

REPORT

Innovation That Matters

How City Networks Drive Civic Entrepreneurship

May 15, 2015

Author

Patrick McAnaney

Contributors

Michael Hendrix

Malavika Kesavan

Editors

Rich Cooper

Morgan Gress

Erin Klem

Tim Lemke

Margaret Shepard

Melissa Steffan

Brought to you by

1776



U.S. CHAMBER OF COMMERCE FOUNDATION

FREE  ENTERPRISE

Acknowledgements

The author and contributors would like to thank all the roundtable participants who devoted their time to take part in the Innovation that Matters listening tour. We also thank our local partners for helping to organize the event, including 1871 in Chicago; NYU Polytechnic School of Engineering in New York; Capital Factory and the Austin Chamber of Commerce in Austin; Microsoft in Boston; RocketSpace in San Francisco; Grand Circus in Detroit; and the New Orleans Business Alliance and Idea Village in New Orleans. We would also like to recognize the support of Microsoft CityNext for sponsoring the roundtable events and Brunswick Insights for conducting the Innovation that Matters survey. Finally, we thank Atlantic Media Strategies for their contribution to the design and production of the report.

Contents

TERMINOLOGY.....	VII
EXECUTIVE SUMMARY.....	1
INTRODUCTION	7
THE FRAMEWORK: THE CIVIC ENTREPRENEURIAL ECOSYSTEM.....	11
The Network Effect	11
The Triangle of Civic Entrepreneurship	13
The Supporting Roles	16
The Platform—Environmental Building Blocks.....	18
From V1.0 to V2.0—Creating Conditions vs. Active Empowerment	21
CIVIC ENTREPRENEURSHIP INDEX	25
Overview.....	25
Key Findings.....	26
Results	29
CITY FINDINGS.....	33
Austin.....	33
Boston	35
Chicago.....	37
Detroit	39
New Orleans.....	41
New York.....	43
San Francisco	45
Washington, D.C.....	47
LISTENING TOUR INSIGHTS.....	49
Opportunities.....	50
The Asset Base	51
The Evolving Civic Sector	53

The Disruptive Urgency	55
The Citizen Engagement Factor	57
The Dual Paths: Partner or Circumvent	59
Challenges.....	61
The Alignment Gap.....	62
The Bureaucratic Maze	64
The Credibility Dilemma.....	69
The Risk Disincentives	71
The Noise Factor	74
Solutions	75
Establish System Connectivity	76
Embrace the Friction.....	86
Build the Market.....	90
Turn the Lights On.....	94
Unlock Hidden Capital	98
INDUSTRY FINDINGS	105
Education	107
Energy	109
Health.....	112
Cities	115
APPENDIX: LIST OF ROUNDTABLE PARTICIPANTS.....	119
TECHNICAL APPENDIX: INDEX METHODOLOGY	133
TECHNICAL APPENDIX: UNLOCKED CAPITAL RATIOS	137
ENDNOTES.....	143

Figures and Tables

- Figure 01. The Civic Entrepreneurial Ecosystem..... 2
- Figure 02. The Network Effect 3
- Figure 03. The Lead Actors 13
- Figure 04. The Lead Actors: Motivations 14
- Figure 05. The Triangle of Civic Entrepreneurship: Engage or Circumvent 15
- Figure 06. The Supporting Roles 16
- Figure 07. The Entrepreneur Support Structure 18
- Figure 08. The Platform—Environmental Building Blocks 19
- Figure 09. Civic Entrepreneurial Ecosystem 21
- Figure 10. Start-up Needs at Each Stage of Growth 22
- Figure 11. From V1.0 to V2.0: The Two Layers of Ecosystem Building 23
- Figure 12. The Network Effect 27
- Table 01. Civic Entrepreneurship Index..... 29
- Table 02. Leadership 29
- Table 03. Institutional and Corporate Support 30
- Table 04. Capital..... 31
- Table 05. Talent..... 31
- Table 06. Community Support Structures 32
- Table 07. Austin..... 33
- Table 08. Boston 35
- Table 09. Chicago..... 37
- Table 10. Detroit..... 39
- Table 11. New Orleans 41
- Table 12. New York 43
- Table 13. San Francisco..... 45
- Table 14. Washington, D.C. 47

Figure 13. Top Five Opportunities	51
Figure 14. Top Five Challenges	61
Figure 15. The Alignment Gap: Subcategories	62
Figure 16. The Bureaucratic Maze: Subcategories	65
Figure 17. The Risk Disincentives: Subcategories	72
Figure 18. Top Five Solutions	76
Figure 19. Establish System Connectivity: Subcategories.....	77
Figure 20. Empower the Intermediaries: Subcategories.....	81
Figure 21. Build the Market: Subcategories.....	90
Figure 22. Turn the Lights on: Subcategories	95
Figure 23. Unlock Hidden Capital: Subcategories.....	100
Figure 24. Education: Opportunities	107
Figure 25. Education: Challenges	107
Figure 26. Education: Solutions	108
Figure 27. Energy: Opportunities.....	109
Figure 28. Energy: Challenges.....	109
Figure 29. Energy: Solutions	110
Figure 30. Health: Opportunities	112
Figure 31. Health: Challenges	112
Figure 32. Health: Solutions.....	113
Figure 33. Cities: Opportunities.....	115
Figure 34. Cities: Challenges	115
Figure 35. Cities: Solutions.....	116
Table 15. Civic Entrepreneurship Index: Methodology.....	133
Figure 36. City Metro Areas by GDP	137
Figure 37. City Metro Areas by Wealthy Households.....	138
Figure 38. City Metro Areas by Potential Investment Wealth.....	139
Figure 39. Total Venture Capital Investment 2012-2014.....	140
Figure 40. Unlocked Capital Ratios.....	141

Terminology

Accelerator: Cohort-based programs that provide mentorship and support to startups to help them scale over a fixed period of time with a definitive graduation date

Angel Investors: Early-stage financial supporters of startups, usually consisting of individual capital investors or small syndicates

Application Program Interface (API): A set of routines, programs, and tools for building software applications. APIs are often used to provide access to databases and to integrate separate applications within a platform to improve functionality

Civic Institutions: Service providers in the civic sector, including schools and universities in education; utilities in energy; provider and payer networks in health; and local government agencies and transport authorities in cities

Civic Sector: Highly regulated industries with entrenched institutional players intended to serve the public good

Civic Tech: Tech entrepreneurship activity relating to the civic sector

Coopetition: The dual nature of a business community that is simultaneously competitive and collaborative

Core Industries of 1776: Education, Energy, Health, and Cities

Coworking: Shared office space facilities that promote independent activity within a collective social environment

Entrepreneurial Ecosystem: The community of actors involved in growing and supporting startup activity

Front Line Staff: Workers in civic institutions who are responsible for end-delivery of a service, such as teachers in education or doctors and nurses in health.

Incubator: Member-based programs that provide ongoing mentorship and support to startups to help them scale over an undetermined period of time

Metropolitan Statistical Area (MSA): Geographical region that encompasses a given urban footprint beyond designated city limits, determined by the U.S. Office of Management and Budget

Startup: Newly established companies with high growth potential that aim to use innovative approaches to create a repeatable business model

Venture Capital Investors: Mid-stage financial supporters of startups, usually consisting of established funds managed by professional investment teams

Executive Summary

Innovation That Matters reports on the state of entrepreneurship in the U.S. civic sector, which we define as the collection of highly regulated industries with entrenched institutional players intended to serve the public good. The purpose of this research is to understand how civic sector startup ecosystems have developed, what challenges actors in these ecosystems currently face, and what more can be done to increase startup activity in ways that benefits society. We find that **fluid, open networks are the most important element in fostering vibrant communities of civic entrepreneurship** because they connect diverse stakeholders within an industry and bridge cultural gaps to allow for effective collaboration.

Driving innovation that matters in highly regulated industries requires enabling connections between broad groups of people and institutions to break down silos and promote network growth. Despite the unique nature of the civic sector industries we studied—education, energy, health, and cities—all share a set of opportunities, challenges, and solutions for growing their ecosystems that separates them from the traditional tech sector.

This report consists of three components:

The Framework: Overview of the Civic Entrepreneurial Ecosystem

We identify the key actors within each city's civic startup community and their relationships with each other. The five concepts of our framework are:

1. **The Network Effect:** The underlying goal is to build an open, fluid, and dynamic network that helps startups make the connections they need to succeed and links groups both hyper-locally and hyper-globally.
2. **The Triangle of Civic Entrepreneurship:** The three-way interactions between Citizens, Entrepreneurs, and Civic Institutions define the ecosystem, forming what we term the Triangle of Civic Entrepreneurship.
3. **The Supporting Roles:** There are several actors—investors, mentors, established companies, universities, professional services, and “cheerleaders”—who provide direct help to entrepreneurs. Building successful businesses requires help from all of these groups; startups cannot achieve their goals by going it alone.

4. **The Platform:** An accommodating regulatory environment, quality of life, creative thinking, and density form the environmental building blocks needed to create a foundation for startup networks to flourish.
5. **From V1.0 to V2.0:** Once these network conditions have been met (V1.0), there is a second, more direct layer of intervention needed (V2.0). Community members should actively intervene to empower entrepreneurs to overcome the unique hurdles they face at each stage of development.

This framework is summarized in the following visualization:

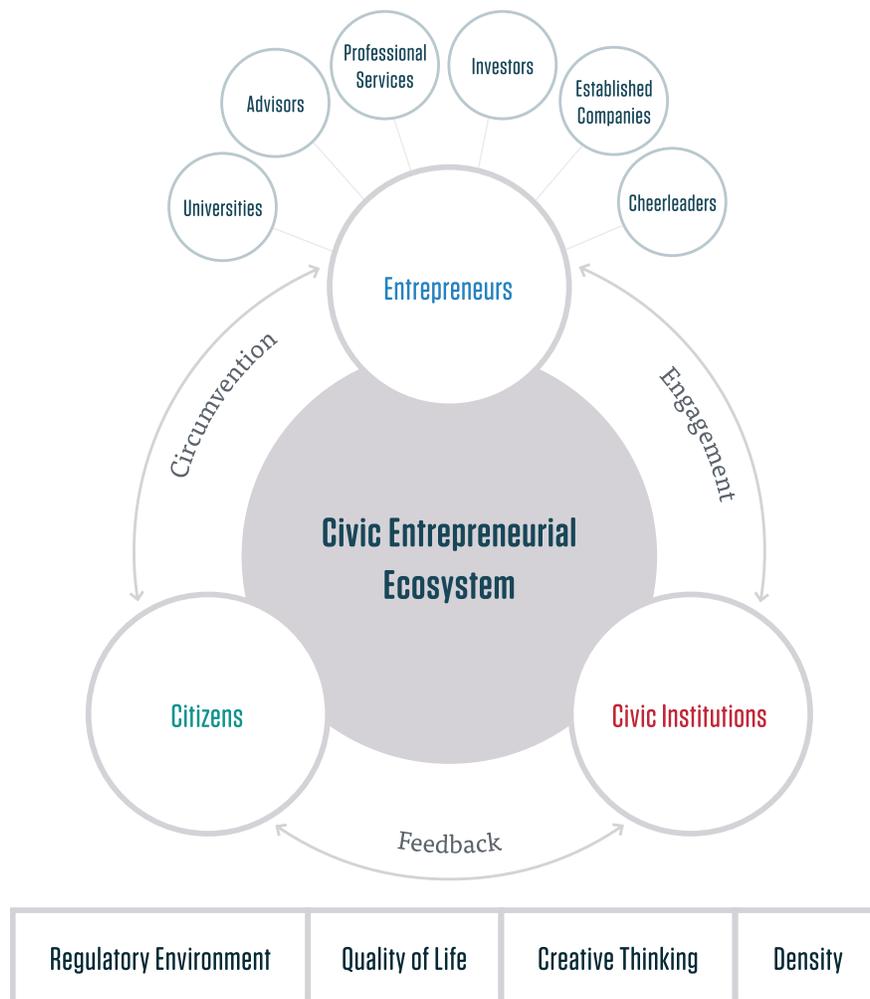


Figure 01. The Civic Entrepreneurial Ecosystem

Civic Entrepreneurship Index: Key Findings

The **Civic Entrepreneurship Index**, based on a unique dataset and our survey of 230 civic tech entrepreneurs in eight U.S. cities, assesses the development of civic startup ecosystems. We conclude that:

1. **Network Connectivity is the “Secret Sauce” Driving Ecosystem Growth:** How entrepreneurs perceive the cohesiveness of their city’s overall network is positively correlated (0.83) with the development of startup ecosystems.

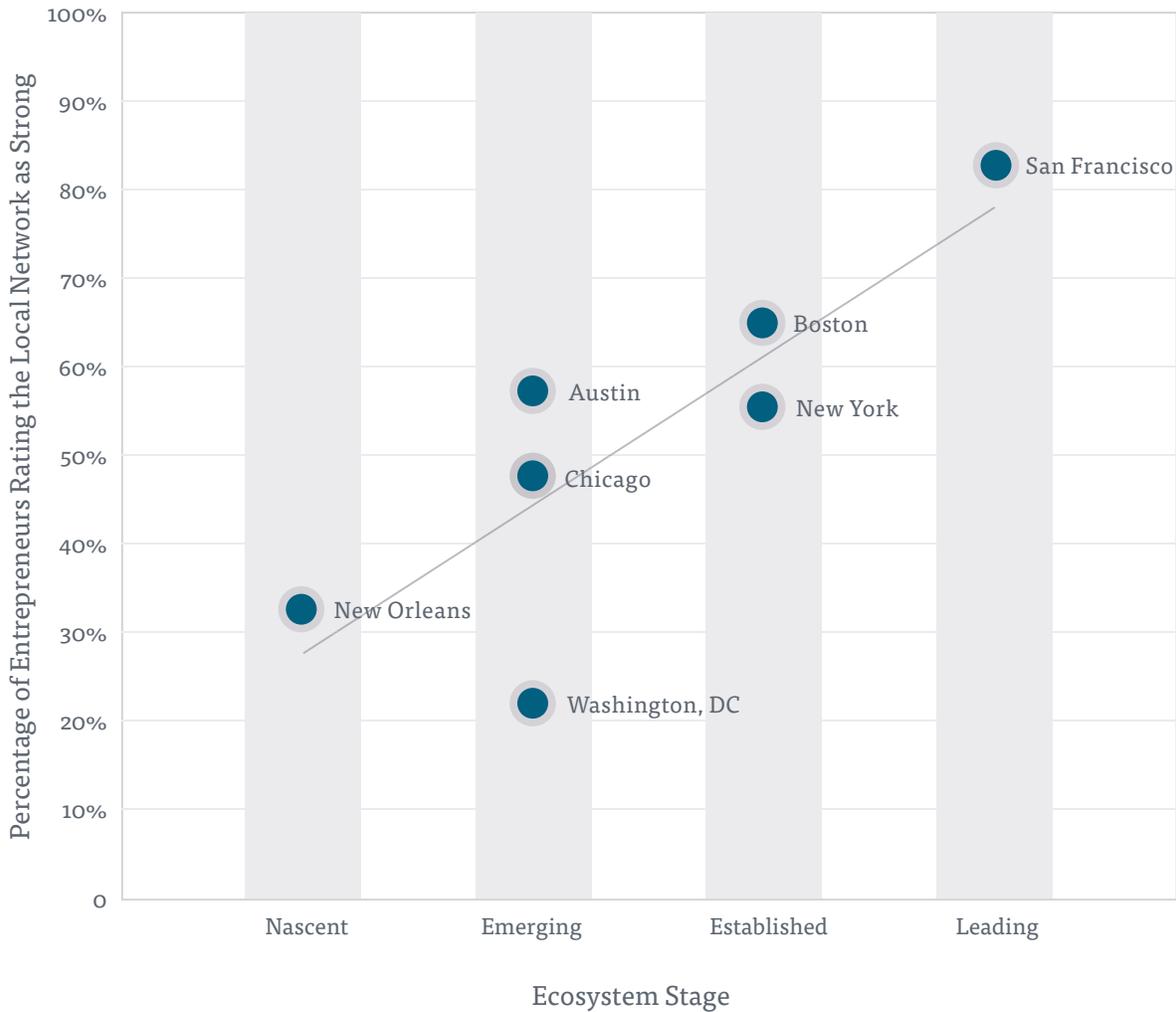


Figure 02. The Network Effect

2. **Each City is Making Progress Toward Establishing a Civic Entrepreneurship Ecosystem:** While some cities are further along than others, there are clear signals of growth in each community we studied, providing evidence that momentum in civic entrepreneurship is not limited to any specific city.
3. **Institutional and Corporate Support is Still a Somewhat Untapped Resource:** Our survey revealed limited interaction overall between entrepreneurs, civic institutions, and corporations in their local communities. A major, remaining opportunity is to better connect these groups to create a more effective and collaborative network.

Listening Tour Insights

We traveled to each of the eight cities listed in the Index and conducted roundtable discussions, in which local stakeholders explained the state of entrepreneurship in their cities and industries. The key opportunities, challenges, and solutions for promoting civic entrepreneurial innovation were:

Opportunities

1. **The Asset Base:** Cities are learning how to tap into existing resources to grow their startup communities
2. **The Evolving Civic Sector:** Changing business models are reinventing civic institutions and creating new openings for entrepreneurs
3. **The Disruptive Urgency:** Concerns about industry disruption have increased the willingness of civic institutions and corporations to work with upstart companies
4. **The Citizen Engagement Factor:** Civic institutions are looking for new ways to directly connect with citizens to improve the quality of their services
5. **The Dual Paths: Partner or Circumvent:** Startups increasingly have the option to work with established organizations in entrenched industries or to go around them if they resist change

Challenges

1. **The Alignment Gap:** Even with the resources in place, actors within an ecosystem often do not collaborate effectively due to general disconnect, cultural divides, and contrasting business incentives.

2. **The Bureaucratic Maze:** When engaging with civic institutions, entrepreneurs must navigate a complicated world of relationships in order to gain traction
3. **The Credibility Dilemma:** Startups face a chicken-and-egg problem of getting initial customers to pilot technology when efficacy is still unproven
4. **The Risk Disincentives:** Civic institution administrators and employees face strong motivations to avoid taking risks that could endanger their organizations or careers
5. **The Noise Factor:** The explosion of startup activity has made it more difficult for civic institutions to distinguish the good from the bad, creating “startup fatigue”

Solutions

1. **Establish System Connectivity:** Connect local actors including startups, civic institutions, investors, regulators, and established corporations to create a collaborative community that understands the value of entrepreneurial innovation and embraces risk. This is done using go-betweens who can translate across cultures and bridge gaps.
2. **Embrace the Friction:** Encourage and foster competition within the ecosystem, allowing all players to put their best product forward while recognizing inevitable conflicts of interest between incumbents and newcomers.
3. **Build the Market:** Open new market opportunities for startups to work with existing institutions by issuing challenges centered on existing pain points and by developing safe spaces for prototyping products.
4. **Turn the Lights On:** Partner with startups to increase access to existing data, build new datasets, and improve data flow to create information that reveals the current state of civic institutions’ operations.
5. **Unlock Hidden Capital:** Connect a community’s existing wealth assets with the startup community in order to drive further innovation in civic entrepreneurship.

Our listening tour confirmed that the strength of the local ecosystem depends on the strength of its collaborative network.

Introduction

We are living through one of the most transformative periods of human history: the Digital Revolution. Groundbreaking new technologies such as the Internet, the smartphone, and cloud computing are rapidly rendering old tools and systems obsolete. As in the Industrial Revolution 200 years ago, the world will emerge from this period looking much different than it did before. However, the future is notoriously difficult to predict. Although we know things are changing, we still wonder what this will mean for future generations.

Along with new technologies, the Digital Revolution has also brought about a new protagonist: the Internet entrepreneur. From Steve Jobs and Mark Zuckerberg to Jeff Bezos and Elon Musk, successful startup founders have become global celebrities, inspiring people across the world to try their hands at building their own companies. At the same time, the proliferation of computing technology has made it easier and cheaper than ever to start a company, removing long-standing barriers to access and democratizing opportunities for business.

We are now in a new golden age of entrepreneurial opportunity, with technology startup communities growing across the world. While this movement originated in Silicon Valley and still has strong roots in the region, it continues to spread to cities as diverse as London, England; Nairobi, Kenya; and Bangalore, India. Just as manufacturing centers once concentrated in Northern England before moving to the United States, Germany, and Japan, so, too, will digital startup hubs develop beyond California, allowing local entrepreneurs to build and adapt technologies best-suited to their communities' needs.

