpha, Beta, and Gamma pursued alternative pathways to energy efficiency investment. This pattern of effects became grist for the interpretive mill in CEA, which then reshaped the organizational identity and activities. That reframing of the organization, however, exacerbated the confusion of exchange partners. I depict this dynamic in Figure 3 below, using the lexicon of systemic dynamics (Sterman 2000; Repenning and Sterman 2002; Senge 1990).

Figure 3 - Reinforcing dynamic resulting from the interaction of the paradox of hybrid legitimacy and the catalyst's paradox.



This reinforcing feedback loop — involving as it does a progressive erosion of organizational legitimacy — will be troubling to scholars and practitioners of cross-sectoral hybrid organizing. Future research should examine such dynamic processes more deeply. For example, it might be possible to use comparative studies of more and less effective organizations to uncover balancing feedback loops that mitigate the one I describe here. More generally, Bryson, Crosby, and Stone's linear model of cross-sectoral collaboration could be enhanced with such dynamic feedback processes.

Institutional theory

In this dissertation I have employed an institutional lens to understand the phenomenon of public-private hybrid organizations. My findings suggest a number of contributions back to institutional theory.

Most generally, hybrid organizations offer a window onto the relationship between institutional and organizational logics. I have suggested that institutional logics operate at a higher level of abstraction, and that they offer a toolkit (Swidler 1986) from which organizational actors can draw. The result is a somewhat more concretely enacted organizational logic, which I define as the interconnection between organizational identity, strategy, and practice. As demonstrated in the case of CEA, this organizational logic can change over time as stakeholders emphasize different aspects of their institutional toolkit.

Additionally, following the organizational consequences of this institutional bricolage has revealed two important tensions in theory and practice. The first is important to scholars interested in the legitimacy and effectiveness of organizations

that cross institutional boundaries. There is both an opportunity for robust action (Stark 1996; Padgett and Ansell 1993) – accessing a variety of resources and expanded repertoire of practices from diverse institutional fields – and a risk of illegitimacy discounts (Zuckerman 1999b; Ruef and Patterson 2009) resulting from external confusion. This tension, which I labeled the paradox of hybrid legitimacy, creates conflicting pulls on hybrid organizations toward broadening and narrowing its self-presentation and exchanges.

One condition under which this tension can be mitigated is through pursuing exchange partners who are themselves hybrids or already accustomed to hybridity. If this condition holds more generally, then it means the viability of a focal hybrid organization depends on the presence of other hybrids among potential exchange partners in its organizational field. The second condition for navigating this tension is when personal legitimacy can be established as an alternative pathway to exchange, through friendship or co-membership structural ties between the organization and its exchange partners. The implication is that institutional entrepreneurs who attempt to form hybrid organizations are more likely to be successful when their personal and professional networks connect them to potential exchange partners, and the entrepreneur is skillful enough to mobilize resource through these ties. The third condition is when the organization offers options for exchange that fit conventional schemas. Doing so with diverse exchange partners may require these actors to develop the capacity for behavioral complexity.

The consequences of hybridity for organizational innovation and change are relevant to scholars interested in sites of innovation, and the possibility that combining institutional logics might generate novel practices and organizational forms. Stark (2009) argues for this "sense of dissonance" – the idea that innovative practices arise in the contradictions between institutional logics and regimes of justification (Boltanski and Thévenot 2006). The case of CEA suggests that competing logics do not always lead to innovation – instead they can lead to stuckness or oscillation between logics. Innovation, as in the Phase 3 of CEA's development, seemed to occur to a greater degree when people were reflectively aware of the contradictions, and had linguistic hooks like "catalyst" to describe a way through them. Thus reflective practice may moderate the relationship between multiplicity and innovation. Alternatively, multiplicity may spur that very reflection, sensemaking, and invention of new linguistic tropes, so that reflectiveness mediates the relationship. Further research into these processes may be necessary to understand when people are stymied by multiplicity and when they are spurred toward creative action.

Theories of organizational paradox

Finally, the dissertation contributes to scholarship about the role of paradoxes in sensemaking and organizing. In the past, paradox has largely been explored at the group level (Smith and Berg 1987; Smith and Tushman 2005) and organizational level (Cameron and Quinn 1988; Denison et al. 1995; Johnson 1996; Lewis 2000; Quinn and Cameron 1988; Sundaramurthy and Lewis 2003; Vince and Broussine 1996). Examination of paradoxes involving inter-organizational relationships have been much more rare (exceptions include Lado, Dant, and Tekleab 2008; Saz-Carranza 2007; Ospina and Saz-Carranza 2005). The paradoxes I identify exist at this relatively unexplored inter-organizational level, in the interface between a cross-sectoral alliance and its outside exchange partners. I was able to explore this level of analysis by virtue of an embedded case, ethnographic design – one that offered a view onto multiple exchange relationships, but stayed close enough to people's sensemaking processes that I could document how they grappled with paradox in practice.

To the growing taxonomy of organizational paradoxes I offer the paradoxes of hybrid legitimacy and the catalyst's paradox, both of which operate at this inter-organizational level and apply to the important category of cross-sectoral hybrid organizations. I describe how these paradoxes are experienced in practice, and how they can lead to classic paradoxical behaviors of stuckness, oscillation, splitting, and more creative synthesis.

Scholars of paradox have suggested that reflectiveness and behavioral complexity may be needed in navigating paradoxes. When interactions cross organizational and institutional lines, however, there may be other factors at play, for example the selection of exchange partners with particular characteristics. Further research that employs the lens of paradox in the study of inter-organizational legitimation and exchange will be necessary.

Limitations, counterfactuals, and directions for future research

This dissertation presents an exploratory, theory-building field study, using CEA as a strategic research site (Merton 1987) for answering questions about hybrid organizations. As a cross-sectoral collaboration, CEA clearly combines people and logics from the institutional fields of business, government, and civil society non-profit organizations. It tackles the complex challenge of energy efficiency, the results of which promise economic benefit to its clients along with environmental improvement in the form of reduced greenhouse gas emissions. In its interactions with a variety of financiers and clients, CEA offers the possibility of embedded, within-case comparison over time that reveals the conditions under which CEA is

effective and the contribution of its external exchanges to its own learning and change.

Nevertheless, my comparison and analytic induction all occur within the single context of the Cambridge Energy Alliance. The propositions developed here must be tested and refined in other hybrid organizations and networks to more fully establish their validity and generalizability. In particular, a few features of the CEA context bear mention as particularities and sources of possible alternative explanations. Addressing these limitations through future research will require casting an increasingly wider net for comparative cases. Doing so opens possibilities for some exciting lines of work.

CEA operates in a distinctive locale

Cambridge Massachusetts is not an ordinary town. It has an affluent, highly educated, politically liberal population; a city government with substantial infrastructure and programming in the area of energy and environment; and supportive policies like the Green Communities Act at the Massachusetts state level. These characteristics are assets to the present study, because they are assets for the success of CEA. Given the plentiful resources and political support available to CEA, the challenges it has faced can be more easily attributed to the paradoxes of hybrid organizing elaborated in this dissertation.