Yet despite the optimism surrounding digital technologies, the world continues to face huge challenges that these tools have not yet been able to address. From struggling schools and broken health systems to climate change and budget crises, our most pressing problems today seem to be a world apart from the focus of the tech community that considers itself the vanguard of the future.

What more can be done to harness the power of startups to help solve the biggest needs of our global society?

At 1776, we think about this question every day. We are a global incubator and seed fund based in Washington D.C. that specializes in scaling startups in the civic sector, which we define as highly-regulated industries with entrenched institutional players intended to serve the public good. Within the civic sector, we focus on four core industries: education, energy, health, and cities.

Our goal at 1776 is to harness the power of startups to transform the world's most important industries. We believe that doing so requires a different approach than that of traditional tech. When it comes to improving our most well-established civic institutions such as schools, energy grids, healthcare systems, and local governments, it truly takes a village to create meaningful change. In these industries, startups need a broad-based and collaborative approach that integrates them into the wider community of actors. Our company is built on the premise that facilitating such integration will allow more entrepreneurial innovation to emerge and grow in ways that benefit society.

Through our incubator program headquartered at our Washington D.C. campus that provides ongoing support to startups and through our worldwide Challenge Cup pitch competition to identify promising new companies, we have learned countless stories of entrepreneurs working to make meaningful impacts in their communities. We have also learned what does and does not work in helping these entrepreneurs succeed. However, we know our experiences alone cannot provide enough perspective to fully answer this fundamental question.

Meanwhile, cities across the United States are embracing the power of entrepreneurs and the businesses they lead—yet many cities struggle to attract and serve the very entities that stand ready to improve the daily lives of their citizens. The U.S. Chamber of Commerce and its affiliates, at their core, are devoted to helping businesses of all shapes and sizes grow and drive the American economy forward. To do this, the Chamber promotes programs and policies that support sustained economic growth and create jobs. Through the work and research of the U.S. Chamber of Commerce Foundation and projects like the Campaign for Free Enterprise, the Chamber works every day to strengthen long-term American competitiveness and to educate the public on the benefits of the free enterprise system.

With this goal in mind, the Chamber partnered with 1776 to produce *Innovation That Matters*, a research study on the state of civic entrepreneurship in eight U.S. cities: Austin, Boston, Chicago, Detroit, New Orleans, New York, San Francisco, and Washington, D.C.

The purpose of Innovation that Matters is to share best practices for developing civic startup ecosystems from local communities across the country. The role of this partnership, and the research we present here, is to serve our cities, as well as the entrepreneurs and citizens within them, with a model they can digest and apply to their own environment.

We believe that each city shouldn't try to reinvent the wheel. There is much more that those of us working in the civic sector can and should learn from each other. Lessons learned in other cities and industries can be applied to local circumstances. Our analysis is intended to provide useful guiding principles regarding ecosystem development, both for those in the trenches building startups and for city leaders eager to support such initiatives.

The Innovation that Matters Report

Innovation that Matters tested the 1776 philosophy outlined above, using the hypothesis that broad-based connectivity is the key ingredient for fostering successful civic entrepreneurship.

For each city, we surveyed local civic entrepreneurs and compiled data for an index on the development of each city's startup ecosystem. We then convened diverse groups of stakeholders in each of our core industries—education, energy, health, and cities. Our listening tour roundtables included entrepreneurs, investors, incubators, industry experts, corporations, government leaders, and representatives of civic institutions. We asked them for their views on what works and what doesn't when it comes to growing their ecosystems, and we took note of the principal themes that emerged from the discussions.

The result strongly validated our hypothesis. **We confirmed that the “secret sauce” of ecosystem development lies in the creation of effective networks that bring together broad arrays of stakeholders within an industry; facilitate open exchange of ideas; and bridge cultural gaps between different groups to promote effective collaboration.** Furthermore, we found that despite the supposedly unique nature of each of the industries that we studied within the civic sector—education, energy, health, and cities—all four share a common set of opportunities, challenges, and solutions for growing their startup ecosystems in ways that separate these industries from the traditional tech sector.

Our findings from the Innovation that Matters study are broken into the following three sections:

1. **The Framework: The Civic Entrepreneurial Ecosystem**

The framework outlines the concept of the Civic Entrepreneurial Ecosystem, the role of each actor, their relationships with each other, and the multiple layers of ecosystem building needed to help startups succeed.

2. **Civic Entrepreneurship Index**

The Civic Entrepreneurship Index reveals the progress made by each city in establishing a civic sector startup community.

3. **Listening Tour Insights**

The Listening Tour Insights reveal parallels across cities and industries, illustrating the common opportunities, challenges, and solutions to promote further entrepreneurial innovation in the civic sector. This section includes comparative analysis for each of the 1776 core industries: Education, Energy, Health, and Cities.

The Framework: The Civic Entrepreneurial Ecosystem

The Civic Entrepreneurial Ecosystem can be understood through five concepts:

1. **The Network Effect:** The underlying goal is to build an open, fluid, and dynamic network that helps startups make the connections they need to succeed and links different groups, both hyper-locally and hyper-globally.
2. **The Triangle of Civic Entrepreneurship:** The main protagonists in this network are the Entrepreneurs, Civic Institutions, and Citizens, whose three-way interactions define the ecosystem and form what we term the Triangle of Civic Entrepreneurship.
3. **The Supporting Roles:** There are several supporting actors who provide direct help to entrepreneurs. Building successful businesses requires help from all of these groups; startups cannot achieve their goals by going it alone.
4. **The Platform:** There is also a basic platform of broader environmental building blocks—an accommodating regulatory environment, quality of life, creative thinking, and density—that the network needs in order to flourish.
5. **From V1.0 to V2.0:** Once these network conditions have been met, creating a robust ecosystem requires a second, more direct layer of intervention. Community members should actively identify company stages and determine the best ways to empower entrepreneurs to overcome the unique hurdles they face at each stage.

The Network Effect

Our framework starts with a basic premise: **the root cause of success in startup ecosystems is “network connectivity”**: the ability to bring disparate groups of people together to create collaborative communities of interest and learn from each other.

In her 1994 book *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* AnnaLee Saxenian presented the hypothesis that Silicon Valley’s dominant advantage in the tech sector was a result of its decentralized, open networks that allowed for the free exchange of ideas. This stood in stark contrast to the vertically integrated and insular high-tech firms of Boston.¹ As California’s startup world boomed over the twenty years

after Saxenian’s book was first published, this belief took hold as conventional wisdom among the tech community. Our framework builds on this idea and applies it to the broader network of actors in civic sector ecosystems, beyond the tech industry itself. Every city has the potential to develop dense, open networks of talented people and innovative thinking that are capable of solving big problems.

“Ecosystems are born when everyone is constantly talking to each other.”

Steven Kuyan, NYU Polytechnic School of Engineering, New York

But the network effect is about more than just embracing talent and exchanging ideas. It’s about providing the **connections** that startups need to succeed. The single thing entrepreneurs need most are connections to capable partners, mentors, and customers—people who can help entrepreneurs advance their thinking and hone in on the products and business models that will most likely result in growth. For startups, the right connection can make all the difference between success and failure.

Many of these potential connections exist right in a startup’s backyard: key actors in the region who are able to provide support when called upon and contribute to the regular exchange of information that happens in a decentralized, well-connected network. This is part of the **hyper-local community** of actors that must develop in order to help entrepreneurs thrive.

“We have to have network-based ‘coopetition’ and friendly co-investment to grow brand new industries here to solve the problems of the world.”

Jean Redfield, NextEnergy, Detroit

However, many of the contacts a startup most needs to succeed don’t reside within that startup’s home city. Certain mentors, industry experts, customers, or investors may reside far away. Startups that don’t have the ability to access these resources will struggle to gain traction, which is why successful networks must be open and well connected to the broader **hyper-global community** as well.

Decentralized and fluid networks that break down barriers, promote the free exchange of ideas, and allow aspiring entrepreneurs to connect both locally and globally are the fundamental starting point for our civic entrepreneurial framework.

The Triangle of Civic Entrepreneurship

Given this general understanding of the network effect, the question thus becomes, “Who are the relevant actors when it comes to civic entrepreneurship?” Our framework features three central protagonists: Citizens, Entrepreneurs, and Civic Institutions.

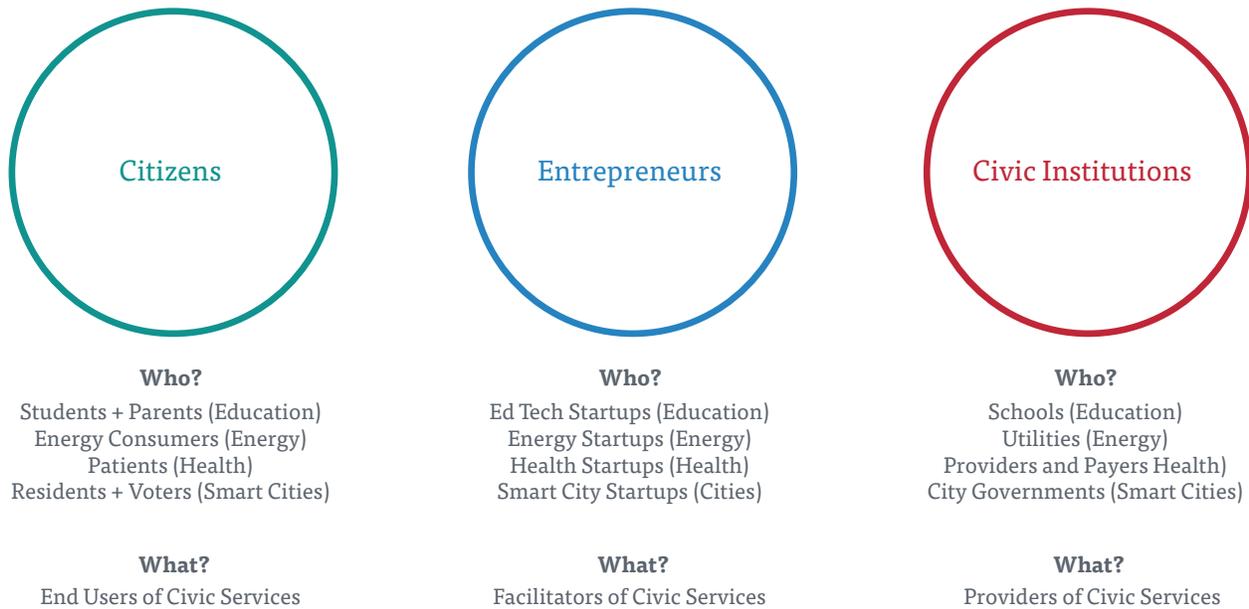


Figure 03. The Lead Actors

Citizens are the ultimate beneficiaries of civic entrepreneurship because they are the end users of services. In our core industries, citizens include the students attending schools, the energy consumers using electricity, the patients in the healthcare system, and the local residents who use city services such as waste collection or transit. The purpose of improving such services is to improve the lives of these people, who thus occupy a central role in the ecosystem.

Entrepreneurs are the drivers of business innovation. They develop ideas for improving service provision and build organizations to operationalize these ideas. While not equal in number to citizens or employees in civic institutions, the game-changing nature of their businesses, when successful, has an outsized impact on the ecosystem.

Civic Institutions are the relevant existing organizations charged with providing services to citizens. In our core industries, civic institutions include the schools teaching students, the utilities supplying energy to ratepayers, the providers and payers administering healthcare treatment to patients, and the city agencies providing services to local residents. Given their principal role in each industry, Civic Institutions are indispensable actors for the ecosystem.

In addition to each group's important role in the civic tech ecosystem, each actor has underlying goals that motivate its members:

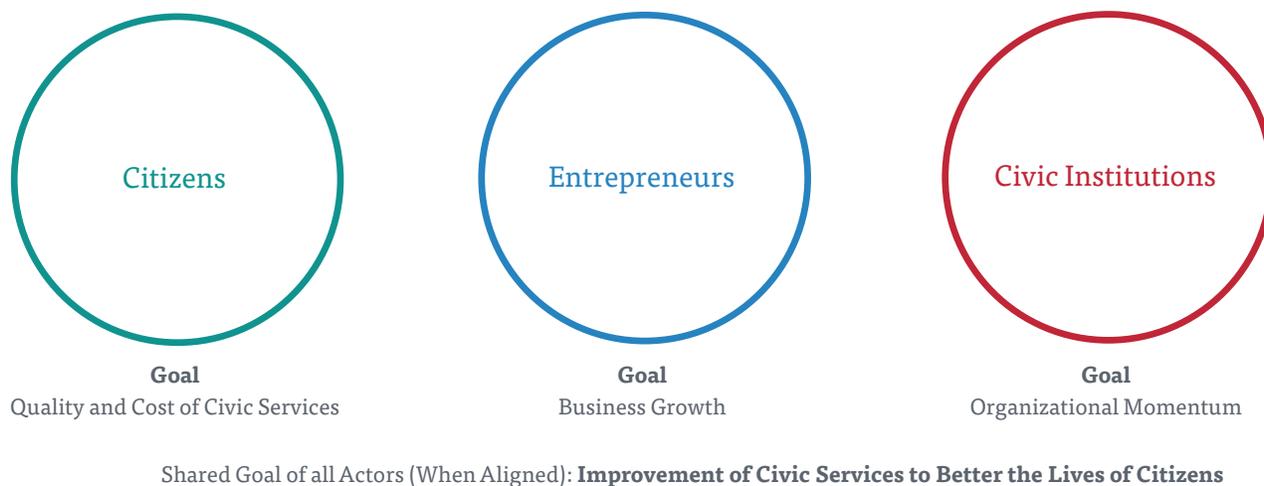


Figure 04. The Lead Actors: Motivations

Citizens want convenient, high-quality services for low costs. Entrepreneurs want to grow their businesses. Civic institutions want to strengthen their organizations. Often, but not always, all three actors align on the same overarching goal: to improve service provision in order to better the lives of citizens. In this case, they share a common motivation in addition to their individual objectives.

The final theme to explore is how these actors interact with each other. We present this primarily in the context of the entrepreneur as a facilitator, while recognizing the regular and direct interactions between citizens and civic institutions. Within the ecosystem, entrepreneurs face a choice: engage with civic institutions as partners, or circumvent them by working directly with citizens.

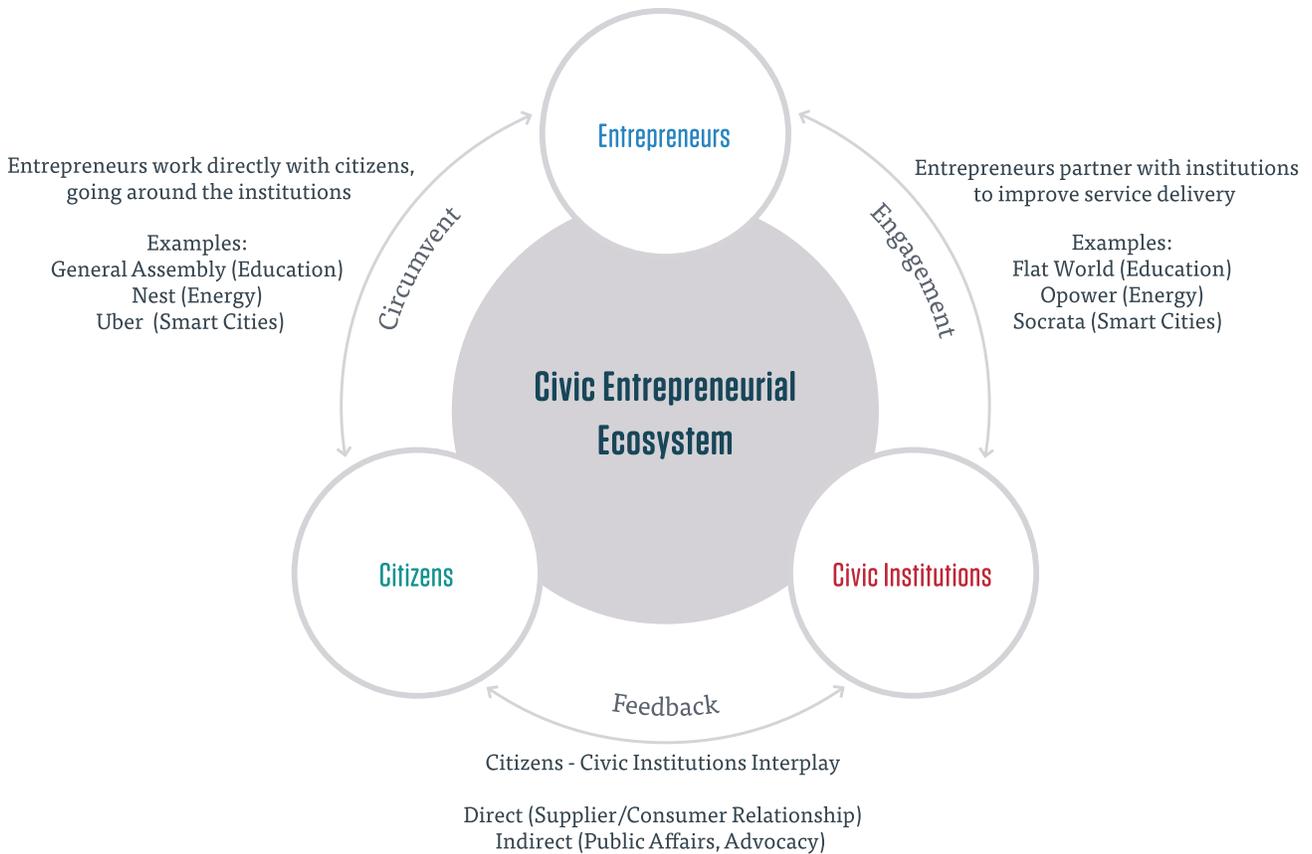


Figure 05. The Triangle of Civic Entrepreneurship: Engage or Circumvent

General Assembly, Nest, and Uber are all examples of startups that have prospered by going around existing civic institutions and selling products directly to citizens. General Assembly offers skills-focused classes and workshops outside of the traditional higher ed environment; Nest, which was recently acquired by Google, offers smart thermostats and other home automation products; and Uber offers on-demand ride service through a mobile application. While these startups are not necessarily anti-institutional—Nest now partners with select utility companies to promote its hardware and Uber has worked with local cab commissions to test an UberTaxi service—each has prospered by direct-to-consumer plays that render existing organizations largely irrelevant.

Flat World, Opower, and Socrata, by contrast, are all examples of startups that have prospered by partnering with existing civic institutions, selling products that those institutions use to improve their service delivery for citizens. Flat World offers digital learning platforms for schools, Opower offers analytics software for utilities, and Socrata offers data management solutions for local governments. These startups show that it is possible to chart a path that involves selling to institutions in the civic sector, rather than to citizens.

Yet, this “Triangle of Civic Innovation” is not complete without acknowledging the **feedback mechanisms** between citizens and institutions, which exist independent of entrepreneurs. This consists of direct business relationships, such as students attending school or patients being treated at a hospital, as well as indirect relationships, such as lobbying the K-12 school board or voting in elections. While successful entrepreneurs are able to find ways to influence the system, there remain many aspects of it that are well beyond their purview.

The Supporting Roles

Beyond the lead actors, numerous other groups are heavily involved in civic entrepreneurship. If they are not the central players, what role do they have in the ecosystem? They **provide crucial support to the entrepreneurs**.



Figure 06. The Supporting Roles

Investors are the financial backers for most entrepreneurial activity and are critical in helping the ecosystem advance. Without the capital available from investors, entrepreneurs would rarely be able to scale their businesses.

Advisors are the seasoned experts who mentor entrepreneurs about how to build a business or how to approach a given industry. While many investors also serve as advisors—and vice-versa—this is not always the case and we consider these to be two separate supporting roles.

Established Companies certainly cannot be ignored in the context of business innovation. Many established companies work directly with civic institutions to drive innovation, such as Microsoft and IBM in Cities or Pearson in Education, but they also act as supporters of startups. In addition to providing unique mentorship opportunities, they can partner with startups to jointly develop and pilot new technology products as research and development (R&D) initiatives.