It is, however, worth noting that the indirect effects of CEA's work – and therefore the catalyst's paradox they generate – may be more pronounced in Cambridge. The context supportive to CEA is also supportive for competing energy service companies and contractors; as a result homeowners and businesses have some variety of providers available to them for energy efficiency services. In cities with a less well-developed energy and environment field, competition may not be as strong, and the possibility of a CEA-like organization catalyzing but not capitalizing on efficiency investments may be attenuated. Studies in such contexts (e.g., Cincinnati, OH, where the Greater Cincinnati Energy Alliance is operating) would offer useful comparisons to the present one.

It is also worth noting the issue of scale. Cambridge is one city, with a household population of 84,760, or 1.4% of the household population of Massachusetts (US Census Bureau 2008). Energy efficiency spending in Cambridge is relatively high, but only accounts for 7.8% of NSTAR's total efficiency spend. A larger city, and/or a cluster of towns in a metropolitan area, would account for a larger share of the energy efficiency market. With such scale and market share in its purview, CEA might have had more legitimacy and power in negotiating for grants from the state government's Department of Energy Resources, from NSTAR, and from other

sources of funding. To assess the effect of scale on effectiveness in general, and in particular on the ability of a hybrid organization to establish legitimacy with exchange partners, a comparative case would be helpful. Again, the Greater Cincinnati Energy Alliance could be a useful comparison, which has been joined by multiple cities and counties in its metropolitan area that account for a larger proportion of the utility company's service territory.

CEA operates in a distinctive historical moment

The particular moment of CEA's founding in 2006 and outreach efforts in 2007-2010 also has some distinctive characteristics. First, the recession of 2008 provides a potential alternative explanation for failures of CEA's fundraising and client outreach activities. In a period of tight capital markets and low consumer spending, the appetite for investment in energy efficiency may have been lower. There is some indication that the recession influenced the Zeta case in particular.

There is little reason to believe, however, that a general reduction in willingness to invest would particularly affect CEA's clients. Rather, the effect of the recession would simply make the contrasts clearer between those who did choose to work with CEA (foundations, CDM, CHeA, CHoA, the City of Cambridge) and those that did not. The explanations for success and failure related to hybrid legitimacy should still hold in a comparative analysis.

The second feature of this historical moment is the transition in early 2009 from a Republican-dominated federal government under George Bush to the Democratic government of Barack Obama, and the subsequent flood of funds for energy efficiency through the American Recovery and Reinvestment Act (ARRA). This transition, and CEA's adaptation to it, is an explanation for organizational change at CEA toward the grant-funded, public service non-profit institutional logic (Process 2 in my narrative). As such the political change operates alongside and potentially confounds the role I claim for the catalyst's paradox in that same transition: that catalyzed transactions are better supported by grants than by fee-for-service contracts, and easier to reframe as successes in the non-profit logic. Because of this confound (at least related to the transition from CEA's Phase 1 to Phase 2), a comparative study during a period of relative stability in the institutional context would be useful in order to understand more precisely how organizational change processes can be influenced by the catalyst's paradox.

CEA is a cross-sectoral collaboration with multiple explicit stakeholders

In this dissertation, I have defined hybrid organizations as those that combine institutional logics. I have particularly concerned myself with organizations that combine logics traditionally employed in business, government, and non-profit

organizations. In fact there is a broad class of organizations that fit this description. CEA is one sub-type, a fully cross-sectoral collaboration: it is pursuing non-profit status; it has a City government as its founder, board member, and overseer; and it has a network of for-profit energy and financial service providers whose offerings it brokers. There are, however, other sub-types in this broader category of public-private hybrid organizations, even within CEA's domain. There are environmentally-minded for-profit companies; for example, in the Boston area there is a firm called Next Step Living that offers premium home energy audits and contractor arranging for a fee. There are also established non-profit organizations like Community Action Agencies that use government grants to offer home repair and energy efficiency services to low-income customers.

These other organizational sub-types are not as hybrid in their structure and governance as CEA, in which it is possible to locate each institutional logic as embodied in particular stakeholders. This distinction is important for two reasons. First, a less complex organizational structure and stakeholder network might present less confusion and apparent conflict of interest to exchange partners (a downside of hybridity). Second, other organizational sub-types may have a more limited array of potential exchange partners, for example if they do not pursue foundation grants because they are primarily for-profit (an upside of hybridity). Thus the paradox of hybrid legitimacy may be amplified in the CEA case and attenuated in other kinds of public-private hybrid organizations.

For the catalyst's paradox, CEA's particular structure may be less of an issue. As evident in my discussion of the home products company Seventh Generation, the catalyst's paradox can occur even in for-profit companies without complex ties to government and non-profit organizations.

Allaying such concerns more fully, however, would require comparative studies that examine a broader variety of organizations, perhaps those providing similar energy efficiency services to those of CEA.

CEA confronts the specific challenges of energy efficiency

Energy efficiency is a valuable context for the study of hybrid organizations because of the mix of public and private good involved in its accomplishment. There are, however, particularly challenging problems to solve in this arena. A number of market barriers have been cited in the literature on energy efficiency, the most significant of which is the set of information asymmetries, transaction costs, externalities, and agency problems involved in landlord/tenant arrangements (Joskow and Marron 1992; Stern and Aronson 1984). As a result of these challenges, utility programs providing home energy audits and subsidies rarely

achieve greater than 1% penetration. They are generally unable to produce energy savings that keep up with increases in demand, and almost never provide an integrated service that includes electricity, gas, and water as CEA originally intended to do. Energy Service Companies (ESCos) have sought to reduce transaction costs by combining auditing, financing, and construction into a single performance contract, but they have been largely unsuccessful in penetrating beyond owner-occupied municipal, university, school, hospital, and federal buildings where building managers operate with the longest time horizons (Goldman et al. 2005). In this context, CEA's low performance may not be surprising, and in fact their anticipated success at one C&I project outside the MUSH market is not insignificant. To create a more conservative test of the paradox of hybrid legitimacy in particular, it would be valuable to explore a domain where these barriers are not as strong (or at least a different set of barriers are in place), for example the pursuit of sustainable agriculture.

My interviews and observations revealed, however, that the normal challenges of the energy efficiency market are not sufficient to explain CEA's outcomes. In many cases potential clients pursued energy efficiency investments but did not do so in direct partnership with CEA. These situations show that traditional market barriers are not the only factors at play. They illuminate problems with CEA's identity and approach that I have explained here in terms of the paradox of hybrid legitimacy. Confusion and uncertainty among potential exchange partners about how to conceptualize and interact with the Alliance has been a factor, and should be a factor in domains other than energy efficiency.

CEA is a service delivery organization

The limitations addressed above apply to the specific choice of locale, moment, organizational structure, and problem domain that come together in CEA as a hybrid organization. It is also worth noting CEA's particular strategy for solving the problem of energy efficiency: to directly engage with clients and encourage their investment in energy efficient building retrofits. Waddell (2005) offers a typology of cross-sectoral collaborations aimed at what he calls "societal learning and change" (SLC). In that typology, CEA is a "front-end SLC initiative," one engaged in direct service delivery to clients by a collaborative network. The typology illuminates two other possible strategies CEA could have taken. The first strategy is to be a "back-end SLC initiative," one that encourages suppliers rather than clients of goods and services with positive externalities. An example in CEA's context might be providing technical assistance to general building contractors, enabling them to offer energy efficient alternatives to common building retrofits. The second is a "forward capacity building" initiative that provides the enabling conditions for

services to be offered. An example is the US Green Building Council that produced the Leaders for Environmental Engineering and Design (LEED) standard for buildings. Management of such standards does not directly result in energy efficiency investments, but as we see in the case of CDM, can encourage and enable them. In the local Cambridge context, the development of a city-wide building code or benchmarking system is one path CEA could have tread.

This client-facing focus of CEA has a number of implications for the paradoxes identified in this dissertation. First, the paradox of hybrid legitimacy might play out differently in an organization that is not selling a service. The challenges of confusion and perceived conflict of interest could plague a back-end or capacity-building initiative when it sought to engage with building owners. Further, any collaborative organization needs to raise funds and may face similar financing challenges to those seen in CEA. Nonetheless, it might be more difficult to discern the "illegitimacy discount" if there are not clear choices among competitors as we see in the Beta case, for example.

The catalyst's paradox would be more strongly affected by selection of a different type of organization. The "capacity-building" form, in which the very intent of the organization is to catalyze change indirectly, might not have the same conflict between direct and indirect effects of its action. A "back-end" initiative focused on building supplier capacity might, however, experience the catalyst's paradox if it depended on a fee-for-service arrangement with suppliers (e.g., a paid seminar for building contractors). Research on organizations taking this broader range of strategies in a similar domain might be valuable in clarifying the scope conditions for the paradoxes I identify.

CEA embodies compatible aspects of institutional logics

It is worth noting, however, that all three categories of cross-sectoral initiative in Waddell's typology assume a degree of smooth collaboration between business, government, and civil society organizations. CEA, fitting into this paradigm of collaborative action, pursued a hybrid organizing strategy that selected relatively harmonious aspects of sectoral logics to integrate. In the CEA design, public-sector government agencies are seen as trusted overseers, representatives of voters' priorities, and mediators of public and private interest. The private sector businesses are seen as capable deliverers of products and services that might have positive externalities. Civil society is understood as a kind of relational resource for peer marketing, education, and campaign participation. The result of this combination is a community education and client service campaign to encourage and support energy efficiency investments.

In fact, it is also possible for institutional logics to be more sharply in conflict. Government can operate as a rule enforcer. Business can operate as a rent-taker, pursuing profits from gaps in the rules and their enforcement. Civil society can be the basis for social movement organizing that drives accountability in business and government.

We can see hints of this "hotter" dynamic in the pre-history of one of CEA's partners, Conservation Services Group (CSG).[17] This organization began as a cluster of Community Action Agencies that provided home energy efficiency services to low-income Massachusetts residents amid the late 1970's Arab oil embargo. These agencies moved from service to activism when they mobilized their clientele in political campaigns against increasing utility prices. Building on their grass roots power base, they then negotiated policy changes in Massachusetts that mandated investment in energy efficiency by the utilities. They subsequently rebranded themselves as Conservation Services Group and secured lucrative contracts with utility companies around the country to deliver residential energy audit programs. At present in 2010, they claim to perform half a million home energy audits per year (CSG 2010), and founder Steve Cowell is involved in another wave of political lobbying to encourage federal policies that support energy efficiency.

A more thorough case study of CSG would no doubt reveal further nuances to this story, but it offers an important counterfactual to CEA's strategy. It shows some pathways of confrontational activism and more systemic institutional change that CEA could have tread. For example, CEA could have used the conversations with homes and businesses created by its energy efficiency canvassing and service delivery to do political mobilization, just as the Community Action Agencies did in the early history of CSG. A strong political coalition could have asked for policy change in Cambridge or in Massachusetts more broadly: stringent building codes; mandatory energy audits and benchmarking of buildings at the time of rental and sale; municipal bonds to support home energy investments through property tax assessments; or other policies that enable energy efficiency. Like CSG, they could have then inserted themselves as the service providers of choice to meet the resulting demand for energy audits and retrofits.

In fact, CEA has made some moves toward more systemic institutional change; most importantly it carried out a Home Rule Petition and got special legislation passed in Massachusetts, allowing Cambridge and other municipalities to engage in single-source contracts with cross-sectoral alliances like CEA. This was, however,

[17] This brief account draws on public documents and interviews with CSG's founders and observers.

primarily done to enable its own contract with the City of Cambridge, and was carried out through an inside track with its partners in the City. It did not build a platform for collective action that could be repurposed and re-engaged.

Such strategies provoke a question of why CEA chose the particular strategy it did, and the "cooler" aspects of the institutional logics it blended. Why collaboration over confrontation? Under what conditions do hybrid organizations pursue these different strategies?

I suggest that the reasons for CEA's strategy hark back to the very paradoxes identified in this dissertation. The first is related to the paradox of hybrid legitimacy. CEA sought to portray itself in a positive, non-threatening light to its government and business partners, and to its clients. As a result they resisted the pull of political activism and operated more like a client service business. Their rationale was that doing so might allow them to establish their legitimacy more easily, although this dissertation shows some pitfalls of that strategy.

The second reason has to do with the catalyst's paradox. Working on behalf of the whole, for example mobilizing the citizenry to advocate for a policy that enables energy efficiency investment, does not always have a clear revenue stream. Where the Community Action Agencies were primarily based on volunteer labor and government grant funding, CEA established itself with consultants and private loans. The availability and choice of financial support structures makes a difference in the ability to serve the whole community over individual clients.

In a sense, the CSG case and counterfactual speculations about CEA suggest a hotter and more behaviorally complex path for navigating the hybrid legitimacy and catalyst's paradoxes. Further research would be valuable, to understand how organizations pursuing that activist path make sense of these paradoxes. Further, what enables a person like Steve Cowell or an organization like CSG to integrate the more conflicting aspects of the institutional logics into their identity and action and still be effective?

Implications for practice and policy

Given the caveats above and the need for further research, there are important practical implications of this research, particularly for (institutional) entrepreneurs and policy makers who seek novel organizational strategies to complex social problems.

Past studies have emphasized the importance of cultivating special qualities of facilitative leadership necessary to manage internal conflict and complexity of cross-sectoral collaborations and multi-mission organizations (Crosby and Bryson 2005a,

2005b; Huxham and Vangen 2000; Senge et al. 2008). Here I suggest that these factors are important, but may not be enough. In addition, careful selection and cultivation of exchange partners and institutional lines of support are needed.

First, it is important that practitioners attend to the ways that external exchange partners actually perceive the hybrid organization or alliance. They should not assume that hybridity is an asset, or that the legitimacy of one set of partners can be "borrowed" for the collaboration as a whole. In fact, hybrid organizations may be confusing and present apparent conflicts of interest and other improprieties, given people's expectations of distinct business, government, and non-profit organizations. To mitigate these legitimacy problems, the findings suggest two strategies.