Universities serve multiple roles in the ecosystem (see below section on “The Platform”), but their core direct support for entrepreneurs involves R&D initiatives that develop new technologies and bring them to market. The explosion in recent decades of university tech-transfer offices, incubator programs, science parks, and other initiatives to create, license, and commercialize intellectual property (IP) has served to increase the prominence of universities in the entrepreneurial ecosystem.²

Professional Services are the broader business community that startups rely on to achieve success. This can include lawyers who draft contracts, provide guidance on regulatory compliance, and help protect IP; accountants who help manage finances and perform bookkeeping functions; and real estate developers who provide the coworking or other office spaces where startups can work. Without skilled professionals providing these types of support, entrepreneurs can struggle when these needs arise.

Cheerleaders provide support by increasing the awareness of the broader population, thus amplifying the voices of entrepreneurs and the startup community. Cheerleaders include the associations and business groups that represent startups, such as chambers of commerce; the bloggers and media outlets who publish articles about business or civic trends for large audiences; the event organizers who create opportunities for outside groups to connect with entrepreneurs; and the general enthusiasts who loudly celebrate the success of startups and motivate others to become involved in the community.

These supporting actors are not the leaders of the startup community, but they enable the Triangle of Civic Entrepreneurship by providing various forms of assistance that entrepreneurs rely on while building their businesses:

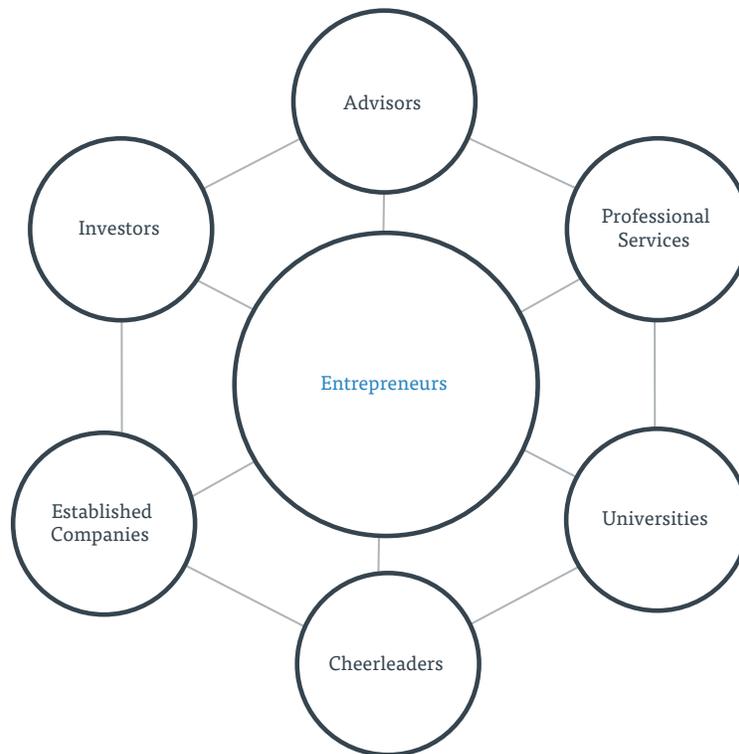


Figure 07. The Entrepreneur Support Structure

The Platform—Environmental Building Blocks

Beyond the presence of and interaction among these actors, there is still the broader environment of the local city to take into account. For networks to work effectively, cities must have a basic foundation that allows the startup community to flourish. We refer to these as the environmental building blocks that create a platform for entrepreneurial activity.

“A lot of urban development is about laying the foundation for a successful city, and you can then build startups on that foundation.”

Anonymous Roundtable Participant, Cities

While there are many ways to dissect the importance of local environments in providing opportunities for business creation, these four stand out as the most fundamental necessities:

Broader Factors that Lay the Foundation for Startup Ecosystems



Figure 08. The Platform—Environmental Building Blocks

Without an adequate **regulatory environment**, the ecosystem has difficulty in establishing new business operations and novel partnerships between Entrepreneurs, Civic Institutions, and Citizens.

Without an adequate **quality of life**, the ecosystem struggles to recruit and retain the talented workforce startups need to succeed.

Without adequate **creative thinking**, the ecosystem is unable to generate the new ideas that power startup formation or embrace new ways of doing business that may run counter to existing traditions.

Without adequate **density**, the ecosystem cannot connect actors to each other in a way that forms a cohesive, fluid network. There must be enough opportunities for overlap to allow for regular interaction.

“My job is to create a platform: a talented workforce, a good transportation system, all the other aspects that lead to quality of life and make people want to live here.”

Rahm Emanuel, Mayor, Chicago

Everyone within a city contributes to the establishment of these building blocks. “The Platform” essentially refers to several components of a city’s overall culture, which is determined by the collective actions and attitudes of local residents. However, two specific actors that serve as uniquely important platform influencers are governments, which create the regulatory environment, and universities, which provide talent and promote creative thinking.

From V1.0 to V2.0—Creating Conditions vs. Active Empowerment

Together, the main actors, supporting actors, and platform influencers all work together to form a rich, decentralized network that allows innovation to take root. The result is the Civic Entrepreneurial Ecosystem:

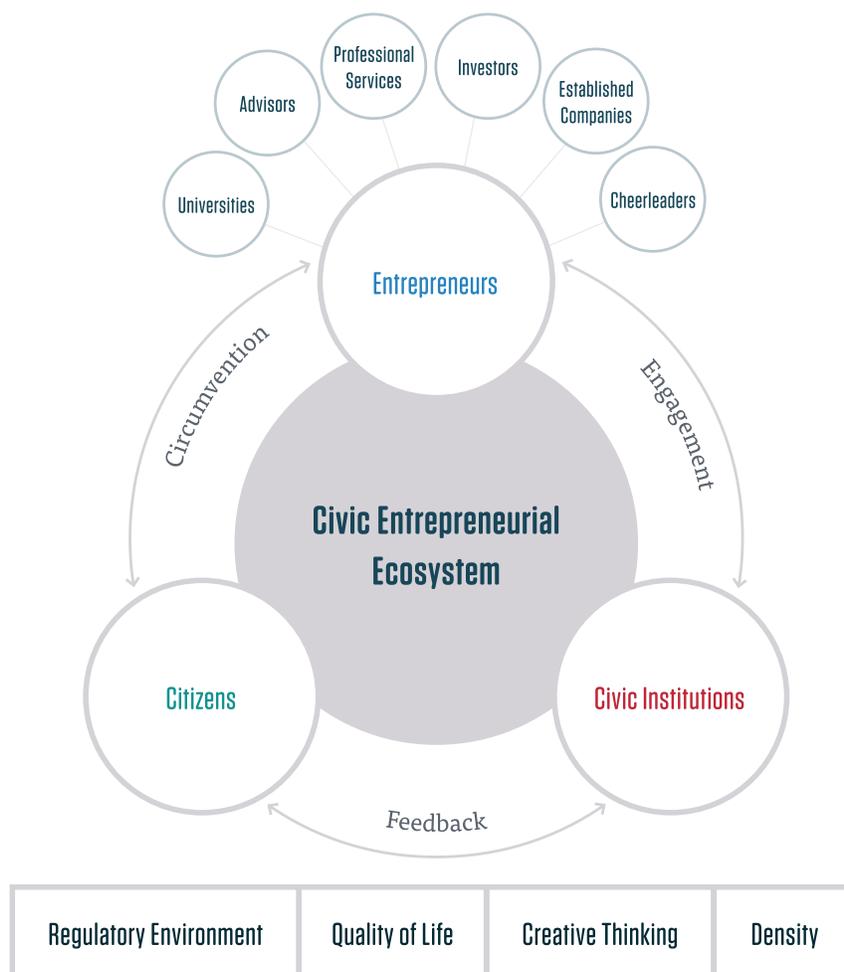


Figure 09. Civic Entrepreneurial Ecosystem

However, building a civic startup community is about more than just establishing this network. It is not enough for cities to passively create conditions—of which entrepreneurs could theoretically take advantage—and hope that successful startups emerge. To advance a robust ecosystem, those who want a startup community to flourish must actively work to help individual companies achieve success. This requires understanding company growth stages and identifying how to help a company at each stage. Creating the conditions by forming a network is the first layer of ecosystem building (V1.0), while active intervention with specific companies is the second (V2.0).

What exactly does V2.0 entail? It does not mean guiding startups by the hand; it should always be up to the entrepreneurs themselves to seize opportunities. Rather, it means working collaboratively with entrepreneurs to identify key milestones for success, interpret signals to track progress, and provide the relevant and useful resources to help them meet their unique needs at each stage of development.

Startups in the civic sector—especially those that engage with institutional partners—tend to follow a longer, slower process to build a business (see Section VI, “Listening Tour Insights”). We have identified three principal stages of company development: Concept, Customer Development, and Growth:

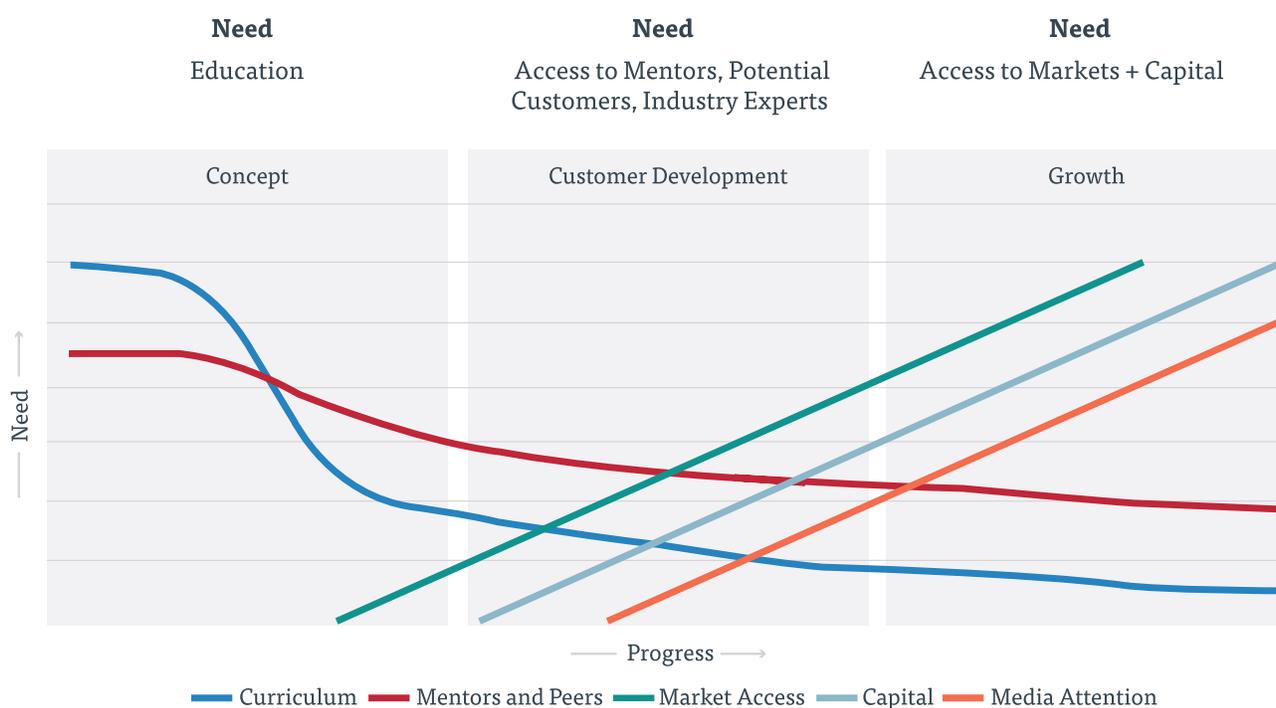


Figure 10. Start-up Needs at Each Stage of Growth

Startups in the concept stage primarily need **education** about how to build companies and about their industries. They need to quickly become oriented around “the right way” to build their business.

Startups in the customer development stage primarily need **access to mentors, industry experts, and potential customers**. They need to test their ideas with experts in their industries and with target customers.

Startups in the growth stage primarily need **access to markets and capital** in order to drive scale. This can include marketing opportunities, media engagement strategies, and assistance raising capital.

By understanding these stages of startup growth, individuals working to build startup communities can identify what interventions and curated connections can actually be useful to helping companies overcome hurdles and move on to the next stage in their development. This allows supporters to take a more active role in achieving outcomes, which is the basis for this second level of our framework:



Figure 11. From V1.0 to V2.0: The Two Layers of Ecosystem Building

V1.0 and V2.0 are steps one and two, respectively, of creating robust startup communities. V1.0 is about cities creating the conditions: the network that can link the lead and supporting actors together and the platform of environmental buildings blocks needed for startups to flourish. This does not require active involvement with particular startups.

Once this effort to create the conditions has been accomplished, it is necessary to transition to V2.0, which requires active effort from local stakeholders in order to achieve outcomes for local startups. This requires studying these startups to understand their current stage of development and creating and executing strategies to overcome hurdles. These two layers of intervention are necessary in order to achieve the final goal: a robust community of successful startups that forms the basis for a true ecosystem.

Civic Entrepreneurship Index

Overview

The Civic Entrepreneurship Index represents a study of the civic sector startup ecosystem in eight U.S. cities:

- Austin, TX
- Boston, MA
- Chicago, IL
- Detroit, MI
- New Orleans, LA
- New York, NY
- San Francisco, CA
- Washington, DC

The index measures the progress each city is making toward establishing a civic tech ecosystem in five areas:

1. **Leadership:** Influence of Serial Entrepreneurs
2. **Institutional and Corporate Support:** Influence of Civic Institutions and Corporations
3. **Capital:** Influence of Angel and Venture Capital Investors
4. **Talent:** Influence of Workforce
5. **Community Support Structures:** Influence of Support Organizations and Startup Peers

Each area is measured in two ways:

1. **Scale:** Estimates the size of each asset (66.6%)
2. **Engagement:** Estimates civic entrepreneurs' perceptions of their ability to access each asset (33.3%)

These two measurements are based on the understanding that, in order for any of these components of the ecosystem to have influence, it must have a sizeable presence (scale) as well as an active engagement with entrepreneurs. For example, a strong hospital system that does not engage with health startups has a limited influence on civic entrepreneurship, as does a well-engaged hospital system that does not have the size or resources to help startups scale their businesses.

For scale metrics, we gathered data from a variety of public and private databases and reports. For engagement metrics, we conducted a survey in partnership with the Brunswick Group of 230 entrepreneurs working in our core industries across all eight cities.

For each metric, cities were classified relative to each other along the following range:

1. **Nascent:** Early stage of development, beginning traction
2. **Emerging:** Early-to-middle stage of development, some traction
3. **Established:** Middle-to-advanced stage of development, significant traction
4. **Leading:** Advanced stage of development, best-in-class traction

For more information on the sources used for each metric, see the Technical Appendix.

Key Findings

Network Connectivity is the “Secret Sauce” Driving Ecosystem Growth

In addition to survey questions about specific actors, we asked entrepreneurs to rate the strength of their city's overall network. Comparing the results with each city's classification in the index, we found a clear positive correlation (0.83) between perceived network connectivity and actual ecosystem development:

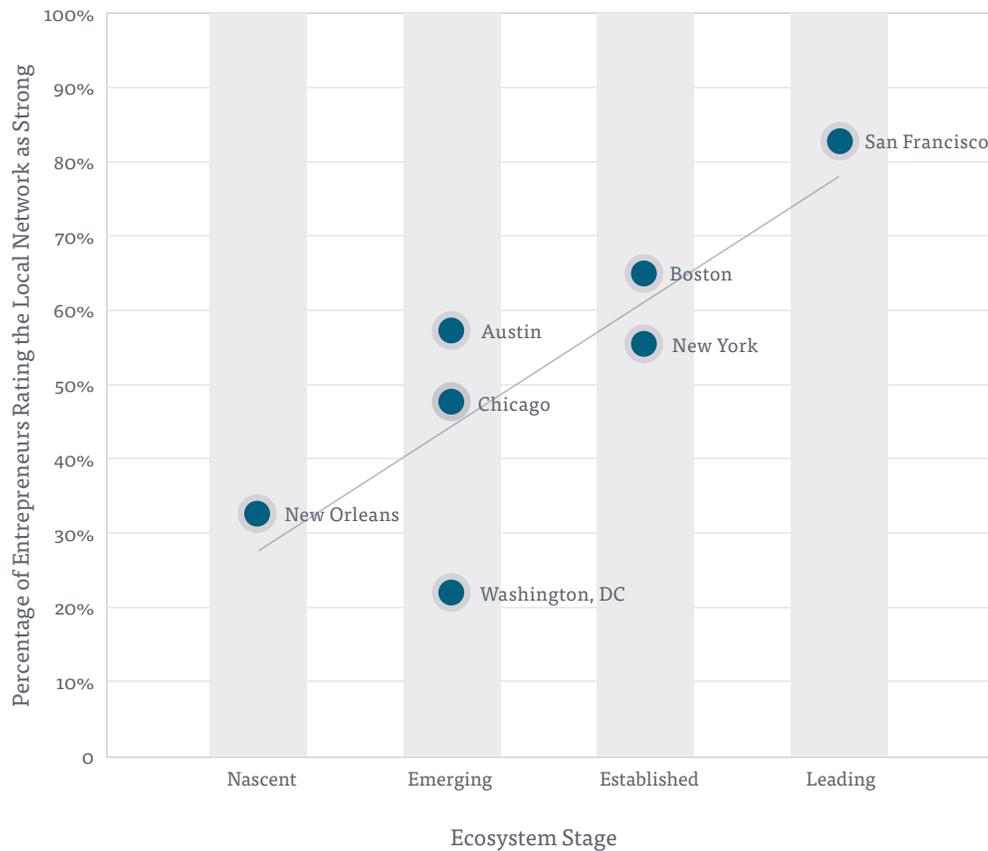


Figure 12. The Network Effect

This is the **clearest proof of our overall thesis**: Despite the supposedly unique nature of the education, energy, health, and cities industries, network connectivity is the defining factor that influences the development of entrepreneurial innovation in all four fields.

Each City is Making Progress Toward Establishing a Civic Entrepreneurship Ecosystem

While some cities are further along than others in this process, there are clear signals of growth in each community we studied. From an expanding number of startup companies, champions, and exits to growing pools of capital and talent, momentum in this sector is not limited to any specific city.

Institutional and Corporate Support Is Still a Somewhat Untapped Resource

Overall, survey scores revealed that communities’ civic institutions (schools, hospitals, utilities, and local governments) and local corporations are the entities with which entrepreneurs have the least engagement. Perhaps most interestingly, entrepreneurs in San Francisco had especially low perceptions regarding engagement from these groups,

despite institutions' and corporations' relatively robust presence locally. We believe this shows that the traditional tech entrepreneurship model pioneered in Silicon Valley has not yet discovered a method to fully collaborate with existing institutional resources. There remains a major opportunity for startups to better leverage these assets.

Scale and Engagement are not Always Aligned

Comparing our scale and engagement metrics, it was clear that just because a city had made progress in developing one of its component areas, entrepreneurs did not always view this as a major asset. Washington, D.C., for example, had a sizeable number of successful exits and champions that could be expected to produce a strong community of serial entrepreneurs, but startups in the city did not perceive leadership from such entrepreneurs to be significant.

In other circumstances, entrepreneurs did view certain component areas as major assets, even if scale metrics showed them to be relatively small. New Orleans entrepreneurs, for example, found community support structures to be a significant strength, even though such structures are not as numerous as they are in other cities.

Cities Have Strong Talent Bases for Innovation in the Civic Sector

From traditional tech talent and STEM workers to the educator and healthcare workforces, significant numbers of local residents in each city can help drive innovation in their industries and promote new entrepreneurial initiatives. While some cities performed especially well in terms of talent, every city demonstrated that it had unique human resources assets to tap.