- *Find fellows first:* hybrid organizations should select exchange partners with a disposition toward bricolage and hybrid strategies, as CEA has done with philanthropic investors, program-related investment from foundations, Camp Dresser McKee, and the Cambridge Health Alliance.

- Hybrid entrepreneurs *need the network:* given the potential illegitimacy of hybrid organizations and partnerships, it may be necessary to build heavily on personal and professional ties through which interpersonal trust can be a scaffold to organizational legitimacy. We see this in CEA's work with foundations, the City of Cambridge, and the Cambridge Housing Authority.

Policy makers can also provide some symbolic support to hybrid organizations to enhance their legitimacy. CEA's home rule petition illustrated the importance of a legislative seal of approval on transactions between government agencies and hybrid organizations – transactions that might otherwise be criticized as involving conflicts of interest. It may also be possible to carve out a new institutional schema for hybrid organizations through new legal standards of incorporation. The emerging "B Corporation" designation, for example, could offer some benefits of mission-driven, non-profit status but need not impose the stringent non-profit requirements of IRS 501(c)(3) designation.[18]

Second, entrepreneurs and policy makers should not assume that success and failure will be easy to define amid a combined mission of private service (to individual clients) and public service (to the economic, social, or environmental well-being of a whole population). In fact some indirect effects of organizational action can be seen as "successful failures" that are good for mission but bad for

[18] http://www.bcorporation.net

business: spurring clients to do the right thing without their involvement; or spurring clones and competition to take on a similar area of service delivery. It is important that practitioners recognize this tension and find ways of rewarding the organization for being a "catalyst." This means finding financing and revenue streams that are tied to the progress of the entire constituency as well as streams tied to service of individual clients or partners.

Cultivating these lines of support sometimes may require hybrid organizations to engage in systemic institutional change, for example advocating for changes in public policy. Foregoing the possibility of activism may make the organization appear less threatening and focus attention on revenue-generating activities. But doing so may also close off opportunities to expand the client base and create resource streams that support the organization.

There are important implications for policy makers here as well. Even some government policies that internalize externalities via tradable credits and permits (such as the Forward Capacity Market or Regional Greenhouse Gas Initiative in the CEA case) are still tied to individual transactions. Therefore they do not support education and movement building that benefits the whole constituency simultaneously. Trends toward accountability among philanthropic foundations can have a similar unintended consequence if they tie funding to individual transactions. Policy makers looking to encourage beneficial practices like energy efficiency retrofits and sustainable agriculture should provide a mix of funding streams that require both progress against collective, community goals and countable individual transactions.

Finally, it is important for practitioners to be conscious that none of these prescriptions is universal. Hybrid organizations are complex entities, influenced by a diverse range of internal and external stakeholders. They are rife with tensions, contradictions, and paradoxes that must be navigated within the organization, among immediate partners, and with outside exchange partners. Ignoring paradoxes can result in undesirable outcomes like stuckness and inaction, oscillation and mission drift, factionalization and internal conflict. Even learning and innovation amid these paradoxes can be problematic if others see the organization as unstable and even more confusing. It may take a particular quality of behavioral complexity and leadership across boundaries to navigate this territory.

Coda

I opened this dissertation by referring to the complex problems that our society faces, and that institutional entrepreneurs sometimes try to solve. I have focused on the problem of climate change and the potential solution of energy efficiency, but this domain fits into a broader context. In fact, we live in a profoundly challenging historical moment, in which increasing levels of population and consumption threaten to outstrip the capacity of natural resources, physical infrastructure, and public health and security systems that support human welfare. Some potential solutions do seem to exist – energy efficiency, sustainable agriculture, material waste reduction, and preventative health provision, to name a few. At least in theory, they involve a mix of public and private good, in which economic incentives to save money are aligned with social and environmental benefit.

Amid these public-private problems and public-private solutions, the temptation can be to create public-private hybrid organizations that integrate elements of multiple sectors and institutions of society to match problems with solutions. On the surface, such organizations might seem to provide the best of multiple worlds: a variety of skills and resources to get things done; a diverse network of stakeholders to lend support; a space of creative tension that might generate new ways of doing business. As they emerge, however, it is important that we carefully educate the leaders of these organizations. To be unaware of the paradoxes lurking within them is to miss a chance to create effective, stable, yet dynamically innovative organizations that can truly be a force for change. This dissertation provides support for reflective theorizing and practice amid the present wave of hybrid organizing, so as to foster that awareness.

At the same time, it suggests a caveat emptor. Confronting any of these complex problems, it may be worth considering whether a hybrid organizing strategy is appropriate. A new organizational form is not always needed to develop new solutions. In some situations, it may be that strengthening government policies, business offerings, and civil society associations – rather than trying to work around or replace them – is a better path.

References

Aaker, Jennifer, Kathleen D. Vohs, and Cassie Mogilner. 2010. "Nonprofits Are Seen as Warm and For-Profits as Competent: Firm Stereotypes Matter." *Journal of Consumer Research* 37. http://dx.doi.org/10.1086/651566 (Accessed July 2, 2010).

Alvord, Sarah H, L.D. Brown, and Christine W Letts. 2004. "Social Entrepreneurship and Societal Transformation: An Exploratory Study." *Journal of Applied Behavioral Science* 40:260-282.

Ambec, Stefan, and Paul Lanoie. 2008. "Does It Pay to Be Green? A Systematic Overview.." *Academy of Management Perspectives* 22:45-62.

Anderson, J. R, and G. Feder. 2003. *Rural extension services*. World Bank, Agriculture and Rural Development Department and Development Research Group, Rural Development.

Ashforth, Blake E., Peter H. Reingen, and James C. Ward. 2009. *Friend and foe? The dynamics of duality in a cooperative*. Arizona State University.

Austin, JE, F Hesselbein, and JC Whitehead. 2000. *The collaboration challenge: How nonprofits and businesses succeed through strategic alliances*. Jossey-Bass San Francisco.

BACVR. 2005. *The most conservative and liberal cities in the United States*. Berkeley, CA: Bay Area Center for Voting Research http://alt.coxnewsweb.com/statesman/metro/081205libs.pdf.

Bateson, Gregory. 2000. *Steps to an ecology of mind*. Chicago, IL: University of Chicago Press.

Battilana, Julie, and Silvia Dorado. 2010. "Building sustainable hybrid organizations: The case of commercial microfinance organizations." *Academy of Management Journal* In press.

Battilana, Julie, Bernard Leca, and Eva Boxenbaum. 2009. "How Actors Change Institutions: Towards a Theory of Institutional Entrepreneurship." *The Academy of Management Annals* 3:65.

Becker, H.S. 1998. *Tricks of the Trade: How to think about your research while you're doing it*. Chicago, IL: University of Chicago Press.

Bendell, J. 2000. *Terms for endearment: business, NGOs and sustainable development*. Greenleaf Publishing.

Bidjerano, M. 2009. "Collaboration as paradox: The case of the Patuxent River, MD nutrient control strategy." State University of New York at Albany.

Biggart, N. W, and L. Lutzenhiser. 2007. "Economic sociology and the social problem of energy inefficiency." *American Behavioral Scientist* 50:1070.

Biggart, Nicole Woolsey. 1991. "Explaining Asian economic organization." *Theory and Society* 20:199-232.

Blaikie, Norman. 2007. *Approaches to social enquiry*. Polity.

Bloomfield, Pamela. 2006. "The Challenging Business of Long-Term Public-Private Partnerships: Reflections on Local Experience." *Public Administration Review* 66:400-411.

Boltanski, L., and L. Thévenot. 2006. *On Justification: Economies of Worth*. Princeton University Press.

Bornstein, David. 2007. *How to change the world*. Oxford University Press.

Bourdieu, P., and L.J.D. Wacquant. 1992. *An invitation to reflexive sociology*. Chicago: University of Chicago Press.

Boyd, Brewster, Nina Henning, Emily Reyna, Daniel Wang, and Matthew Welch. 2008. "Hybrid Organizations: Innovations Towards Sustainability." Masters thesis, University of Michigan.

Bozeman, Barry. 2002. "Public-Value Failure: When Efficient Markets May Not Do." *Public Administration Review* 62:145-161.

Brandsen, Taco, Wim Van de Donk, and Kim Putters. 2005. "Griffins or Chameleons? Hybridity as a Permanent and Inevitable Characteristic of the Third Sector.." *International Journal of Public Administration* 28:749-765.

Brown, Marilyn A. 2001. “Market failures and barriers as a basis for clean energy policies.” *Energy Policy* 29:1197-1207.

Bryson, John M., Barbara C. Crosby, and Melissa M. Stone. 2006. “The Design and Implementation of Cross-Sector Collaborations: Propositions from the Literature.” *Public Administration Review* 66:44-55.

Cambridge Community Development Department. 2006. *City of Cambridge, Massachusetts demographics and socioeconomic profile*.

Cameron, K. S., and R. E. Quinn. 1988. “Organizational paradox and transformation.” in *Paradox and transformation: Toward a theory of change in organization and management*. Cambridge, MA: Ballinger.

Canales, R. 2008. “From Ideals to Institutions: Institutional Entrepreneurship in Mexican Small Business Finance.”.

Charles, Dan. 2009. “Leaping the Efficiency Gap.” *Science* 325:804-811.

Cooney, Kate. 2006. “The Institutional and Technical Structuring of Nonprofit Ventures: Case Study of a U.S. Hybrid Organization Caught Between Two Fields.” *Voluntas: International Journal of Voluntary and Nonprofit Organizations* 17:137-155.

Crosby, Barbara, and John Bryson. 2005a. “A leadership framework for cross-sector collaboration..” *Public Management Review* 7:177-201.

Crosby, Barbara C., and John Moore Bryson. 2005b. *Leadership for the common good*. John Wiley and Sons.

D'Aunno, Thomas, Robert I. Sutton, and Richard H. Price. 1991. “Isomorphism and External Support in Conflicting Institutional Environments: A Study of Drug Abuse Treatment Units.” *The Academy of Management Journal* 34:636-661.

Dacin, M. Tina, Christine Oliver, and Jean-Paul Roy. 2007. “The legitimacy of strategic alliances: an institutional perspective.” *Strategic Management Journal* 28:169-187.

Denison, D. R., R. Hooijberg, and R. E. Quinn. 1995. “Paradox and performance: Toward a theory of behavioral complexity in managerial leadership.”

Organization Science 524-540.

DiMaggio, P.J., and W.W. Powell. 1983. "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields." *American Sociological Review* 48:147-160.

Douglas, Mary. 1986. *How institutions think*. Syracuse University Press.

Dubois, Anna, and Lars-Erik Gadde. 2002. "Systematic combining: an abductive approach to case research." *Journal of Business Research* 55:553-560.

Edmondson, Amy C., and Stacy E. McManus. 2007. "Methodological fit in management field research." *Academy of Management Review* 32:1155-1179.

Eisenhardt, K.M. 1989. "Building Theories from Case Study Research." *Academy of Management Review* 14:532-550.

Ellersiek, Annekathrin, and Patrick Kenis. 2008. "Power in Cross-Sector Partnerships: An Analytical Framework and Literature Review." in *Colloquium on Corporate Political Activity*. Paris, France.

Enkvist, Per-Anders, Tomas Nauclér, and Jerker Rosander. 2007. "A cost curve for greenhouse gas reduction.." *McKinsey Quarterly* 34-45.

Ethiraj, Sendil K., and Daniel Levinthal. 2009. "Hoping for A to Z While Rewarding Only A: Complex Organizations and Multiple Goals." *ORGANIZATION SCIENCE* 20:4-21.

Ewick, P., and S. Silbey. 1998. *The Common Place of Law: Stories from Everyday Life*. University of Chicago Press.

Ewick, P., and S. Silbey. 2002. "The Structure of Legality: the cultural contradictions of social institutions." Pp. 149-66 in *Legality and Community: On the Intellectual Legacy of Philip Selznick*, edited by R. A. Kagan, Martin Krygier, and Kenneth Winston. Lanham, MD: Rowman & Littlefield.

Fitzgerald, FS. 1945. "The Crack-Up." in *The crack-up*, edited by Elena Wison. New York, NY: New Directions.

Fligstein, N. 1987. "The Intraorganizational Power Struggle: Rise of Finance Personnel

to Top Leadership in Large Corporations, 1919-1979." *American Sociological Review* 52:44-58.

Fligstein, N. 1993. *The transformation of corporate control*. Harvard University Press.

Fox-Wolfgramm, Susan J., Kimberly B. Boal, and James G. (Jerry) Hunt. 1998. "Organizational Adaptation to Institutional Change: A Comparative Study of First-Order Change in Prospector and Defender Banks." *Administrative Science Quarterly* 43:87-126.

Freeman, John, Glenn R. Carroll, and Michael T. Hannan. 1983. "The Liability of Newness: Age Dependence in Organizational Death Rates." *American Sociological Review* 48:692-710.

Friedland, R, and RR Alford. 1991. "Bringing society back in: Symbols, practices, and institutional contradictions." in *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell and Paul J. DiMaggio. Chicago, IL: University Of Chicago Press.

Friedman, M. 1970. "The social responsibility of business is to increase its profits." *Corporate Ethics and Corporate Governance* 173-178.

Galbraith, Jay R. 1974. "Organization Design: An Information Processing View." *Interfaces* 4:28-36.

Garfinkel, H. 1967. *Studies in ethnomethodology*. Englewood Cliffs, N.J.,: Prentice-Hall.

Generate, Inc. 2009. "Barr Foundation, Inc.." in *Netvention Company Profiles*. LexisNexis Academic database (Accessed July 2, 2010).

Giddens, A. 1984. *The constitution of society: outline of the theory of structuration*. Berkeley, CA: University of California Press.

Glaser, B.G., and A.L. Strauss. 1967. *The discovery of grounded theory; strategies for qualitative research*. Chicago,: Aldine Pub. Co.