Results

Table 01. Civic Entrepreneurship Index

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Leadership	Leading	Emerging	Emerging	Nascent	Nascent	Established	Leading	Established
Institutional and Corporate Support	Emerging	Established	Leading	Nascent	Emerging	Established	Emerging	Emerging
Capital	Emerging	Leading	Emerging	Nascent	Nascent	Established	Leading	Emerging
Talent	Established	Leading	Emerging	Emerging	Emerging	Established	Leading	Emerging
Community Support Structures	Emerging	Established	Leading	Nascent	Emerging	Leading	Established	Established
Overall	Emerging	Established	Emerging	Nascent	Nascent	Established	Leading	Emerging

Table 02. Leadership

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Leadership	Leading	Emerging	Emerging	Nascent	Nascent	Established	Leading	Established
Exits: Education	Established	Emerging	Emerging	Nascent	Nascent	Established	Leading	Leading
Exits: Energy	Established	Leading	Nascent	Emerging	Nascent	Established	Leading	Emerging
Exits: Health	Established	Established	Emerging	Nascent	Nascent	Emerging	Leading	Leading
Exits: Smart Cities	Established	Emerging	Established	Nascent	Nascent	Emerging	Leading	Leading
Champions: Education	Emerging	Nascent	Nascent	Nascent	Nascent	Emerging	Leading	Leading
Champions: Energy	Established	Leading	Nascent	Nascent	Nascent	Established	Leading	Emerging
Champions: Health	Established	Established	Emerging	Nascent	Nascent	Emerging	Leading	Leading
Champions: Smart Cities	Emerging	Emerging	Established	Nascent	Nascent	Emerging	Leading	Emerging
Perceived Engagement from Serial Entrepreneurs	Leading	Emerging	Established	N/A*	Established	Established	Leading	Nascent

*Detroit did not have a statistically significant number of survey responses

Table 03. Institutional and Corporate Support

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Institutional and Corporate Support	Emerging	Established	Leading	Nascent	Emerging	Established	Emerging	Emerging
Education: Elite Universities	Nascent	Leading	Emerging	Nascent	Nascent	Leading	Established	Established
Education: Universities	Nascent	Leading	Established	Nascent	Nascent	Leading	Established	Emerging
Education: Community Colleges	Established	Nascent	Leading	Nascent	Emerging	Leading	Established	Nascent
Education: Public School System	Established	Nascent	Emerging	Nascent	Leading	Established	Emerging	Leading
Energy: Utilities	Nascent	Established	Leading	Emerging	Emerging	Established	Leading	Nascent
Energy: Major Corporations	Nascent	Emerging	Established	Nascent	Emerging	Emerging	Nascent	Leading
Health: Hospital Network Size	Nascent	Established	Leading	Established	Nascent	Leading	Emerging	Emerging
Health: Hospital Network Quality	Nascent	Established	Leading	Emerging	Nascent	Leading	Established	Emerging
Health: Star Hospitals	Nascent	Established	Emerging	Nascent	Nascent	Leading	Emerging	Nascent
Health: Major Corporations	Nascent	Emerging	Established	Nascent	Nascent	Leading	Emerging	Nascent
Smart Cities: Digital Cities Rating	Emerging	Leading	Established	Nascent	Nascent	Emerging	Emerging	Nascent
Smart Cities: Municipal Innovation Program	Yes	Yes	Yes	No	Yes	No	Yes	No
Perceived Engagement from Civic Institutions	Emerging	Established	Established	N/A*	Leading	Nascent	Nascent	Leading
Perceived Engagement from Corporations	Leading	Emerging	Established	N/A*	Established	Established	Nascent	Emerging

*Detroit did not have a statistically significant number of survey responses

Table 04. Capital

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Capital	Emerging	Leading	Emerging	Nascent	Nascent	Established	Leading	Emerging
Venture Capital Investment	Emerging	Established	Emerging	Nascent	Nascent	Established	Leading	Emerging
Angel Investment	Emerging	Leading	Emerging	Nascent	Nascent	Established	Leading	Established
Potential Wealth Investment	Nascent	Emerging	Established	Emerging	Nascent	Leading	Leading	Established
Unlocked Capital Ratio	Established	Leading	Nascent	Emerging	Nascent	Established	Leading	Emerging
Perceived Engagement from Angel Investors	Emerging	Emerging	Established	N/A*	Established	Nascent	Leading	Nascent
Perceived Engagement from VC Investors	Nascent	Established	Leading	N/A*	Emerging	Established	Leading	Emerging

Table 05. Talent

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Talent	Established	Leading	Emerging	Emerging	Emerging	Established	Leading	Emerging
Resident Tech Skills (Percentage of Residents)	Leading	Established	Emerging	Established	N/A**	Emerging	Leading	Nascent
Resident Tech Skills (Total Residents)	Emerging	Emerging	Established	Nascent	N/A**	Leading	Leading	Established
Education: Teacher Workforce	Leading	Leading	Emerging	Emerging	Established	Emerging	Nascent	Established
Energy: Engineer Workforce	Leading	Leading	Emerging	Nascent	Emerging	Nascent	Established	Established
Energy: STEM Workforce	Established	Leading	Emerging	Emerging	Nascent	Nascent	Established	Leading
Health: MD Graduates	Nascent	Leading	Established	Established	Leading	Nascent	Emerging	Emerging
Health: Nursing Workforce	Emerging	Leading	Emerging	Nascent	Established	Established	Nascent	Leading
Perceived Level of Talent Quality	Established	Leading	Emerging	N/A*	Nascent	Established	Leading	Nascent

*Detroit did not have a statistically significant number of survey responses

** New Orleans was not included in the study

Table 06. Community Support Structures

	Austin	Boston	Chicago	Detroit	New Orleans	New York	San Francisco	Washington, D.C.
Community Support Structures	Emerging	Established	Leading	Nascent	Emerging	Leading	Established	Established
Incubator Programs	Established	Established	Established	Nascent	Emerging	Leading	Leading	Established
Accelerator Programs	Emerging	Leading	Emerging	Emerging	Nascent	Leading	Leading	Established
Co-Working Facilities	Emerging	Established	Established	Emerging	Nascent	Leading	Leading	Nascent
Education: Startups	Emerging	Established	Established	Nascent	Nascent	Leading	Leading	Emerging
Energy: Startups	Established	Leading	Emerging	Nascent	Nascent	Established	Leading	Emerging
Health: Startups	Emerging	Established	Established	Nascent	Nascent	Leading	Leading	Emerging
Smart Cities: Startups	Emerging	Established	Emerging	Nascent	Nascent	Leading	Leading	Established
Perceived Engagement from Community Programs	Nascent	Emerging	Leading	N/A*	Leading	Emerging	Nascent	Established

*Detroit did not have a statistically significant number of survey responses

City Findings

This section provides further breakdown of results for each city using more detailed data from the survey as well as insights from the roundtable discussions. (For more information on the roundtable discussions, see Section VI “Listening Tour Insights.”)

Each city’s chart shows its classification for each component of the Civic Entrepreneurship Index as well as more detailed survey results highlighting local entrepreneurs’ perceptions about the support they receive from specific groups in the community. The purpose of the chart is to highlight the areas in which each city excels and where it may have room for improvement.

The key findings below each chart explain specific aspects of each city, both through analysis of the index and survey as well as through the roundtable discussions.

Austin

Table 07. Austin

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Leading	Serial Entrepreneurs	55%	47%	8%
Institutions/Corporates	Emerging	Civic Institutions	35%	36%	-1%
		Corporates	48%	27%	21%
Capital	Emerging	Angel Investors	31%	38%	-7%
		VC Investors	8%	27%	-19%
Talent	Established	Talent Pool	63%	54%	9%
Community	Emerging	Incubator Programs	55%	71%	-16%
Overall	Emerging	Overall Network	57%	52%	5%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Successful exits, current champions, and engagement by serial entrepreneurs have given Austin a strong advantage in local leadership.

- Austin has a comparatively small base of corporates and civic institutions, but local entrepreneurs perceive strong corporate support.
- Despite a decent number of programs and startups, local entrepreneurs perceive weak support from incubators, accelerators, coworking spaces, and other similar groups.

Roundtable Discussions

- Participants cited Austin’s high quality of life and unique culture as the fundamental underpinning of the city’s growing startup ecosystem.
- With rapid growth in recent years, participants worried that Austin may lose its collaborative community feel or affordability advantage over time.
- SxSW was held up as a model of successful “celebration” that helps drive national buzz for the local community.

“People come to Austin and end up getting stuck here. They want to stay because of this culture.”

Kevin Koym, Tech Ranch

“It’s amazing how inclusive the community is. When I arrived in Austin everyone said, ‘Good to meet you, how can I help?’”

Kevin Callahan, MapMyFitness

“As we grow, we can’t have it both ways—we can’t get \$80 million fundraising rounds and not have a highly competitive culture.”

Julie Huls, Austin Technology Council

Boston

Table 08. Boston

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Emerging	Serial Entrepreneurs	46%	47%	-1%
Institutions/Corporates	Established	Civic Institutions	39%	36%	3%
		Corporates	20%	27%	-7%
Capital	Leading	Angel Investors	31%	38%	-7%
		VC Investors	21%	27%	-6%
Talent	Leading	Talent Pool	74%	54%	20%
Community	Established	Incubator Programs	64%	71%	-7%
Overall	Established	Overall Network	66%	52%	14%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Talent is Boston’s strongest advantage, as reflected in both the index and survey scores.
- Boston’s sizeable capital base makes it a leader in this category, but local entrepreneurs still perceive weak support both from angel and venture capital investors.
- Local entrepreneurs perceive the overall connectedness of the ecosystem as a major strength.

Roundtable Discussions

- Participants regularly cited the Massachusetts Institute of Technology (MIT) as the driving institution of the Boston ecosystem.
- Participants described Boston’s startup scene several times as highly localized around Kendall Square and Cambridge. However, new hubs, such as the Innovation District, are growing as well.
- Participants cited lack of “celebration” as a factor that is holding back the community, suggesting that more self-promotion could be beneficial.

“Everything starts with the talent, and that’s the biggest strength here. There’s diversity from a skill point of view—the hackers from the technical schools and the hustlers from the business schools—plus a diversity of nationalities.”

Eveline Buchatskiy, TechStars

“We suffer from this ‘uberlocalization’ where everything is concentrated in just one place. We need to be able to break out of that.”

Anonymous Roundtable Participant

“Boston has a great entrepreneurial ecosystem, but we don’t have anyone who’s a spokesperson for Boston who makes the national press. We could use that.”

Jean Hammond, LearnLaunch

Chicago

Table 09. Chicago

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Emerging	Serial Entrepreneurs	48%	47%	1%
Institutions/Corporates	Leading	Civic Institutions	40%	36%	4%
		Corporates	30%	27%	3%
Capital	Emerging	Angel Investors	37%	38%	-1%
		VC Investors	35%	27%	8%
Talent	Emerging	Talent Pool	48%	54%	-6%
Community	Leading	Incubator Programs	89%	71%	18%
Overall	Emerging	Overall Network	48%	52%	-4%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Despite Chicago’s robust base of corporates and civic institutions, local entrepreneurs do not perceive particularly strong support from these actors.
- A high number of community support programs combined with entrepreneurs’ perceived support from these programs makes Chicago a leader in this category.
- Local entrepreneurs do not perceive the talent pool as one of the community’s strengths.

Roundtable Discussions

- Participants regularly cited the strength of Chicago’s corporate community as a major asset.
- Chicago’s role as the urban hub of the Midwest region and its connection to the “Heartland” were considered to be significant competitive advantages for its entrepreneurial community.
- Participants felt that Chicago was still in the early stages of “unlocking its hidden capital” to invest the community’s wealth in startup activity.

“Loyalty is a Midwest virtue; people here don’t have one foot out the door. It’s a longer-term view that you just don’t find on either coast. Here it’s about sticking with a business and building it.”

Howard Tullman, 1871

“One great benefit of Chicago is that you can bring all these major actors together into a concentrated ecosystem that is more connected to the Heartland and less isolated than the coastal cities. Things that work in Chicago can spread to the rest of the country more easily.”

Haibo Lu, CancerIQ

“We’re not trying to play copycat with Silicon Valley. We’re not trying to create apps to play games; we’re trying to combine innovation with engineering talent coming out of our ecosystem to reinvent our established companies.”

Terry Howerton, TechNexus

Detroit

Table 10. Detroit

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Nascent	Serial Entrepreneurs	N/A	47%	N/A
Institutions/Corporates	Nascent	Civic Institutions	N/A	36%	N/A
		Corporates	N/A	27%	N/A
Capital	Nascent	Angel Investors	N/A	38%	N/A
		VC Investors	N/A	27%	N/A
Talent	Emerging	Talent Pool	N/A	54%	N/A
Community	Nascent	Incubator Programs	N/A	71%	N/A
Overall	Nascent	Overall Network	N/A	52%	N/A

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- The small number of civic sector startups in Detroit made it challenging to find a sample size that was statistically significant. As a result, Detroit’s survey responses are revealed as “N/A.”
- Detroit’s talent base is its strongest asset. The index revealed that a high percentage of Detroit’s incoming residents possess tech skills, and its existing workforce of engineers, educators, doctors, and STEM employees can help strengthen the city’s nascent civic tech ecosystem.
- A growing network of accelerator programs and coworking spaces is strengthening Detroit’s community support structures.

Roundtable Discussions

- The strongest theme of the discussions in Detroit was that the city had passed a historical turning point recently and that there was a growing emphasis on entrepreneurship and its potential to create new, innovative local industries.
- While still small, the local entrepreneurship community considered its cohesive, well-connected nature to be a significant source of strength.

- The revitalization of the urban core of downtown and midtown Detroit was seen as creating a centralized local hub that has helped to strengthen the local community.

“We’re at a tipping point. We’ve seen a fair share of challenges and a lot of that is behind us. People are seeing unique things happening in Detroit and want to be on the cusp of the rise.”

Paul Riser, TechTown Detroit

“One of the challenges we have in Michigan is that our innovation culture is hypercompetitive; it’s not network based. We have to have network-based cooptition.”

Jean Redfield, NextEnergy

“What I’ve found in Detroit is if you want to build something here, people will rally to your cause.”

Eleanor Meegoda, Mason

New Orleans

Table 11. New Orleans

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Nascent	Serial Entrepreneurs	50%	47%	3%
Institutions/Corporates	Emerging	Civic Institutions	44%	36%	8%
		Corporates	33%	27%	6%
Capital	Nascent	Angel Investors	33%	38%	-5%
		VC Investors	17%	27%	-10%
Talent	Nascent	Talent Pool	33%	54%	-21%
Community	Emerging	Incubator Programs	100%	71%	29%
Overall	Nascent	Overall Network	33%	52%	-19%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Strong perceived engagement from community support programs is a major strength of the New Orleans ecosystem.
- Despite an emerging local talent pool, entrepreneurs still perceive talent to be a major issue.
- Local entrepreneurs perceive the overall ecosystem to be significantly less connected than do their peers in other cities, a strong disconnect from what we heard during the roundtables.

Roundtable Discussions

- Participants regularly cited the post-Hurricane Katrina recovery as a catalyzing period for the community, during which it embraced new approaches and collaborations in its effort to rebuild. There was a strong sense that New Orleans was “in the first inning” of its new entrepreneurial ecosystem’s development.
- Across roundtables, participants mentioned that this success was due to “breaking down old silos” and an increased emphasis on open, collaborative networks.

- New Orleans has experienced a major influx of young talent in recent years, as Millennials are attracted by the quality of life and affordability. However, the “missing generation” of older, experienced talent—the result of years of brain drain—has left a mentorship gap in the ecosystem.

“Katrina fractured the closed, insular networks of the past. You have a new, grassroots movement, a community where the networks are starting to open up and scale.”

Tim Williamson, Idea Village

“We used to be resigned to the fact that if someone had a great idea, they would leave for Boston or wherever. Now I see those networks building here. It’s getting easier to retain those good ideas.”

Jerry Bologna, Jefferson Parish Economic Development Commission

“We have to create opportunities for all of the community, we can’t leave people behind. We’re missing inclusiveness, we need to make sure that everybody feels that they have a part in this.”

Allen Square, PosiGen

New York

Table 12. New York

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Established	Serial Entrepreneurs	48%	47%	1%
Institutions/Corporates	Established	Civic Institutions	27%	36%	-9%
		Corporates	24%	27%	-3%
Capital	Established	Angel Investors	26%	38%	-12%
		VC Investors	26%	27%	-1%
Talent	Established	Talent Pool	58%	54%	4%
Community	Leading	Incubator Programs	65%	71%	-6%
Overall	Established	Overall Network	56%	52%	4%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Despite strong performance across the board in the index, there was no particular supporting role in the ecosystem that New York entrepreneurs perceived as an above-average strength.
- Local entrepreneurs perceive weak support from angel investors and civic institutions.
- New York’s robust number of incubators, accelerators, and coworking spaces, as well as a large number of startups, makes it a leader in community support structures.

Roundtable Discussions

- Participants cited scale as the defining feature of the New York entrepreneurial ecosystem, although it was perceived as both a strength (amount of resources) and weakness (difficult to navigate).
- There was a general sense that the community had been successful at “celebration” in recent years, especially with the Bloomberg Administration making a major public relations push to establish New York’s reputation as a center of tech startup activity.
- Participants regularly cited New York’s unique, one-of-a-kind appeal as the country’s predominant city as a key advantage in helping to grow its ecosystem.

“The thing that makes New York interesting and exciting is the scale. The level of investment and networks you can build and leverage is unparalleled.”

Josh Robin, Masabi

“One challenge here is the cohesiveness of the startup community itself. A lot of groups are working on this, but it’s pretty hit or miss. A lot of startups here are pretty siloed. That’s changing, but it still has a ways to go.”

Steven Nerayoff, CloudParc

“New York is one of a handful of cities in the world that can claim to be a true global city. We attract every level of talent, no matter how obscure it is. This is where the highest rewards can be received and where the most ambitious come.”

Kevin Hom, CUNY

San Francisco

Table 13. San Francisco

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Leading	Serial Entrepreneurs	53%	47%	6%
Institutions/Corporates	Emerging	Civic Institutions	22%	36%	-14%
		Corporates	17%	27%	-10%
Capital	Leading	Angel Investors	53%	38%	15%
		VC Investors	38%	27%	11%
Talent	Leading	Talent Pool	77%	54%	23%
Community	Established	Incubator Programs	52%	71%	-19%
Overall	Leading	Overall Network	83%	52%	31%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Strong overall performance establishes San Francisco as the leading city for civic entrepreneurship.
- San Francisco’s “secret sauce” is its network, with local entrepreneurs perceiving the overall network to be significantly stronger than in any other city.
- Despite the city’s otherwise-dominant performance, entrepreneurs’ perceived low levels of support from civic institutions and corporations, demonstrating one weakness of San Francisco’s ecosystem.
- San Francisco leads in number of community support programs and startups; however, low perceived support from these programs holds San Francisco back in this category, perhaps reflecting a heightened level of local competitiveness.

Roundtable Discussions

- Participants regularly referred to the open and well-connected networks as a primary feature of the local ecosystem, reinforcing the survey findings.
- In recent years, startups have migrated from Silicon Valley to the City of San Francisco, as its urban quality of life attracts young talent. Due to fierce competition for this talent, companies are relocating to where the employees are, not vice-versa.

- Participants mentioned that, despite San Francisco’s status as the central hub of digital innovation, it must maintain open and collaborative connections with other cities that specialize in separate industries in order to thrive.

“San Francisco is really about the strong network effects. We’re really good at creating networks, at getting people together to work on their ideas.”

Nadia Eghbal, Collaborative Fund

“The level and discourse when it comes to technology is so high here. People live and breathe their jobs way more than they would anywhere else, and there’s a sense of let’s all work together, because there’s no traditional path.”

James Windon, Brigade

“While San Francisco is really great at a lot of things, there is a realization that in certain sectors you need to be somewhere else.”

Laurent Crenshaw, Yelp

Washington, D.C.

Table 14. Washington, D.C.

Category	Index Rating	Relevant Role	Percent Indicating Support from Role	Survey Average	Distance from Average
Leadership	Established	Serial Entrepreneurs	28%	47%	-19%
Institutions/Corporates	Emerging	Civic Institutions	44%	36%	8%
		Corporates	20%	27%	-7%
Capital	Emerging	Angel Investors	19%	38%	-19%
		VC Investors	17%	27%	-10%
Talent	Emerging	Talent Pool	28%	54%	-26%
Community	Established	Incubator Programs	69%	71%	-2%
Overall	Emerging	Overall Network	22%	52%	-30%

*Includes Schools for Education, Utilities for Energy, Provider and Payer Networks for Health, and Local Government Agencies for Cities

**Includes Incubators, Accelerators, Coworking Spaces, Interest Groups, Event Programming

Key Findings

Index and Survey

- Despite relatively strong performance on other indicators, local entrepreneurs perceive the D.C. ecosystem to have weak engagement across a variety of roles, as well as a weak overall network.
- Entrepreneurs perceive engagement by civic institutions to be a relative strength of the local ecosystem.
- D.C.’s major overall strength has been the success of local civic sector startups in recent years, although that has not yet translated to perceived high levels of engagement from serial entrepreneurs.

Roundtable Discussions

- Participants cited D.C.’s quality of life as a major asset as it has led to an influx of young talent in recent years.
- The success of earlier-generation startups, such as AOL and Blackboard, are perceived to have had a significant catalytic effect on the community, laying the foundation for more recent success.

- Participants said the city’s strong policy and public-affairs expertise is a unique asset into which startups are just beginning to tap as they navigate complicated regulatory barriers.

“If you want workers who aren’t drones, this is a great place to be. The people here are passionate and interesting.”

Anonymous Roundtable Participant

“D.C. has such a rich community of policy experts, trade associations, global institutions, embassies, and other groups with a deep interest in improving the world we live in. We are working every day to open up those resources and connect them with startups that can do just that.”

Evan Burfield, 1776

“The problem is that there are separate conversations in this city between the people focusing on national policy issues and those working on the ground locally who don’t have access to these resources.”

Anonymous Roundtable Participant

Listening Tour Insights

We traveled to **8 cities**, organized **38 roundtables**, and spoke with **366 people** about what is and isn't working to build their startup ecosystems. Here's what we learned:

Cities Visited:

- Austin, TX
- Boston, MA
- Chicago, IL
- Detroit, MI
- New Orleans, LA
- New York, NY
- San Francisco, CA
- Washington, DC

Roundtable Discussions in Each City:

- Startup Economy (Overall Tech Sector)
- Education
- Energy
- Health
- Cities

Our insights from these discussions focus primarily on the **parallels across cities and industries**. The themes that emerged repeatedly from the discussions drive to the heart of the fundamental opportunities, challenges, and solutions in civic tech innovation. This listening tour confirmed to us that our core industries have far more in common with each other than they may realize; there are fundamental business model similarities that highlight the unique nature of civic sector entrepreneurship and its contrast to the traditional tech industry.

For each roundtable, we posed a broad question to the group: Explain the strengths and weaknesses of your local ecosystem. As participants shared their views, we noted the frequency with which certain themes were brought up. What follows is an explanation of each theme, along with relevant quotes and data revealing how often it was mentioned during the discussions. The data emphasize the pervasiveness of these topics within the civic sector.

Our insights are divided into three categories:

1. **Opportunities:** Key factors underlying the potential for startup expansion in the civic sector
2. **Challenges:** Barriers to promoting successful entrepreneurial innovation in the civic sector
3. **Solutions:** Guiding principles for overcoming existing challenges and creating collaborative communities

Opportunities

What Creates the Potential for Increased Entrepreneurial Activity in the Civic Sector?

During our roundtable discussions, participants across our core industries repeatedly mentioned the following five themes as having a significant influence on the emergence of entrepreneurial activity in their ecosystems. The frequency with which these topics arose demonstrated their overall importance for understanding the growth of civic entrepreneurship across the country.

1. **The Asset Base:** Cities are learning how to tap into existing resources to grow their startup communities
2. **The Evolving Civic Sector:** Changing business models are reinventing civic institutions and creating new openings for entrepreneurs
3. **The Disruptive Urgency:** Concerns about industry disruption have increased the willingness of civic institutions' and corporations' willingness to work with startup companies

4. **The Citizen Engagement Factor:** Civic institutions are looking for new ways to directly connect with citizens in order to improve the quality of their services
5. **The Dual Paths: Partner or Circumvent:** Startups increasingly have the option to work with established organizations in entrenched industries or to go around them if those organizations resist change

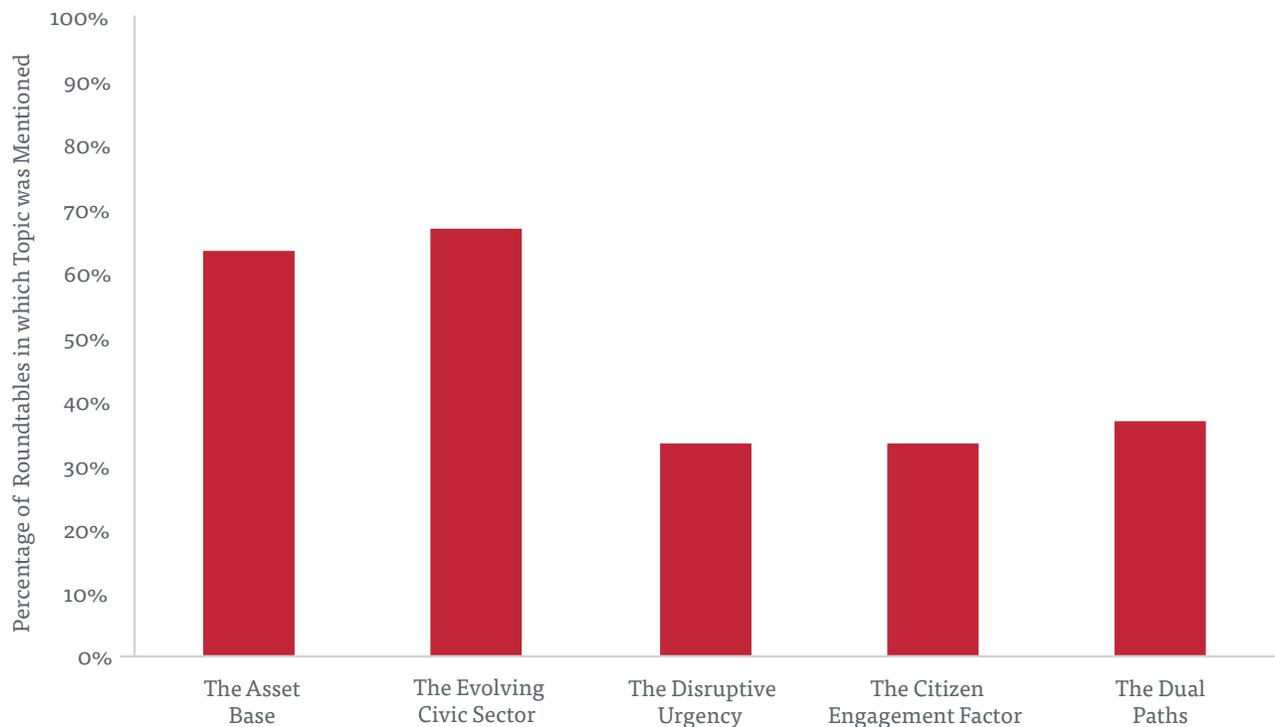


Figure 13. Top Five Opportunities

THE ASSET BASE

Theme was raised by participants during 63% of roundtables

The Asset Base refers to the idea that **cities already have the resources** they need to build successful startups. The question is how to leverage these resources in a way that provides useful support to entrepreneurs. Repeatedly, we heard local leaders point to several major assets already existing in their local communities:

The Talent Pool

Local residents working in the civic sector already possess creative ideas and relevant skillsets that can help foster new business activity. Engineers, educators, medical professionals, researchers, industry experts and others form a built-in human capital base that, if nurtured properly, can be unleashed to promote new civic innovation.

“The Texas Medical System is full of ideas and pent up entrepreneurs.”

Rick Anderson, PTV Healthcare Capital, Austin, Health

The Corporate Base

The local business community has professional expertise, existing market channels, and capital resources—all of which can be used to support new innovation. Corporations can be important consumers of or investors in new technologies or services developed by startups. Activating the corporate base requires conscious effort to integrate these existing businesses into the entrepreneurial ecosystem.

“We’ve been able to develop relationships with Shell and BP and others. They’re supportive of this entrepreneurial activity.”

Mitch Jacobson, Austin Technology Incubator, Austin, Energy

“Corporates come to us and say ‘We’re looking for solutions. If you can match us up with people who can provide them, we’ll invest.’”

Troy Ault, Cleantech Group, San Francisco, Energy

The Civic Institution Base

Cities have an existing collection of civic institutions such as schools, utilities, hospitals, and local government agencies, established to serve the public interest. These organizations have deep knowledge about their particular industries, operational expertise about how to provide relevant services, and a desire to drive innovation to further the public interest. Connecting these civic institutions’ internal innovation with the startups working on similar initiatives can help to drive more useful entrepreneurial activity.

“Boston has the best of everything: the best hospitals, schools, insurance companies”

Paris Wallace, Ovuline, Boston, Health

“Austin has everything in terms of resources and types of schools: public schools that span the socioeconomic spectrum, charter schools doing things outside the box, and a big homeschool community.”

Ripal Nathuji, StemED Labs, Austin, Health

THE EVOLVING CIVIC SECTOR

Theme was raised by participants during 67% of roundtables

The Evolving Civic Sector refers to the idea that **changing business models are forcing civic institutions to reinvent themselves**, providing an opportunity for startups to build new tools and solutions that help guide these market shifts. While the transformations described here are unique to each of our core industries, they reveal a broader pattern of across-the-board change in the civic sector when considered holistically. This change is not exclusively centered around or driven by startups, but entrepreneurs do play a major role within the evolution of each industry.

Education: Change of Focus from Inputs to Outcomes

At both the K-12 and university levels, the education sector has been changing dramatically in recent years with an emphasis on measuring student performance and proving efficacy.³ More than ever, states are pressing schools to demonstrate results and to find the means to achieve those results at a reasonable cost. This shift from the traditional focus on measuring inputs such as textbooks, classroom size and teacher certifications to outputs such as student outcomes and skillset development has created new opportunities for education-technology startups to offer innovative solutions to drive this transformation.

“Until recently in education, there was no urgency to innovate and work with startups. The model was working just fine. Now that’s starting to shift.”

Jeff Dunn, DeVry Education Group, Chicago, Education

“The wind is at our backs in education. With a push toward helping more students learn well and finish strong being really driven hard by federal and state governments, foundations, etc., the reins have come off with how you get to outcomes now. There’s oxygen for the entrepreneurs to come in and provide solutions.”

Mark Milliron, Civitas Learning, Austin, Education

Energy: Change of Inputs and Systems with New Power Sources and Smart Grid Technologies

With newly emergent renewable energy technologies including solar, wind, increased natural gas production from hydraulic fracturing (known as fracking), and an explosion of energy-efficiency and smart-grid solutions, the traditional utility and grid model is undergoing a major shift. From a broad perspective, this is a shift in terms of the inputs used in energy production and the role of data monitoring. This shift requires existing infrastructure to undergo major transformation, creating opportunities for innovative energy-technology startups to create new hardware and software.

“We’re shifting from a centralized energy-generation model to a distributed model. Entrepreneurs definitely see this as an opportunity.”

David Gilford, NYC Economic Development Corporation, New York, Energy

“All over the country, progressive utilities are looking for a business model that will work so they can make money off of energy efficiency and renewable energy.”

Debra Rowe, Oakland Community College, Detroit, Energy

Health: Change of Focus from Inputs to Outcomes

The U.S. health system is transitioning from a fee-for-service model, in which providers charge per procedure to an outcome-based model, in which providers receive reimbursement based on their ability to improve patient health.⁴ Similar to education, this shift from inputs to outcomes is creating new opportunities for health-tech startups to offer innovative solutions that drive this transformation.

“There’s a huge focus now on creating a full cycle of care. It’s not just the hospital visit, but looking at it as a whole.”

Dr. Richard Wolfe, Beth Israel Deaconess Medical Center, Boston, Health

“It’s about building for shift. There are a lot of companies addressing fee-for-service, but it’s moving to a value-based system. You have to be able to evolve with that.”

Arun Ravi, Mevoked, San Francisco, Health

Cities: Constrained Municipal Finances and Shifting Urban Demographics

As aging populations and infrastructure cause prolonged fiscal challenges for local governments⁵, cities are beginning to embrace new forms of public-private partnerships and inter-city collaboration. This has created opportunities for startups to become engaged in this process and integrate their solutions into programs aimed at reinventing urban services.

“As cities become more constrained in their fiscal capacity, they’ll rely more and more on the private sector for areas that used to be city functions.”

Julia Tasch, MacArthur Foundation, Chicago, Cities

“In scarcity you become more creative and innovative, and governments are becoming more open in this era of limited resources.”

Kiran Jain, Neighbor.ly, San Francisco, Cities

THE DISRUPTIVE URGENCY

Theme was raised by participants during 33% of roundtables

The Disruptive Urgency refers to the idea that **the Digital Revolution has made civic institutions and corporations wary about their ability to adapt to changing circumstances**. This wariness has increased their desire to work with startups to navigate the new landscape of the digital era.

Businesses as Tech-Enabled

As the Digital Revolution takes hold, new technologies are emerging across existing industries. From news media and advertising to retail and tourism, existing businesses are starting to recognize that their sectors have become “tech-enabled” as startups redefine the landscape.⁶

Example: The rise of platforms for Massive Open Online Courses (MOOCs) such as EdX and Coursera has shifted university lectures to the digital world, turning institutions of higher education into tech-enabled organizations with global reach.

Example: The decline of print newspapers and the rise of digital media outlets such as Vox and BuzzFeed have transformed the news industry and caused traditional publications such as The New York Times and the Washington Post to increase and improve their digital offerings.⁷

“If there’s a business that’s not tech-enabled, I can’t imagine what it is.”

Howard Tullman, 1871, Chicago, Startup Economy

“The successful startups here have tended to be functions of the dominant industries such as media, financial services, fashion, and culture. It’s not like they have no relationship with these existing industries.”

Andrew Yang, Venture for America, New York, Startup Economy

The Fear of Disruption

Amid this changing landscape of tech-enabled industries, corporations are increasingly concerned that their traditional business models could become upended by digital technology.

“These two worlds are coming together, but you can’t just crash them together and expect things to be smooth.”

Jeff Dunn, DeVry Education Group, Chicago, Education

“Corporations are getting more nervous about disruption.”

Terry Howerton, TechNexus, Chicago, Startup Economy

“Healthcare is the largest industry in the country, and there’s \$1 trillion that is going to get cut out and moved to a totally new set of companies over the next ten years.”

Paris Wallace, Ovuline, Boston, Health

Increasing Corporate Outreach to Startups

As a result of these concerns, corporations are increasing their outreach to startups and are exploring partnerships to develop new technologies together. This openness to entrepreneurial innovation provides greater opportunities for startups to access existing resources from the established business community.

“There is a new attitude that companies are willing to take this external innovation over something they do in-house”

Bill Mayer, Ann Arbor SPARK, Detroit, Startup Economy

“Many organizations have teams connecting with the startup community as an open-sourced, faster path to new ideas and concepts.”

Steve Ramsay, Microsoft, Boston, Startup Economy

THE CITIZEN ENGAGEMENT FACTOR

Theme was raised by participants during 33% of roundtables

The Citizen Engagement Factor refers to the idea that **success in civic innovation depends on empowering citizens to become more involved in their interactions with service providers** such as schools or hospitals. Whether it is patients taking more control over their health outcomes, energy consumers better tracking their consumption, or local residents providing more direct feedback about city services, there is optimism that digital technologies can promote user engagement.

Service Providers are Seeking Citizen Engagement

Civic institutions recognize that they need more, not less, citizen involvement in order to improve their services. As citizens gain more access to information, they are able to make better decisions about how to interact with civic institutions and utilize the services they provide, reducing inefficiencies caused by lack of consumer knowledge and creating better outcomes. By increasing citizens' ability to learn more about services and make smarter choices, civic institutions decrease information asymmetries⁸ and create more efficient markets in the civic sector.

Example: Improving patient engagement is considered central to improving the healthcare system, as individuals do more to keep themselves healthy outside of the doctor's office. The growth of digital health-tracking technologies such as FitBit and Jawbone have created optimism in the medical community that wearable devices and software applications could provide a new avenue for promoting engagement.⁹

Example: The U.S. Department of Education is developing a new higher-education rating system that provides information about how schools perform in terms of access, affordability, and outcomes. One primary purpose of this system is "to help students and families make more informed choices during the college search and selection process."¹⁰

"We have made it okay for an individual to know more about the car they're buying than they know about their health care. We have to change that to put an onus on the consumer."

Leah O'Donnell, Zaffre Investments, Boston, Health

"We have to go to the public and ask what they want. We need to have citizen engagement to understand how they want the city to be formed."

Bob Gedert, Austin Resource Recovery, Austin, Cities

The Opportunity for Institutions to Embrace the “Voice of the Customer”

The “Voice of the Customer”, or VoC, is a term that has emerged in recent years in the information-technology sector to explain how digital technologies have increased consumers’ ability to provide feedback on products and services, and how companies are able to compile and review that feedback.¹¹ Using social media platforms, website traffic monitors, customer services emails, chats, and surveys, businesses have more tools than ever before to determine what their customers really want and to devise new ways to satisfy them.¹²

Startups can play a role in applying the VoC concept to the civic sector to bridge the gap between civic institutions seeking engagement and citizens armed with new tools to provide feedback. For this to be successful, however, institutions must embrace the mindset that their users are *customers* opting to utilize a given service as an economic transaction, rather than thinking of them as students, patients, ratepayers, or local residents who are not active participants in the exchange.

“Everybody needs to be able to comment on your product and say, ‘This is how I used it.’ Parents need to talk to each other; students need to talk to each other. There is this whole Voice of the Customer going on.”

Elizabeth Hibner, The Council for Adult and Experimental Learning, Chicago, Education

“When I started off at Seton, I would ask about the customers and they would correct me, saying, ‘No, they’re patients.’ I would say, “No, they’re customers; there’s exchange of goods and services.’ Now they’ve embraced that.”

Mike Millard, Seton Hospital, Austin, Health

THE DUAL PATHS: PARTNER OR CIRCUMVENT

Theme was raised by participants during 37% of roundtables

The Dual Paths: Partner or Circumvent refers to the idea highlighted in Section III (The Framework: The Civic Entrepreneurial Ecosystem) that startups have two routes to explore when developing new technologies for the civic sector. **They can create a consumer product to sell directly to citizens—thus circumventing existing civic**

institutions—or they can partner with those institutions, selling them technology that improves service delivery. Having these two avenues available creates opportunities for entrepreneurs in case the first approach proves unsuccessful.

Partner

Startups often partner with civic institutions to develop or test new technology. They also build relationships with civic institutions by hiring public affairs experts to smooth over tensions when they do arise.

“Energy and transportation technologies are particularly capital intensive and have to be proven in the context of the existing system, either as an adjunct to the system or disruptors to the system.”

Jean Redfield, NextEnergy, Detroit, Energy

“When advising startups, we always tell them you should think of government as a partner. Startups worry that they may be shut down or given a cease and desist, so lobbyists are becoming more and more popular as these companies are looking to scale.”

Julie Lein, Tumml, San Francisco, Cities

Circumvent

When faced with barriers, startups often go directly to the consumer, strengthening the direct link between entrepreneurs and citizens.

“Uber sent a message to the government that you can choose to not play ball, but that doesn’t mean things aren’t going to happen. They pushed it away, but then it happened anyway.”

Gabe Klein, Fontinalis Partners, Washington, D.C., Cities

“We try to go directly to parents to get around the bureaucracy of the schools.”

Christopher Flint, Infiniteach, Chicago, Education

Challenges

What are the Barriers to Successful Entrepreneurial Innovation in the Civic Sector?

During our roundtable discussions, participants across our core industries repeatedly mentioned the following five themes as major impediments to increased entrepreneurial activity in their ecosystems. The frequency with which these topics arose demonstrated their overall importance for understanding the current limits of civic entrepreneurship.