Goldman, Charles A., Nicole C. Hopper, and Julie G. Osborn. 2005. "Review of US ESCO industry market trends: an empirical analysis of project data." *Energy Policy* 33:387-405.

Googins, B. K., and S. A. Rochlin. 2000. “Creating the Partnership Society: Understanding the Rhetoric and Reality of Cross-Sectoral Partnerships.” *Business and Society Review* 105:127-144.

Granade, Hannah Choi et al. 2009. *Unlocking energy efficiency in the U.S. economy*. McKinsey & Co.

Harter, Lynn M. 2004. “Masculinity(s), the agrarian frontier myth, and cooperative ways of organizing: contradictions and tensions in the experience and enactment of democracy..” *Journal of Applied Communication Research* 32:89-118.

Hollender, Jeffrey. 2009. “Building mission-based business and sustainable economies.” Presented at the MIT Sloan School of Management, Leading Sustainable Systems Course Cambridge, MA.

Howarth, Richard B., and Bo Andersson. 1993. “Market barriers to energy efficiency.” *Energy Economics* 15:262-272.

Huber, George P. 1991. “Organizational Learning: The Contributing Processes and the Literatures.” *Organization Science* 2:88-115.

Human, Sherrie E., and Keith G. Provan. 2000. “Legitimacy Building in the Evolution of Small-Firm Multilateral Networks: A Comparative Study of Success and Demise.” *Administrative Science Quarterly* 45:327-365.

Huxham, Chris, and Nic Beech. 2003. “Contrary Prescriptions: Recognizing Good Practice Tensions in Management.” *Organization Studies* 24:69-93.

Huxham, Chris, and Paul Hibbert. 2008. “Manifested Attitudes: Intricacies of Inter-Partner Learning in Collaboration.” *Journal of Management Studies* 45:502-529.

Huxham, Chris, and Siv Vangen. 2000. “Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not Quite) Joined-up World.” *The Academy of Management Journal* 43:1159-1175.

Huxham, Chris, and Siv Evy Vangen. 2005. *Managing to collaborate*. London ; Boston: Routledge.

Innes, Judith E., and David E. Booher. 1999. “Consensus Building and Complex Adaptive Systems -- A Framework for Evaluating Collaborative Planning.”

Journal of the American Planning Association 65:412.

Jay, Jason. 2009. "Managing Paradoxes in Hybrid Organizing." in *PhD Sustainability Academy*. Ivey School of Business, London, ON.

Jay, Jason. 2008. "Metastructuring moves: Synthesizing deliberate and emergent organizational change." Presented at the Academy of Management Annual Meeting Anaheim, CA.

Jay, Jason et al. 2008. "Innovations for healthy value chains: Cases, tools, and methods." http://www.sustainablefoodlab.org/filemanager/download/11921/.

Jay, Jason, Richard Wokutch, and Hanko Zeitzmann. 2009. *Cross-sectoral collaboration for promoting energy efficiency*. MIT Sloan School of Management and Virginia Tech.

Johnson, Barry. 1996. *Polarity management*. Amherst, MA: Human Resource Development Press.

Johnston, Josée. 2008. "The citizen-consumer hybrid: ideological tensions and the case of Whole Foods Market." *Theory and Society* 37:229-270.

Joskow, P. L, and D. B. Marron. 1992. *What does a negawatt really cost Evidence from utility conservation programs*.

Joskow, P.L. 1994. "More from the guru of energy efficiency: `There must be a pony!'." *The Electricity Journal* 7:50-61.

Joskow, P.L., and D.B. Marron. 1992. "What Does a Negawatt Really Cost? Evidence from Utility Conservation Programs." *Energy Journal* 13:41-74.

Kalev, Alexandra, Erin Kelly, and Frank Dobbin. 2006. "Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies." *American Sociological Review* 71:589-617.

Khurana, R. 2007. *From higher aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession*. Princeton, NJ: Princeton Univ Press.

Kleinman, Sherryl. 1996. *Opposing ambitions*. University of Chicago Press.

Kraatz, MS, and ES Block. 2008. "Organizational implications of institutional pluralism." Pp. 243-275 in *The Handbook of Organizational Institutionalism*, edited by Royston Greenwood, Christine Oliver, Kerstin Sahlin, and Roy Suddaby. Thousand Oaks, CA: Sage Publications.

Lado, Augustine A., Rajiv R. Dant, and Amanuel G. Tekleab. 2008. "Trust-opportunism paradox, relationalism, and performance in interfirm relationships: evidence from the retail industry." *Strategic Management Journal* 29:401-423.

LaFrance, Julie, and Martin Lehmann. 2005. "Corporate awakening - why (some) corporations embrace public-private partnerships." *Business Strategy and the Environment* 14:216-229.

Latour, B. 2005. *Reassembling the social : an introduction to actor-network-theory*. New York: Oxford University Press.

Lawrence, P.R., and J.W. Lorsch. 1967a. "Differentiation and Integration in Complex Organizations." *Administrative Science Quarterly* 12:1-47.

Lawrence, PR, and JW Lorsch. 1967b. *Organization and environment: Managing differentiation and integration*. Harvard Business School Press.

Lawrence, T.B., C. Hardy, and N. Phillips. 2002. "Institutional effects of interorganizational collaboration: The emergence of proto-institutions." *Academy of Management Journal* 45:281-290.

Lawrence, T.B., and R. Suddaby. 2006. "Institutions and institutional work." *Handbook of Organization Studies* 215–254.

Laws, D et al. 2001. *Public entrepreneurship networks*. Cambridge, MA: The Environmental Technology and Public Policy Program. Massachusetts Institute of Technology.

Layzer, JA. 2008. *Natural Experiments: Ecosystem-Based Management and the Environment*. Cambridge, MA: The MIT Press.

Levine, M D, J G Koomey, J E McMahon, A H Sanstad, and E Hirst. 1995. "Energy Efficiency Policy and Market Failures." *Annual Review of Energy and the Environment* 20:535-555.

Levitt, B., and J.G. March. 1988. “Organizational Learning.” *Annual Review of Sociology* 14:319-340.

Lewis, Marianne W. 2000. “Exploring Paradox: Toward a More Comprehensive Guide.” *The Academy of Management Review* 25:760-776.

Lovins, Amory B. 1994. “Apples, oranges, and horned toads: Is the Joskow Marron critique of electric efficiency costs valid?.” *The Electricity Journal* 7:29-49.

Lovins, Amory B. 1976. “Energy Strategy: The Road Not Taken?.” *Foreign Affairs* 55:65-96.

Lüscher, Lotte S., and Marianne W. Lewis. 2008. “Organizational change and managerial sensemaking: Working through paradox.” *Academy of Management Journal* 51:221-240.

MacDuffie, J.P. 1995. “Human Resource Bundles and Manufacturing Performance: Organizational Logic and Flexible Production Systems in the World Auto Industry.” *Industrial and Labor Relations Review* 48:197-221.

Maguire, S., C. Hardy, and T.B. Lawrence. 2004. “Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada.” *Academy of Management Journal* 47:657-679.