1. **The Alignment Gap:** Even with the resources in place, actors within an ecosystem often do not collaborate effectively
2. **The Bureaucratic Maze:** When engaging with civic institutions, entrepreneurs must navigate a series of complicated relationships in order to gain traction
3. **The Credibility Dilemma:** Startups face a chicken-or-the-egg problem of getting initial customers to pilot technology when its efficacy is still unproven
4. **The Risk Disincentives:** Civic institution administrators and employees face strong motivations to avoid taking risks that could endanger their organizations or careers
5. **The Noise Factor:** The explosion of startup activity has made it more difficult for civic institutions to distinguish high-quality startup technologies, creating “startup fatigue”

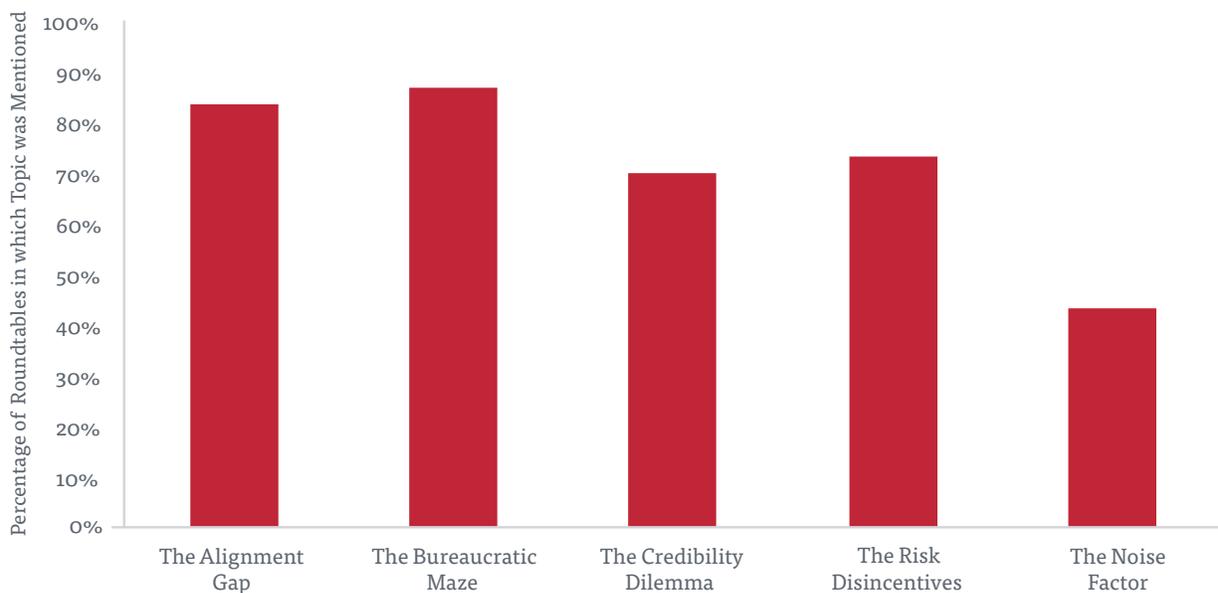


Figure 14. Top Five Challenges

THE ALIGNMENT GAP

Theme was raised by participants during 83% of roundtables

The Alignment Gap refers to the idea that the lack of coordination between the different actors in a given ecosystem impedes further innovation and startup growth. This relates closely with the network concept outlined in Sections II (“Introduction”) and III (“The Framework: The Civic Entrepreneurial Ecosystem”) that is the core of our overall findings. When the network is not cohesive and well integrated, the disconnect creates a barrier to entrepreneurial innovation. Three types of alignment gaps were discussed during the roundtables:

- a. **General Disconnect**
- b. **Cultural Divides: Lack of Understanding**
- c. **Contrasting Business Incentives**

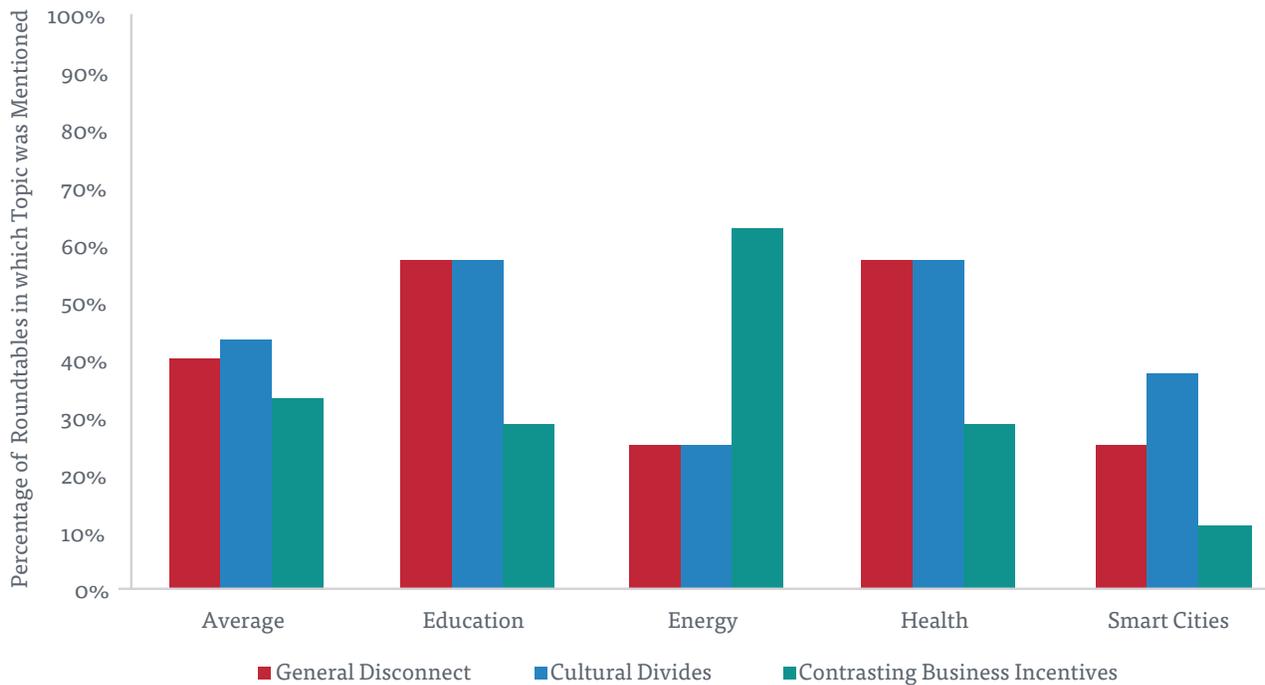


Figure 15. The Alignment Gap: Subcategories

General Disconnect

In many roundtables, participants expressed a feeling that the different pieces of the ecosystem weren't coming together in an effective way, representing a missed opportunity. The term often used to describe this separation was a culture of "silos".

"There's a discombobulated association of groups, but no good cohesion or glue. All the ingredients are there, but how do we put it all together?"

Dr. Aaron Ali, MedtoMarket, Austin, Health

Cultural Divides: Lack of Understanding

Beyond the basic sentiment of separation or isolation, roundtable participants spoke about specific cultural gaps between different groups in the ecosystem. Participants expressed frustration that different actors were speaking past each other because they were unable to understand each other's perspectives and explain their ideas in ways to which other groups could relate. This was most pronounced when it came to interactions between entrepreneurs and representatives from civic institutions (administrators, doctors, teachers, etc.). At its core, this issue signifies an inability to understand different perspectives.

"There's a huge disconnect, a gap between school administrators largely working on compliance and education entrepreneurs seeking disruptive change. They don't speak the same language. They operate in very different worlds."

David Deschryver, Whiteboard Advisors, Washington D.C., Education

"We often come across products that are not helping educators and are trying to help in places they don't need help."

Chaula Gupta, Chicago Public Education Fund, Chicago, Education

Contrasting Business Incentives

General Disconnect and Cultural Divides represent unintentional gaps. However, roundtable participants also mentioned how the lack of alignment in their ecosystem was sometimes the result of business incentives that do not motivate certain actors to cooperate in promoting new innovation.

“Startups have to understand how today’s volume-based reimbursement system makes it hard for many providers to invest in tools that improve quality by reducing ER visits or hospitalizations, as that is not aligned with the financial incentives of the hospital.”

Dr. Lyle Berkowitz, Northwestern Memorial Healthcare, Chicago, Health

“Today, utilities have very little incentive to develop clean, new technologies because they’re threats to the status quo.”

Anonymous Roundtable Participant, Energy

“Monopolies fight to preserve market share. It’s not a criticism of people; they’re just acting rationally and responding to all the incentives baked in, but it does retard innovation because monopolies can close off channels to market for companies with disruptive innovations.”

Brewster McCracken, Pecan Street, Austin, Energy

THE BUREAUCRATIC MAZE

Theme was raised by participants during 87% of roundtables

Civic institutions are known for their large, complicated bureaucracies. Startups looking to partner with these institutions have to find a way through these labyrinths—a major challenge for entrepreneurs. There are several components to navigating the bureaucracy:

- a. **The Entry Point**
- b. **The Procurement Process**
- c. **Long and Unpredictable Sales Cycles**
- d. **Intra-Institutional Barriers**
- e. **The Fragmented Landscape**

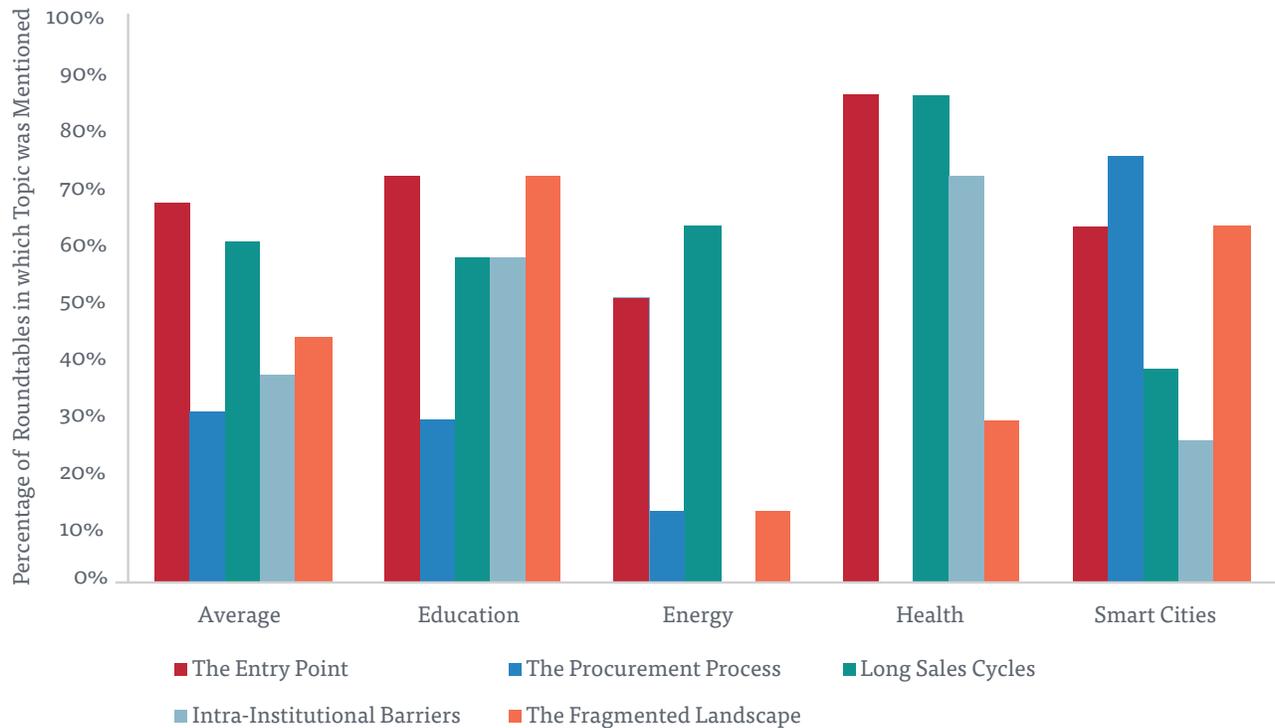


Figure 16. *The Bureaucratic Maze: Subcategories*

The Entry Point

In a bureaucracy, it’s often unclear which person holds decision-making authority. One of startups’ main difficulties is finding the right internal contact or gatekeeper within the civic institution.

“The decision-making process jumps around—from IT to the CMO back to IT.”

Pinaki Dasgupta, Hindsait, New York, Health

“When you’re getting a product into a school, you go through this sales process of needing to get the approval of many different people and figuring out who the right person to talk to is.”

Ryan Hoch, Overgrad, Chicago, Education

“There are institutions that don’t have a clear process. If there is a single gatekeeper and not a more multi-faceted team, you can sometimes be stonewalled.”

David Fairbrothers, Dorsata, Washington D.C., Health

The Procurement Process

Civic institutions, especially government authorities, employ purchasing procedures known as “procurement,” in which private companies bid to provide products and services. Startups often struggle to compete for these opportunities, simply due to the nature of their business models and the often-bureaucratic procedures to which they must adhere.

Procurement procedures normally involve a request for a pre-determined technology solution with specific dimensions; this allows institutions to know exactly what they are buying. However, this is not how technology startups build products. Startups use an iterative product design process known as “agile development” that rapidly builds, tests, and iterates upon different solutions, in order to arrive at a more reliable and innovative end product ideally designed for users’ needs. This divide between traditional procurement procedures (focused on an **exact product**) and technology development (focused on the **process to create a product**) constitutes a major barrier for startups looking to provide more creative solutions for civic institutions.¹³

In addition, the rigid rules governing procurement are generally seen to favor larger, more established firms with prior vendor experience and precise cost structures. New companies thus begin with an inherent disadvantage, due to their lack of an existing track record or financial history.¹⁴

“Procurement is a headache for all of us, because the way we normally think about procurement is we are procuring a particular solution with specific dimensions.”

Nigel Jacob, Mayor’s Office of New Urban Mechanics, Boston, Cities

“The challenge is when we find something we like, buying it is hard. Our procurement procedures are based on buying trains, not apps.”

Anonymous Roundtable Participant, Government Transit Agency

“Sometimes, the contracts are just based on cost, not technology merits. It should always be a combination of the two to ensure the best service at the most reasonable cost wins the day.”

Chris Thomas, Fontinalis Partners, Detroit, Cities

Long and Unpredictable Sales Cycles

Whereas traditional consumer-focused tech startups are focused on rapid growth generated by viral user engagement, civic tech tends to grow at a slower rate due to long sales cycles in civic institutions. Startups often get stuck waiting extended periods of time for final budgetary approvals, which can lead to cash-flow problems that put them out of business if revenue does not arrive in time. Venture capital investors accustomed to “hockey-stick growth”¹⁵ often struggle to embrace this slow-and-steady pace of growth, which can make it harder for startups to raise money to alleviate their cash-flow issues.

“There are budget cycles that we deal with. Budgets are typically spoken for a year in advance. Sometimes it’s three to six months before authorizations are even issued.”

Jon Rimanelli, Detroit Aircraft, Detroit, Cities

“There’s a long sales cycle; it can take two years after you find someone who wants to use your product. It takes a lot of patience.”

Tyler Ortega, ORA Estuaries, New Orleans, Energy

“Money from Silicon Valley requiring certain growth metrics over however many months is just not the way that scaled success has occurred in education. Growth is slower and service-led; it’s not started by teacher downloads or SaaS revenue.”

Christopher Nyren, Educated Ventures, Chicago, Education

Intra-Institutional Barriers

Bureaucracy can be plagued by significant separation between administrators (school superintendents and principals, hospital managers, department chiefs) and front line staff (teachers, doctors, nurses, civil servants). This disconnect creates an additional barrier to adoption as front line staff don't always support new approaches and solutions presented by administrators—and vice-versa. For startups, this means that finding a successful entry point can sometimes prove insufficient when it comes to getting support from the civic institution for adoption and implementation. The need to generate buy-in from actors across the civic institution poses a significant bureaucratic challenge for entrepreneurs.

“The distance between the user and buyer can be immense. Teachers are very engaged in innovation and new products when they find them and adopt them, but they tend to be less engaged when the district says to use something.”

Kin Lo, Kaymbu, Boston, Education

“When it comes to the front line, the customer tends to be the CIOs, which is very different from the interests of the front line manager. There we still have a very large disconnect in terms of products that actually focus on the user.”

Dr. Richard Wolfe, Beth Israel Deaconess Medical Center, Boston, Health

“You need to get the civil servants on board too. You have to sell at the top, sell at the middle, and sell at the bottom.”

John Peracchio, Peracchio & Co, New York, Cities

The Fragmented Landscape

Some civic institutions operate in highly decentralized environments, where service provision in a given region is divided among many independent operators. This fragmentation presents a double-edged sword, as it makes it easier for startups to find initial customers but creates barriers to scaling after the technology has been proven effective.

Benefits of Decentralization:

“With more local entities, it’s easier to get traction with one of them; there are more pockets of authority. The more nodes there are, the better the chances that I have a network connection.”

Sarah Haig, Silverside Detectors, Boston, Cities

“The decentralization can actually lead to a more robust seed-stage ecosystem where you’re able to play off the competitiveness of these institutions.”

Doug Hayes, Blueprint Health, New York, Health

Challenges to Scale:

“That said, decentralization does make it harder to go from 1-5 to 50 customers.”

Doug Hayes Blueprint Health, New York, Health

“Decentralization creates a risk for entrepreneurs. There’s a real likelihood that you solve a problem in New Orleans and you solve it well, but you go outside the city and find that problem doesn’t exist elsewhere—the market doesn’t exist—and you’re unable to scale your innovation.”

Jen Medbery, Kickboard, New Orleans, Education

THE CREDIBILITY DILEMMA

Theme was raised by participants during 70% of roundtables

The Credibility Dilemma refers to the chicken-or-the-egg problem that startups face when trying to sell their technology solutions to civic institutions. Institutional customers and investors expect a detailed evidence base with existing proof points demonstrating efficacy in order to test or fund a project. Startups often cannot provide this data until someone agrees to take a risk on them and help them pilot the new technology solution they offer.

In cases where startups do have opportunities to set up pilot evaluations, they often incur associated costs that require them to raise capital first—creating a Catch-22 for early-stage civic tech startups.

In addition, during our roundtables, intermediaries who present technology solutions from startups to civic institutions (see below section on “Honest Brokers” within Solution 1, “Establishing System Connectivity”) expressed concerns about putting their own credibility at risk by advocating for products that are not yet proven to be effective.

Startup Perspective: Confronting the Dilemma

“There’s a vicious cycle of people wanting proof points and data, but we need to get into the classrooms to get proof points and data.”

Anonymous Roundtable Participant, Education

“There’s a chicken-or-the-egg scenario of how to find capital to do a customer demonstration to prove your technology.”

Jennifer Garson, U.S. Department of Energy, Chicago, Energy

Institutional Perspective: Concerns over Unproven Solutions

“Education is a research-oriented industry; we’ve got to have the evidence. If there’s no evidence on the effectiveness of the technology, we can’t take that to our faculty or people are not even going to try it.”

Anonymous Roundtable Participant, Education

“The barrier is how do you get your hand around a new technology from an energy startup that isn’t tested and doesn’t have any real-world field experience? How do you pilot that, spend resources to monitor and service it, without having a rate impact?”

Charles Sheehan, SF Public Utilities Commission, San Francisco, Energy

Intermediary Perspective: Risking Reputation for Unproven Solutions

“We work hard to broker trusting relationships between edtech entrepreneurs and local school leaders, but the technology isn’t good enough yet and the evidence base isn’t there for us to credibly say to local school leaders, ‘Yes, you should implement this solution.’”

Anonymous Roundtable Participant, Education

“My ultimate fear is if we’re not sending good solutions that are ready for primetime up to the buyers, they’ll stop looking into our ecosystem for trustworthy solutions.”

Doug Hayes, Blueprint Health, New York, Health

THE RISK DISINCENTIVES

Theme was raised by participants during 73% of roundtables

Civic institutions have few incentives to take risks and experiment with new solutions. These organizations often face strong operational and cultural incentives to avoid rocking the boat, thus maintaining the status quo. This applies both to civic institutions as a whole as well as to individual workers within the institutions. These disincentives for risk-taking limit institutional receptiveness and willingness to work with startups to provide and implement innovative new ideas and approaches.

- **Civic Institution Disincentives**
- **Employee Disincentives**

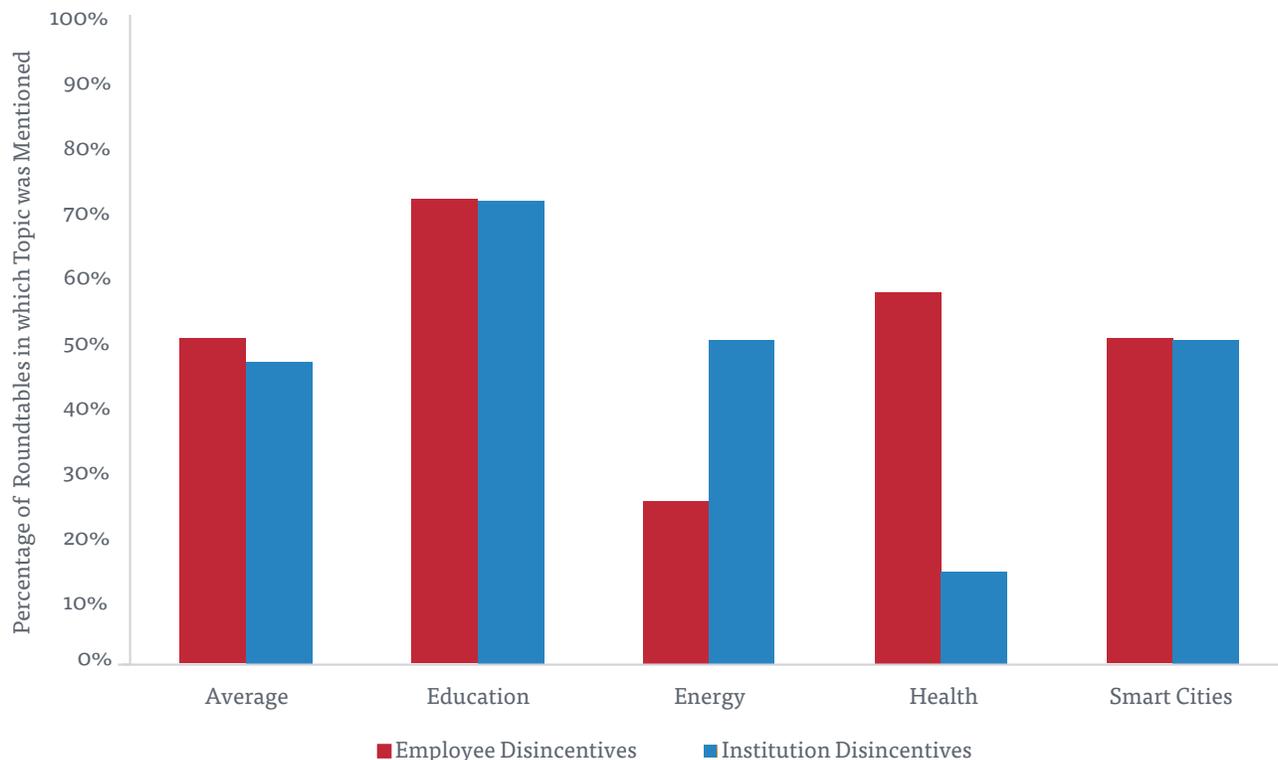


Figure 17. The Risk Disincentives: Subcategories

Disincentives for Civic Institutions

During our roundtables, representatives from civic institutions mentioned several factors as significant disincentives to experiment. First, the policy environments in industries such as education and health tend to focus on strict compliance with established rules, which creates a disincentive to test unique ideas that may not fit neatly into existing structures. Second, with high-stakes outcomes for real people such as students, patients, and local residents on the line, experimentation in the civic sector can be significantly riskier because of the adverse effects on human lives of potential failure. Third, institutions are highly concerned that any unsuccessful experiments will be perceived as harmful or wasteful failures, rather than necessary, productive steps in the learning process.

“The challenge in healthcare is the legal uncertainty. There’s no clear interpretation of rules and legal review doesn’t guarantee risk compliance for a new technology in the eyes of a hospital officer.”

Pinaki Dasgupta, Hindsait, New York, Health

“Prototyping is a sensitive topic when it comes to parents, who say, ‘You don’t just try stuff with my kid; you do the best thing with my kid always.’”

Ramon Soto, City of Boston, Education

“If students are in a pilot and have a bad experience, it reflects on our brand. They’re not going to remember the brand of the startup, they’re going to remember your university and that’s a huge impediment to getting people to experiment.”

Anonymous Roundtable Participant, Education

“What I think has been a barrier to innovation in K-12 is the worry that if we do R&D and screw it up, then we’ve wasted taxpayer money. There’s a perception that if we try something and it doesn’t work then the superintendent is going to get roasted.”

Anonymous Roundtable Participant, Education

Disincentives for Employees

For individual employees within civic institutions, there is a separate set of disincentives to consider. Employees worry that supporting an innovative new technology could get them in trouble if the experiment does not succeed—or could render their jobs obsolete if it does succeed. Also, for front line staff who already are busy with more immediate tasks such as managing a classroom or treating patients, experimentation can appear to be a distraction from the urgency of their current work.

“Governments at the operational level are incredibly risk averse. The people doing these decisions are afraid of making a mistake, so they’re not trying to be bureaucratic; they just know if they follow the rules they won’t get in trouble. That really inhibits creative thinking. The worry is, ‘If it doesn’t work, even if my mayor or city manager thinks it’s okay, I’ll get raked over the coals in the media or some other thing.’”

Sandy Baruah, Detroit Chamber of Commerce, Detroit, Cities

“Asking building managers to test new energy technologies is a real challenge. You’re putting people’s livelihoods at risk for an outcome that they have no control over, and they have zero upside. There’s no incentive.”

Dhiraj Malkani, RockPort Capital, Boston, Energy

“Districts have 85 percent of their budget locked up in people. When you come in and offer something more efficient or innovative, that’s threatening.”

David Deschryver, Whiteboard Advisors, Washington D.C., Education

THE NOISE FACTOR

Theme was raised by participants during 43% of roundtables

With increased startup activity in recent years, entrepreneurs are approaching civic institutions more than ever before. This creates more “noise” from startups that do not yet have compelling technologies or lack sufficient knowledge of their industry. As it gets harder for institutions to separate the “signal” of high-quality companies from this “noise,” they become less inclined to actively engage startups and become more skeptical of new technology solutions. Within this context, entrepreneurs feel increased pressure to make themselves stand out.

“There are an endless amount of startups that are pounding me every day.”

Dr. Lyle Berkowitz, Northwestern Memorial Healthcare, Chicago, Health

“Teachers are very tired of being handed the ‘silver bullet,’—the next great thing—and are starting to systematically reject anything that comes their way.”

Max Tuefferd, Massachusetts Charter Public School Association, Boston, Education

“I see a lot of unguided and unfocused energy. The healthcare system is so complex and only a handful of young, energizing entrepreneurs have a truly disruptive innovation. There’s just too much noise out there. Providers, hospitals and healthcare organizations are being hit with startup fatigue.”

Thomas Tsang, Merck, New York, Health

“A lot of companies get applications from different startups; it’s hard to differentiate your technology. A lot of startups learn that the hard way.”

Arun Ravi, Mevoked, San Francisco, Health

“The challenge today is one of oversaturation. Schools are bombarded with education technology products, which makes it hard to stand apart from all the noise.”

Jen Medbery, Kickboard, New Orleans, Education

Solutions

What are the Guiding Principles for Overcoming Existing Barriers to Innovation in the Civic Sector?

During our roundtable discussions, participants across our core industries repeatedly mentioned the following five themes as the most important factors for overcoming the challenges mentioned above and advancing the evolution of their ecosystems. The frequency with which these topics arose demonstrated their overall importance as solutions for increasing civic entrepreneurship activity.

1. **Establish System Connectivity:** Connect the dots between ecosystem actors to address The Alignment Gap and create a collaborative community
2. **Embrace the Friction:** Allow conflict and competition to flourish in the ecosystem as a necessary complement to collaboration, in order to create more effective and dynamic solutions

3. **Build the Market:** Open opportunities for startups to propose and create new solutions to existing needs of civic institutions
4. **Turn the Lights On:** Partner with startups to construct datasets that and create information that reveals what already is happening within civic institutions
5. **Unlock Hidden Capital:** Build mechanisms to better channel communities' existing wealth toward startup activity

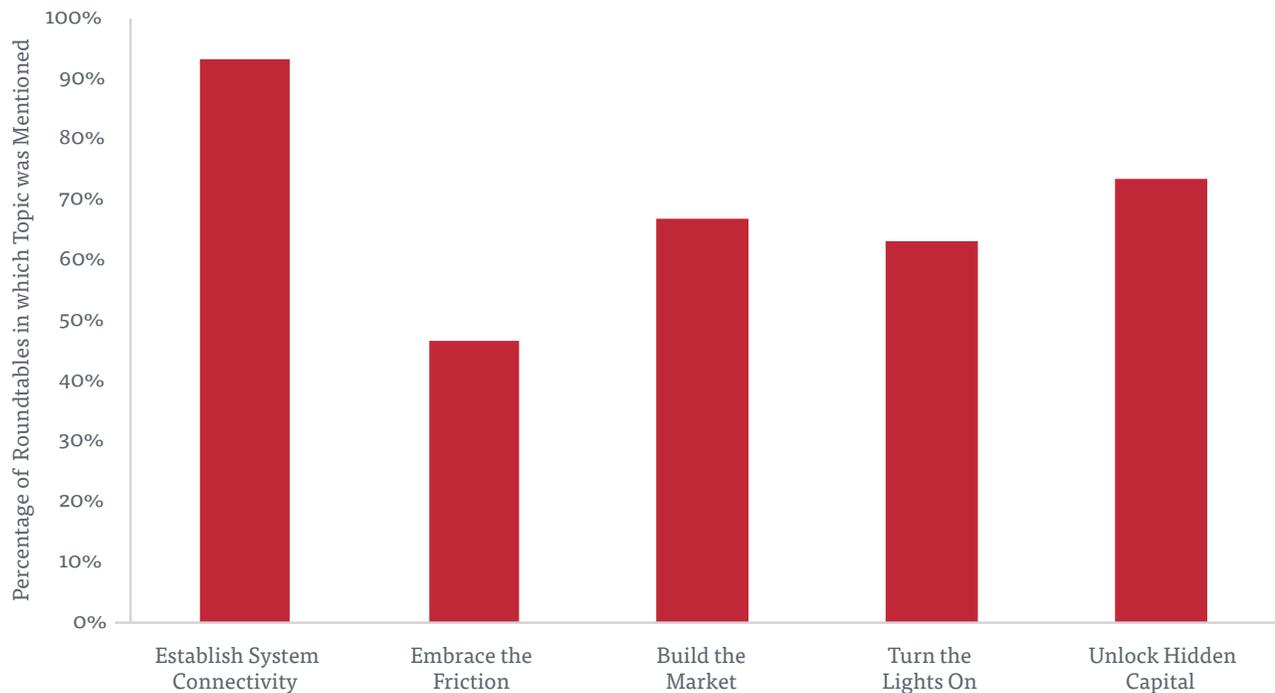


Figure 18. Top Five Solutions

ESTABLISH SYSTEM CONNECTIVITY

Theme was raised by participants during 93% of roundtables

Establishing System Connectivity is the primary solution that emerged from our roundtable discussions. It relates closely to the network concept outlined in Sections II (“Introduction”) and III (“The Framework: The Civic Entrepreneurial Ecosystem”) that is the core of our overall finding. It also is strongly connected with the Alignment Gap issues highlighted in

our Challenges section. This solution refers to the idea that **building better integration between the network of actors within a given community is the most important factor in increasing civic entrepreneurship.**

There are four steps to Establishing System Connectivity:

- a. **Map the Network**
- b. **Convene the Players**
- c. **Empower the Intermediaries**
- d. **Celebrate Successes**

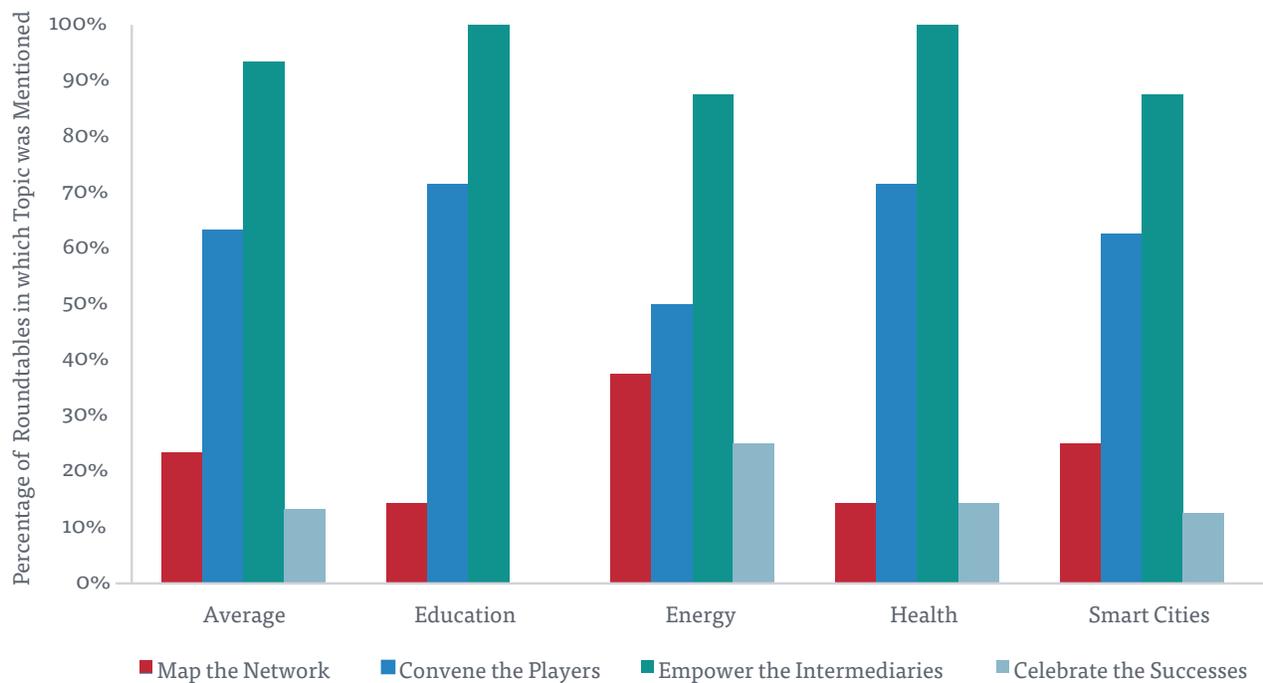


Figure 19. Establish System Connectivity: Subcategories

Map the Network

Mapping means outlining and understanding the ecosystem, as well as creating tools to explain it. This involves identifying the key actors, what roles they play, what projects they are working on, how they interact with each other, and where the missing links remain. Outputs from this effort can include reference lists, actual maps, or reports, and the results should be shared publicly. Various community stakeholders including government

officials, investors, or community leaders can initiate such a project. This network analysis should be conducted regularly over time in order to remain up-to-date and to create an entrepreneurial genealogy that tracks the progression of the ecosystem.

Example: The Detroit Green Map is a web platform created by the U.S. Green Building Council and the Detroit Green Skills Alliance. It presents information about businesses and non-profit groups that have demonstrated a commitment to environmental sustainability. The purpose of the platform is to improve communication and connections within the local cleantech ecosystem.¹⁶

Example: The EdSurge Ed Tech Index is a community-driven database of edtech products that highlights startups within the education industry and provides product reports based on interviews with teachers and administrators.¹⁷

“We need much better mapping. Everyone’s trying things, and there doesn’t seem to be much dent in the big problems. I think part of it is we’re not really aligning some of the elements. I haven’t seen a lot of mapping saying, ‘This group is interested in this issue; who else is solving that?’”

Hakan Satiroglu, LearnLaunch, Boston, Education

“This is an ecosystem with people moving in and out. There needs to be a defined space. It’s about aligning the parties. Each of the players in the ecosystem needs to understand not only that there are other parties, but who they are and what’s in their heads. If you understand that the clinicians’ motivations are this set of things, the VCs’ motivations are this set of things, the care managers’ motivations are this, then you’ll be able to fashion a way forward that brings those people into alignment.”

Barbara Mittleman, Nodality, San Francisco, Health

Convene the Players

After studying the network, the next step is to convene it: bring the key stakeholders together, allow them to familiarize themselves with each other, and establish clear goals and action plans. This process helps the community learn to work in tandem more effectively.

The Innovation that Matters roundtables are an example of convening; the strong positive feedback we received from participants revealed how important authentic discussions about big-picture issues are for these ecosystems. However, the most effective, actionable convening is organized by local actors who can set a specific agenda around the needs of the local community (whereas the purpose of the Innovation that Matters roundtables was to gather broader, more general insight).

While many groups can assume a convening role, natural actors to carry out this task include local government officials, such as mayors or city department heads, or business and entrepreneurial support groups, such as chambers of commerce or startup incubators. In order for convening to be successful over the long term, however, it must create enough bottom-up, grassroots momentum with participants in order to have a meaningful impact over an extended period of time.

“This was very much a grassroots effort, with local stakeholders like the City, the utility, incubators, the university, and industry coming together to help entrepreneurs and innovators develop breakthrough technologies in energy...with steering committees and clear objectives on what we wanted to achieve. That type of synergy that we’ve developed has really helped this industry launch into what it is today.”

Jose Beceiro, Texas State University, Austin, Energy

“There need to be better channels for us to learn from each other about what’s going on and share who’s focusing on what.”

Matt Tucker, Harvard Business School Digital Initiative, Boston, Education

“Clearinghouse functions and convening groups are really important. You need to create process groups where people can exchange information and experiences.”

Barbara Mittleman, Nodality, San Francisco, Health

Empower the Intermediaries

The next—and most important—step in establishing network connectivity is to strengthen the role of intermediaries, the key actors who act as go-betweens, translating between different groups to bridge cultural gaps and create alignment.

During our roundtables, we regularly heard how different elements of the ecosystem (for example: educators and entrepreneurs) speak completely different languages and don’t understand each other well, making effective collaboration difficult. Just as real translators can only create effective communication between people who speak different languages by becoming familiar with both of those individuals’ cultures, so the intermediaries in civic entrepreneurship ecosystems must have a foot in both worlds to serve as effective go-betweens. Empower the Intermediaries means making an active effort to find, recruit, and support individuals who can act effectively translate between cultures. Four intermediary roles in particular stood out during our roundtables:

- **“The Old Hands”**: Startup employees or mentors with in-depth industry experience
- **“The Intrapreneurs”**: Institutional actors who interface with entrepreneurs and front line staff
- **“The Honest Brokers”**: Matchmaking groups that add value by making connections across the ecosystem, but particularly between startups and civic institutions
- **“The Champions”**: Front line staff within civic institutions who act as early adopters of technology and influence peers to follow their lead

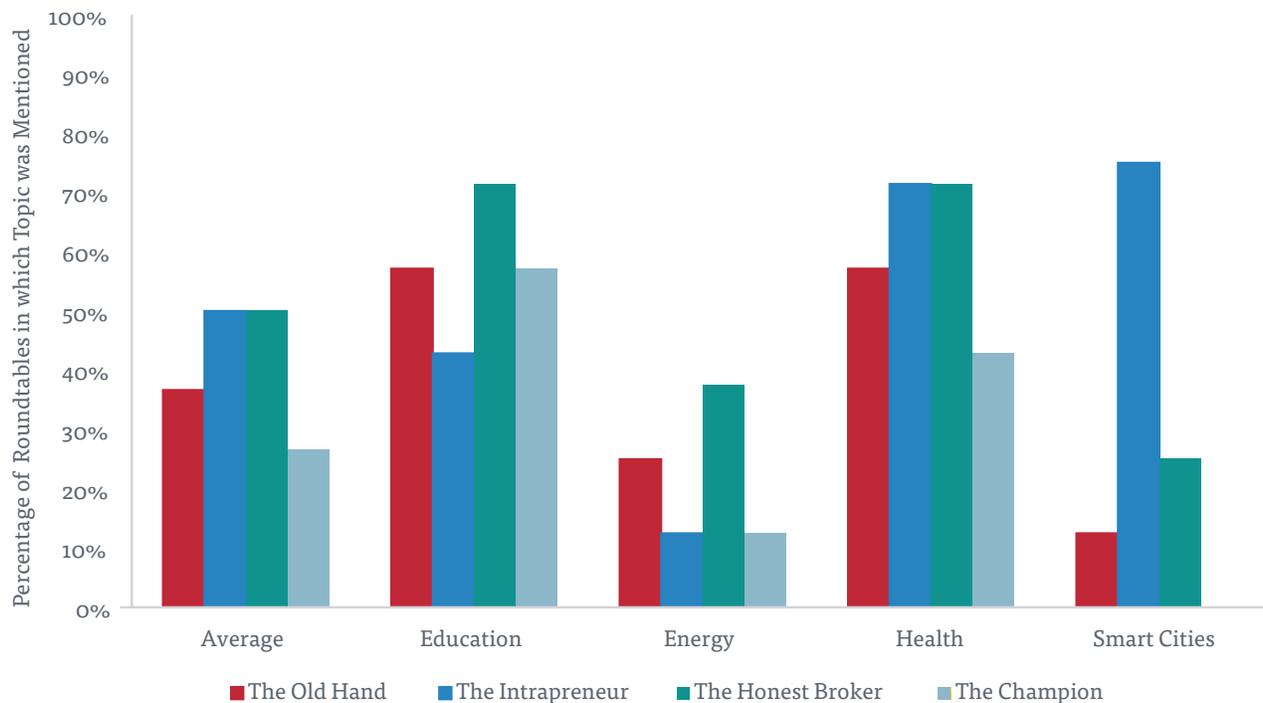


Figure 20. Empower the Intermediaries: Subcategories

The Old Hands

The Old Hands are the startups’ gateway into the industry ecosystem. They are the members of a startup team that are experienced insiders with in-depth knowledge of the specific industry, an understanding of how the civic institutions work, and who the relevant actors are. Old Hands help to explain the startup and its work in a way to which people in the industry can relate. They also educate the startup team on the nuances of the industry. While some Old Hands are founders themselves who then hire the technical talent they need, others serve as mentors or senior staff for entrepreneurs who have less experience in the field in which they have founded their business. Examples include career educators or medical professionals who transition into the startup world, as well as accelerator programs that teach entrepreneurs about a specific industry.