Mair, Johanna, and Ignasi Martí. 2006. “Social entrepreneurship research: A source of explanation, prediction, and delight.” *Journal of World Business* 41:36-44.

Martin, Lawrence L. 2005. “United States: Human services.” Pp. 95–116 in *The Challenge of Public–Private Partnerships: Learning from International Experience*. Edward Elgar Publishing.

May, Steve Kent, George Cheney, and Juliet Roper. 2007. *The debate over corporate social responsibility*. New York, NY: Oxford University Press.

Merton, R. K. 1987. “Three fragments from a sociologist's notebooks: Establishing the phenomenon, specified ignorance, and strategic research materials.” *Annual Review of Sociology* 13:1–29.

Meyer, John W., and B. Rowan. 1977. “Institutionalized organizations: Formal structure

as myth and ceremony." *American Journal of Sociology* 83:340-363.

Michaels, Harvey, Lily Song, Eric Mackres, and Veronica Metzner. 2010. "Community energy efficiency programs: Identifying challenges and uncovering solutions.".

Miraftab, Faranak. 2004. "Public-Private Partnerships: The Trojan Horse of Neoliberal Development?." *Journal of Planning Education and Research* 24:89-101.

MMA Renewable Ventures. 2008. "MMA Renewable Ventures Finances SunPower Solar Systems at 14 Macy's Stores; Macy's, MMA Renewable Ventures, SunPower and Wells Fargo Team Up For Cost-Effective Clean Energy." *PR Newswire*, April 1 http://www.lexisnexis.com.libproxy.mit.edu/us/lnacademic/frame.do?reloadEntirePage=true&rand=1273520980969&returnToKey=20_T9307094481&parent=docview&target=results_listview_resultsNav&tokenKey=rsh-20.284249.62717917835 (Accessed May 10, 2010).

MMA Renewable Ventures. 2007. "Nation's Largest Solar PV System Takes Flight at Nellis Air Force Base." *U.S. Newswire*, December 17 http://www.lexisnexis.com.libproxy.mit.edu/us/lnacademic/frame.do?reloadEntirePage=true&rand=1273520147017&returnToKey=20_T9306995232&parent=docview&target=results_listview_resultsNav&tokenKey=rsh-20.787869.6045348314 (Accessed May 10, 2010).

Murray, F. 2006. "The Oncomouse that roared: Resistance and accommodation to patenting in academic science.".

O Reilly, C. A., and M. L. Tushman. 2004. "The ambidextrous organization." *Harvard Business Review* 82:74-83.

Obama, Barack. 2007. "Renewing American Leadership." *Foreign Affairs* 86:2.

Ospina, S., and A. Saz-Carranza. 2005. "Paradox and Collaboration in Coalition Work." in *Academy of Management Annual Meeting*.

Padgett, J. F., and C. K. Ansell. 1993. "Robust Action and the Rise of the Medici." *American Journal of Sociology* 98:1259-1319.

Parenteau, Patrick. 2004. "Anything Industry Wants: Environmental Policy under Bush II." *Vermont Journal of Environmental Law* 6:[i].

Pfeffer, J. 1981. “Management as symbolic action: The creation and maintenance of organizational paradigms.” Pp. 1-52 in *Research in organizational behavior*, vol. 3 (1), edited by L.L. Cummings and B.M. Staw. Greenwich, CT: JAI Press.

Pfeffer, J., and G.R. Salancik. 1978. *The external control of organizations : a resource dependence perspective*. Stanford, CA: Stanford Business Books.

Podesta, John. 2009. “Testimony of John D. Podesta at Vice President Biden's Middle Class Task Force.” *Center for American Progress Action Fund*. http://www.americanprogressaction.org/issues/2009/02/podesta_task_force.html (Accessed June 19, 2009).

Poole, M.S. 2004. “Central issues in the study of change and innovation.” Pp. 3-31 in *Handbook of organizational change and innovation*. New York, N.Y.: Oxford University Press http://www.loc.gov/catdir/toc/ecip0410/2003022780.html.

Poole, M.S., and A.H. Van de Ven. 1989. “Using Paradox to Build Management and Organization Theories.” *The Academy of Management Review* 14:562-578.

Powell, Walter W., and Paul J. DiMaggio. 1991. *The New Institutionalism in Organizational Analysis*. 1st ed. Chicago, IL: University Of Chicago Press.

Quinn, R. E., and K. S. Cameron. 1988. *Paradox and transformation: Toward a theory of change in organization and management*. Cambridge, MA: Ballinger.

Rabe, Barry. 2007. “Environmental Policy and the Bush Era: The Collision Between the Administrative Presidency and State Experimentation.” *Publius* 37:413-431.

Rao, H, and JV Singh. 2001. “The construction of new paths: Institution building activity in the early automobile and biotechnology industries.” Pp. 243-267 in *Path dependence and creation*, edited by R. Garud and P. Karnøe. Mahwah, NJ: Lawrence Erlbaum Associates.

Reardon, Jack. 2004. “An Institutionalist Critique of the Bush Administration's Energy Policy.” *Journal of Economic Issues* 38:449-457.

Repenning, Nelson P., and John D. Sterman. 2002. “Capability Traps and Self-Confirming Attribution Errors in the Dynamics of Process Improvement.” *Administrative Science Quarterly* 47:265-295.

Repenning, Nelson P., and John D. Sterman. 2001. "Nobody Ever Gets Credit for Fixing Problems that Never Happened." *California Management Review* 43:64-88.

Romm, Joseph. 2008. "Cleaning up on carbon." *Nature Reports Climate Change* 85-87.

Ruef, M., and K. Patterson. 2009. "Credit and Classification: The Impact of Industry Boundaries in Nineteenth-century America." *Administrative Science Quarterly* 54:486–520.

Ruef, Martin. 1999. "Social Ontology and the Dynamics of Organizational Forms: Creating Market Actors in the Healthcare Field, 1966-1994." *Social Forces* 77:1403-1432.

Sagawa, Shirley, and Eli Segal. 2000. *Common interest, common good*. Boston, MA: Harvard Business Press.

Santos, Filipe M., and Kathleen M. Eisenhardt. 2009. "Constructing markets and shaping boundaries: Entrepreneurial power in nascent fields." *Academy of Management Journal* 52:643-671.

Savas, Emanuel S. 2000. *Privatization and public-private partnerships*. Chatham House.

Saz-Carranza, A. 2007. "Managing Interorganizational Networks: Leadership, Paradox, and Power." Doctoral Thesis, Universitat Ramon Llull.

Schein, EH. 2007. "Clinical Inquiry/Research." in *The SAGE Handbook of Action Research: Participative Inquiry and Practice*, edited by Peter Reason and Hilary Bradbury. Sage Publications Ltd.

Scholz, Roland W., and Olaf Tietje. 2002. *Embedded case study methods*. SAGE.

Schön, D.A. 1983. *The reflective practitioner : how professionals think in action*. New York: Basic Books.

Scott, W. Richard. 2003. "Institutional carriers: reviewing modes of transporting ideas over time and space and considering their consequences." *Ind Corp Change* 12:879-894.

Scott, W.R., and John W. Meyer. 1991. "The organization of societal sectors:

Propositions and early evidence." Pp. 108-142 in *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell and Paul J. DiMaggio. Chicago, IL: University Of Chicago Press.

Selsky, John W, and Barbara Parker. 2005. "Cross-Sector Partnerships to Address Social Issues: Challenges to Theory and Practice." *Journal of Management* 31:849-873.

Senge, P.M. 1990. *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday/Currency.

Senge, P.M., B. Smith, N. Kruschwitz, J. Laur, and S. Schley. 2008. *The necessary revolution: How individuals and organizations are working together to create a sustainable world*. New York: Doubleday.

Seo, M.-G., L.L. Putnam, and J.M. Bartunek. 2004. "Dualities and tensions of planned organizational change." Pp. 73-107 in *Handbook of organizational change and innovation*. New York, N.Y.: Oxford University Press http://www.loc.gov/catdir/toc/ecip0410/2003022780.html.

Sewell, W.H. 1992. "A Theory of Structure: Duality, Agency, and Transformation." *American Journal of Sociology* 98:1-29.

Shamir, Ronen. 2008. "The age of responsibilization: on market-embedded morality." *Economy and Society* 37:1 - 19.

Silbey, Susan S. 2009. "Taming Prometheus: Talk About Safety and Culture." *Annual Review of Sociology* 35:341-369.

Singh, Jitendra V., David J. Tucker, and Robert J. House. 1986. "Organizational Legitimacy and the Liability of Newness." *Administrative Science Quarterly* 31:171-193.

Smith, K. K., and D. N. Berg. 1987. *Paradoxes of group life: Understanding conflict, paralysis, and movement in group dynamics*. San Francisco: Jossey-Bass.

Smith, W.K., and M.L. Tushman. 2005. "Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams." *Organization Science* 16:522-536.

Spicer, Andre. 2006. "Beyond the Convergence-Divergence Debate: The Role of Spatial

Scales in Transforming Organizational Logic." *Organization Studies* 27:1467-1483.

Stark, David. 1996. "Recombinant Property in East European Capitalism." *The American Journal of Sociology* 101:993-1027.

Stark, David. 2009. *The sense of dissonance : accounts of worth in economic life*. Princeton: Princeton University Press.

Sterman, John D. 2000. *Business dynamics : systems thinking and modeling for a complex world*. Boston: Irwin/McGraw-Hill.

Stern, P. C, and E. Aronson. 1984. *Energy use: the human dimension*. New York, NY: W.H. Freeman and Co.

Suchman, M. C. 1995. "Managing legitimacy: Strategic and institutional approaches." *The Academy of Management Review* 20:571–610.

Sundaramurthy, C, and Marianne Lewis. 2003. "Control and collaboration: Paradoxes of governance." *The Academy of Management Review* 397-415.

Swidler, A. 1986. "Culture in Action: Symbols and Strategies." *American Sociological Review* 51:273-286.

Thompson, Barton H. 2005. "Conservative Environmental Thought: The Bush Administration and Environmental Policy." *Ecology Law Quarterly* 32:307.

Thompson, J.D. 1967. *Organizations in action; social science bases of administrative theory*. New York,: McGraw-Hill.

Thornton, Patricia H., and William Ocasio. 2008. "Institutional logics." Pp. 99–129 in *The SAGE Handbook of Organizational Institutionalism*, edited by Royston Greenwood, Christine Oliver, Roy Suddaby, and K Sahlin. London: Sage.

Thornton, Patricia H., and William Ocasio. 1999. "Institutional Logics and the Historical Contingency of Power in Organizations: Executive Succession in the Higher Education Publishing Industry, 1958-1990." *The American Journal of Sociology* 105:801-843.

Turco, Catherine. 2010. "Commercializing & Professionalizing the Personal: Preliminary

Findings from an Organizational Ethnography." MIT Economic Sociology Working Group.

US Census Bureau. 2008. *American Community Survey 2006-2008*. http://factfinder.census.gov (Accessed June 16, 2010).

USDOE. 2010. "Department of Energy - Breakdown of Funding." http://www.energy.gov/recovery/breakdown.htm (Accessed May 25, 2010).

USDOE-EIA. 2010. *Annual Energy Outlook 2010 with projections to 2035*.

Van de Ven, A.H., and M.S. Poole. 1995. "Explaining Development and Change in Organizations." *Academy of Management Review* 20:510-540.

Van Slyke, David M. 2003. "The Mythology of Privatization in Contracting for Social Services." *Public Administration Review* 63:296-315.

Vangen, Siv, and Chris Huxham. 2003. "Nurturing Collaborative Relations: Building Trust in Interorganizational Collaboration." *Journal of Applied Behavioral Science* 39:5-31.

Vedres, Balázs, and David Stark. 2010. "Structural Folds: Generative Disruption in Overlapping Groups." *American Journal of Sociology* 115:1150-1190.

Vince, Russ, and Michael Broussine. 1996. "Paradox, Defense and Attachment: Accessing and Working with Emotions and Relations Underlying Organizational Change." *Organization Studies* 17:1-21.

Vogel, D. 2005. *The market for virtue: The potential and limits of corporate social responsibility*. Washington, D.C.: Brookings Institution Press http://www.loc.gov/catdir/toc/ecip0513/2005015005.html.

Waddell, S. 2005. *Societal learning and change: How governments, business and civil society are creating solutions to complex multi-stakeholder problems*. Sheffield, UK: Greenleaf Publishing.

Waddock, Sandra A. 1991. "A Typology of Social Partnership Organizations." *Administration Society* 22:480-515.

Weber, Max. 1968. *Economy and society*. New York: Bedminster Press.

Weick, K.E. 1995. *Sensemaking in organizations*. Thousand Oaks, CA: Sage Publications.

Weick, K.E. 1979. *The social psychology of organizing*. Reading, MA: Addison-Wesley.

Weick, K.E., K.M. Sutcliffe, and D. Obstfeld. 2005. "Organizing and the Process of Sensemaking." *Organization Science* 16:409.

Westley, Frances, and Harrie Vredenburg. 1996. "The Perils of Precision: Managing Local Tensions to Achieve Global Goals." *Journal of Applied Behavioral Science* 32:143-159.

Williams, Beth Ellen. 2008. "Overcoming barriers to energy efficiency for rental housing." Thesis, Cambridge, MA: MIT http://dspace.mit.edu/handle/1721.1/44348 (Accessed May 11, 2010).

Yin, R.K. 2003. *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage Publications Inc.

Zucker, L.G. 1987. "Institutional Theories of Organization." *Annual Review of Sociology* 13:443-464.

Zuckerman, Ezra. 1999a. "The categorical imperative: securities analysts and the illegitimacy discount." *American Journal of Sociology* 104:1398-1438.

Zuckerman, Ezra W. 1999b. "The Categorical Imperative: Securities Analysts and the Illegitimacy Discount." *American Journal of Sociology* 104:1398-1438.