“Our ideal team is an MD and a CTO type. The marriage of those two sets of skills tends to work really well as the foundation for a medical-grade digital health company.”

Mark Schwartz, Launchpad Digital Health, San Francisco, Health

“You need to fill out the team and have software developers, but also people with instructional design and pedagogy experience.”

Mark Grovic, New Markets Venture Partners, Washington D.C., Education

“We have knowledge about things like procurement processes to teach our companies. It’s about mentorship.”

Dharmishta Rood, Code for America Accelerator, San Francisco, Cities

The Intrapreneurs

The Intrapreneurs are the individuals working from within the civic institutions to bring in innovation from the outside and facilitate adoption of new ideas and technologies. While the Intrapreneur is sometimes an official role such as a Chief Innovation Officer, it can also be an informal responsibility that someone inside the institution takes on based on his or her desire to bring about change. Intrapreneurs serve as key partners for startups, helping translate their ideas in ways that their colleagues inside the civic institutions will understand.

Example: The MedStar Innovation Institute (MI2) in Washington D.C., is an organization within the MedStar hospital network that is designed to promote improvements in health care technology and care delivery models. The institute serves as MedStar’s “portal to the outside world to engage with both established and startup companies.”¹⁸ This remit encourages the MI2 team to act as intrapreneurs for the institution.

Example: The Mayor’s Office of New Urban Mechanics (MONUM) in Boston is a city agency that works to improve the quality of city services overall. Its staff works with outside groups including academics, nonprofits and entrepreneurs to experiment with innovative ideas in conjunction with city staff.¹⁹

“We are often the on-ramp for local entrepreneurs trying to connect to government. We can help them to understand the challenges in that domain, facilitate collaborative relationships for pilots, help make successful pilots scale. This innovation wouldn’t happen without someone there to facilitate. It’s a very relational, marriage-broker role we end up playing for both sides.”

Nigel Jacob, Mayor’s Office of New Urban Mechanics, Boston, Cities

“You have to explain things in the language that teachers get with some intermediary who can move the needle. We used to have people internally who could work with outside groups; we need more of those people. It’s never going to perfectly fit, but it would get closer with that integration.”

Anonymous Roundtable Participant, Education

The Honest Brokers

The Honest Brokers are intermediaries that are not directly part of a startup or a civic institution. Rather, they are the matchmakers that occupy space between both groups and facilitate pairings between them. Often, Honest Brokers are investment groups, incubators, or accelerator programs, but they can also be nonprofits or other issue-focused groups looking to drive solutions in a particular area.

Example: NewSchools Venture Fund in San Francisco, Boston, and Washington D.C., is a non-profit venture philanthropy firm working to transform public education for low-income children. They provide funding and guidance for entrepreneurial organizations and work closely with schools and foundations to find new, innovative solutions to improve the education system.²⁰

Example: Cleantech Group in San Francisco and New York is a company that promotes the expansion of sustainable energy solutions by connecting startups with corporates, investors and service providers. The Cleantech model is about promoting “the innovation network that drives sustainability.”²¹

“There’s a role to be played for honest brokerage and recommendations, getting to know an academic institution’s strategic direction and then aligning different people with where they’re going. It serves the academic institution and the entrepreneurs well.”

Mark Grovic, New Markets Venture Partners, Washington D.C., Education

“With Healthbox [a health accelerator program], it’s been tremendously helpful to have an intermediary who can educate the entrepreneurs on us and educate us on them.”

Leah O’Donnell, Zaffre Investments, Boston, Health

The Champions

The Champions are the early adopters among the front line staff within a civic institution who work with entrepreneurs to improve their product and advocate passionately on a startup’s behalf. Champions are different from Intrapreneurs in that they themselves are the end users of the product and help to bridge the intra-institutional barriers mentioned above (Challenge 2: The Bureaucratic Maze). Champions help startups to scale their businesses by building the viral networks of end users that lead to broad adoption. They are uniquely positioned to translate on behalf of both the startup and the Intrapreneur to front line staff. Examples include educators or doctors who convince other educators or doctors to integrate a new technology product into their classroom or clinical practice.

“You need to have champions—someone who will passionately tell others that ‘you have to try this.’”

Juan Pablo Segura, 1EQ, Washington D.C., Health

“It’s important to identify the early adopter and get them excited.”

Jeff Dunn, DeVry Education Group, Chicago, Education

Celebrate the Successes

“Celebration” is a critical element of Establishing Network Connectivity because it creates momentum that brings more people into the ecosystem. Celebration essentially entails promoting awareness of successful projects and innovations that have demonstrably furthered civic entrepreneurship. Celebration occurs through events, media exposure, or general word-of-mouth storytelling. This often involves simply cultivating what’s already happening: generating excitement and creating buzz.

During many roundtables, many participants explained that they had not been able to sufficiently get the word out about how much they had already achieved. As mentioned in Section III (“The Framework: the Civic Entrepreneurial Ecosystem”), Celebration can be lead not only by entrepreneurs themselves, but also by the community’s “cheerleaders,” such as government officials, industry associations, chambers of commerce, bloggers, or event promoters.

Example: During our roundtable discussions in Austin, participants mentioned SxSW and its industry-specific spinoff entities such as SxSW Eco and SxSW Edu as examples of catalyzing events that generate excitement and buzz about the growing local civic entrepreneurship ecosystem.

Example: EdSurge is an educational technology company that publishes newsletters and other information about the edtech ecosystem, increasing awareness about the community’s success stories.

“We need to get better coverage that highlights our successes.”

Amy Francetic, Clean Energy Trust, Chicago, Energy

“Boston has a great entrepreneurial ecosystem, but we don’t have anyone who’s a spokesperson for Boston who makes the national press. We could use that.”

Jean Hammond, LearnLaunch, Boston, Education

“There are many people here carrying the entrepreneur flag loudly.”

Steve Austin, Founders Space, San Francisco, Startup Economy

EMBRACE THE FRICTION

Theme was raised by participants during 47% of roundtables

Networks alone are not sufficient for fostering civic entrepreneurship. Robust competition is needed to overcome entrenched business models and drive disruptive innovation. While Establishing Network Connectivity can promote greater cooperation between actors and address elements of the Alignment Gap related to general disconnect and lack of understanding, it cannot address fundamental misalignment brought about by competing business incentives that discourage groups from working together.

Thus, Embrace the Friction refers to the idea that increased competition is a necessary complement to collaboration within the ecosystem. Roundtable participants regularly referred to this dual nature of the startup community (collaborate and compete) as “coopetition.”

“There’s a complete correlation between your competitive environment and your innovation level. Competition is the lifeblood of innovation. It’s nothing to be feared; it’s something to be embraced in our community.”

Barry McConachie, Incenergy, Austin, Energy

Embrace the Friction means that communities should embrace a regulatory framework that promotes competition within entrenched industries. There is not a one-size-fits-all approach on how to do this, but three general principles apply.

Recognize the Monopoly or Incumbency Structures that Undermine Competition

The first step in promoting competition is to understand where it does not exist. This entails recognizing markets in which monopoly or incumbency structures are dominant. As explained in the “Contrasting Business Incentives” section of The Alignment Gap challenge, different groups within such a market may not be incentivized to work with

each other. When one actor has an inordinate advantage in the market, it leaves little space for others to coexist. Industries within the civic sector tend to produce such entrenched structures, and a critical element in promoting civic entrepreneurship is figuring out what industries need to be opened up to competition to drive further innovation.

“This is about displacing highly entrenched, conventional industries that have a lot of infrastructure that needs to change.”

Troy Ault, Cleantech Group, San Francisco, Energy

“Our work is about breaking the monopoly of the incumbent. There are interesting dynamics when you start competing with a well-established company.”

Anonymous Roundtable Participant, Cities

“We really are dealing with a monopoly, an anti-competitive situation. We don’t have any hope of cooperation. Your entrepreneurs are inherently up against the larger players.”

Jeff Cantin, Solar Alternatives, New Orleans, Energy

For Startups, Look for Leverage Within the System

While startups face numerous disadvantages when squaring off against incumbents, their greatest chance at success is to find access points into the system. This means building relationships and promoting new business practices within their industry to give them an advantage against more established competition. This concept is referred to as “regulatory hacking,” the process by which startups figure out how to navigate existing structures and regulations to transform the industries in which they operate, opening opportunities for business growth along the way.²²

There are different strategies that startups can employ in these efforts. Sometimes, it is simply a matter of building relationships and successfully navigating The Bureaucratic Maze. Other times, it requires more concerted action regarding existing policy.

Example: Uber has activated a large grassroots network of local citizens to advocate on its behalf in cities across the country.²³

Example: Drone companies have employed teams of experienced lobbyists in Washington, D.C. to advocate for new rules from the Federal Aviation Administration that will be favorable to entrepreneurship.²⁴

“If you figure out how to manage the bureaucracy, you can use it to your advantage and also protect your business.”

Ryan Hoch, Overgrad, Chicago, Education

“There are now so many technology entrepreneurs spilling into this space. It would be great to have these resources for education companies, but there is a briar-patch defense that protects the more bureaucratically aligned, bootstrapped and service-led companies from all the new Silicon-Valley hot money. The new entrants who are still coming from within education, who are passionate yet patient, and who have an initial pilot or school client, can withstand these challenges and actually scale.”

Christopher Nyren, Educated Ventures, Chicago, Education

For Policymakers, Adopt the Regulatory Path that Promotes Competition

From a regulatory perspective, the nature of the particular market determines which actions policymakers should take. Sometimes, the best course of action is to leave the regulations alone, let the existing market play itself out, and simply create a better roadmap for navigating this regulation. However, in other cases, policymakers may want to relax regulations to increase startup activity or create new policies to level the playing field for startups against the incumbents.

In order to assess which approach to take, policymakers must pay close attention to the signals in a given market to understand long-term trends, as well as the current traction of existing and up-and-coming technology solutions. Policymakers should remember that innovative disruption creates winners and losers, which leads to intense debates about new

technologies; this competition for ideas is part of a healthy ecosystem. Once the debate has played itself out and a winning solution has emerged within the market, policymakers can help facilitate a solution's adoption by removing the remaining regulatory barriers inhibiting its expansion.

Example: After operating for several years in Washington D.C. and clashing regularly with the local taxi commission, Uber gained enough traction as a ride-sharing service to demonstrate its effectiveness as a new transportation technology, prompting the D.C. City Council to pass new legislation legalizing ridesharing activities within city limits.²⁵

Example: SolarCity's successful solar-leasing model has helped the solar industry to expand across the country in recent years,²⁶ causing tension with established utility companies. A recent favorable ruling from the California Public Utilities Commission to waive interconnection fees for energy storage has set the stage for the industry's continued growth.²⁷

“The state mandated that 50 percent of renewable energy projects had to be from independent power producers. It provided market access for energy companies that aren't utilities and opened the door to competition.”

Dan Scripps, Michigan Energy Innovation Business Council, Detroit, Energy

“We're really happy about the proposed rule set for drones the Federal Aviation Administration has issued now because they set the bar low enough to create an environment for entrepreneurship.”

Jon Rimanelli, Detroit Aircraft, Detroit, Cities

BUILD THE MARKET

Theme was raised by participants during 67% of roundtables

Build the Market refers to the idea that active effort from civic institutions is sometimes needed to create new demand for products and services, which can in turn lead to new startups seeking to meet that demand. There are three ways in which institutions can build the market:

- a. Issue the Challenge
- b. Encourage Prototyping
- c. Co-Create New Tools

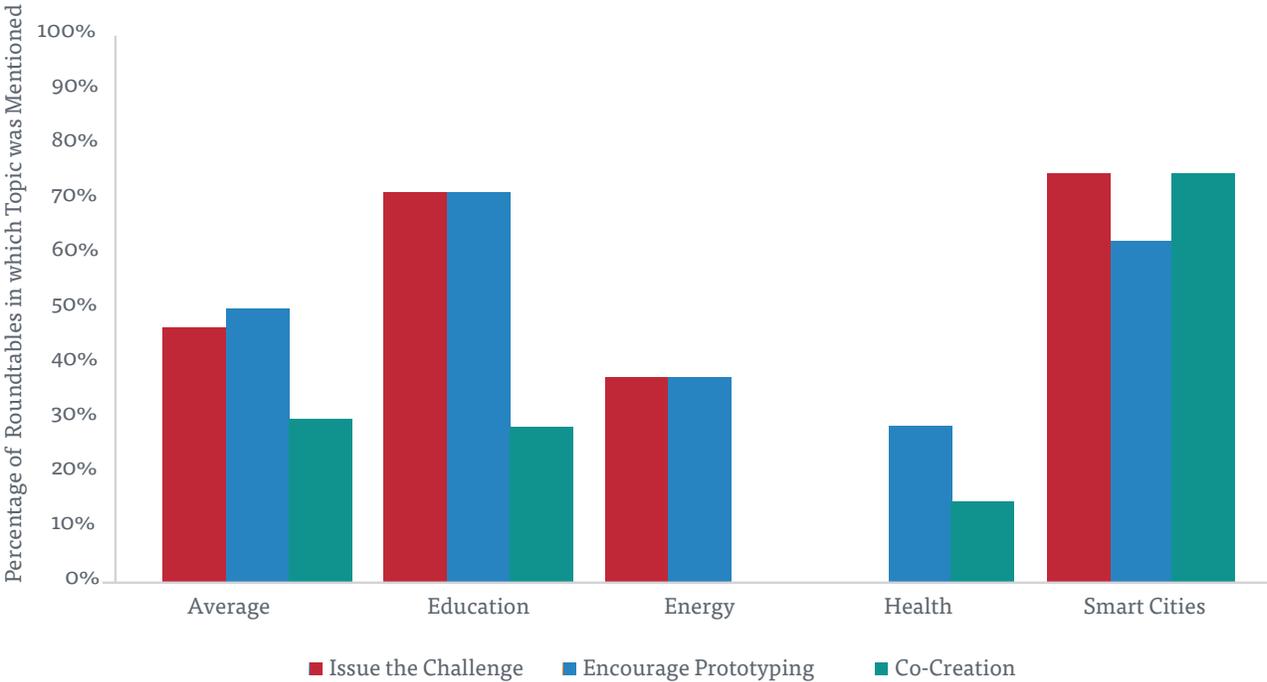


Figure 21. Build the Market: Subcategories

Issue the Challenge

Issue the Challenge means that civic institutions should make collective calls to the community to devise innovative solutions to existing problems that the organization is facing. This can entail requests for proposals (RFPs) or prize competitions in which civic institutions explain their existing pain points and ask others to come up with solutions. This is a very different approach from traditional procurement (see section on “The Procurement Process” within Challenge 2: The Bureaucratic Maze). It makes room for genuine innovation, forcing the business community to think outside the box to devise a solution tailored to meet the institution’s need. By creating a marketplace for new solutions, institutions can open the door to startups in the civic sector.

Example: Citymart is a startup that works with municipal governments across the world to issue challenges centered around existing urban problems. Previous initiatives include calls to improve pedestrian safety at road crossings, to create off-grid power solutions in Lagos, Nigeria and to reduce bicycle thefts in Barcelona, Spain.²⁸

Example: The City of Austin hosted a Recycling Innovations Investment Forum in partnership with the Texas Entrepreneur Network. The forum brought together ten recycling companies to pitch their businesses to investors in order to encourage them to start, expand, or relocate their activities in Austin and help the Austin Resource Recovery meet its zero-waste goals.²⁹

“What we’ve found is, if we focus on articulating the problem and leaving the solution up to the respondent, we get a different quality of response; we get genuine innovation. We try and give people insight and let them come back to us with ideas. We need to go from a technical document to prose.”

Nigel Jacob, Mayor’s Office of New Urban Mechanics, Boston, Cities

“The request for innovation should be in the proposal. Rather than describing in 300 pages what the solution is, say, ‘Here’s a problem set, help us get to a solution.’”

Julien Vanier, MuniRent, Detroit, Cities

“There isn’t a formal, regular way the City says to a community of entrepreneurs, ‘These are our problems; we’re looking for solutions in these areas.’ That is something we potentially could do.”

Charles West, City of New Orleans, New Orleans, Cities

Encourage Prototyping

In order for civic institutions to build markets for new products, they need to create environments where these products can be tested. This requires safe spaces that encourage risk and experimentation. However, these efforts are naturally difficult due to the risk disincentives outlined above (Challenge 4). Across all industries, though, roundtable participants mentioned the importance of establishing lower-risk environments in which prototyping could be encouraged. Examples included after-school programs and summer programs in education, non-clinical time blocked off for doctors during some shifts in health, and laboratories and testing facilities in energy.

This prototyping should be competitively sourced, with randomized experimentation wherever possible. Because experimentation requires time and effort, there typically is a cost involved for the civic institution, which means it will need to actively implement such a program and provide sufficient resources.

Example: LEAP Innovations in Chicago is a research and development center that tests new educational technologies in order to determine effectiveness. It also facilitates the adoption of ideas that are proven to be successful.³⁰

Example: The Midwest Innovation Bridge is a new initiative established by the Clean Energy Trust in Illinois and NextEnergy in Michigan with funding from the U.S. Department of Energy. It provides entrepreneurs access to a robust set of testing and demonstration facilities where they can experiment with new energy technologies.³¹

Example: The Center for Care Innovations in San Francisco drives improvements in health care delivery for safety net groups by setting up laboratories in live clinical environments, working with providers to introduce different solutions, testing which products actually work, and disseminating their findings.³²

“We need a commitment to prototyping—a renewed common commitment to try stuff. It’s everyone buying in to say, ‘It might not work, but let’s try it and then figure out what went wrong.’”

Ramon Soto, City of Boston, Education

“Create those little environments where you give doctors protected time to not be with patients and work on innovation.”

Anonymous Roundtable Participant, Health

Co-Create New Tools

In addition to putting out calls to action and developing prototyping opportunities, civic institutions can work more closely with startups, creating partnerships to innovate together. This involves the institutions taking an active role to collaborate in the trenches with startups to develop new tools. Co-Creation can be an extension of the process of Issuing the Challenge, in which the civic institution develops a long-term, collaborative relationship with the winning startup in order to further develop the technology. It can also be a separate process in which civic institutions collaborate with startups in earlier stages before the product is complete, potentially even taking equity in the company to establish themselves as co-creators.

Example: A recent law passed by the State of Ohio allowed school districts to use student perception surveys as part of their teacher-evaluation criteria.³³ This created an opportunity for student survey companies such as Panorama Education in Boston to partner with school districts to design surveys tailored to meet their needs.³⁴

“A lot of our best stuff has come collaboratively from conversations with entrepreneurs who just have the seed of the idea.”

Chris Osgood, Mayor’s Office of New Urban Mechanics, Boston, Cities

“This is a new era that’s partnership driven. It’s not the old vendor model of doing business with the city. It’s getting into the trenches with the city, figuring things out for the city.”

Jase Wilson, Neighbor.ly, San Francisco, Cities

TURN THE LIGHTS ON

Theme was raised by participants during 63% of roundtables

Turn the Lights On refers to the idea that some of the most important work civic entrepreneurs do is in helping civic institutions understand their own operations. They do this by building and analyzing datasets that shine a light on current performance and potential areas for improvement. Civic institutions that commit to working with startups to “turn on the lights” can not only improve their own functioning, but also create opportunities for new, scalable businesses.

There are three ways in which institutions can do this:

- a. Collaborate to Effectively Release Open Data**
- b. Build the Data**
- c. Target Data Interoperability**

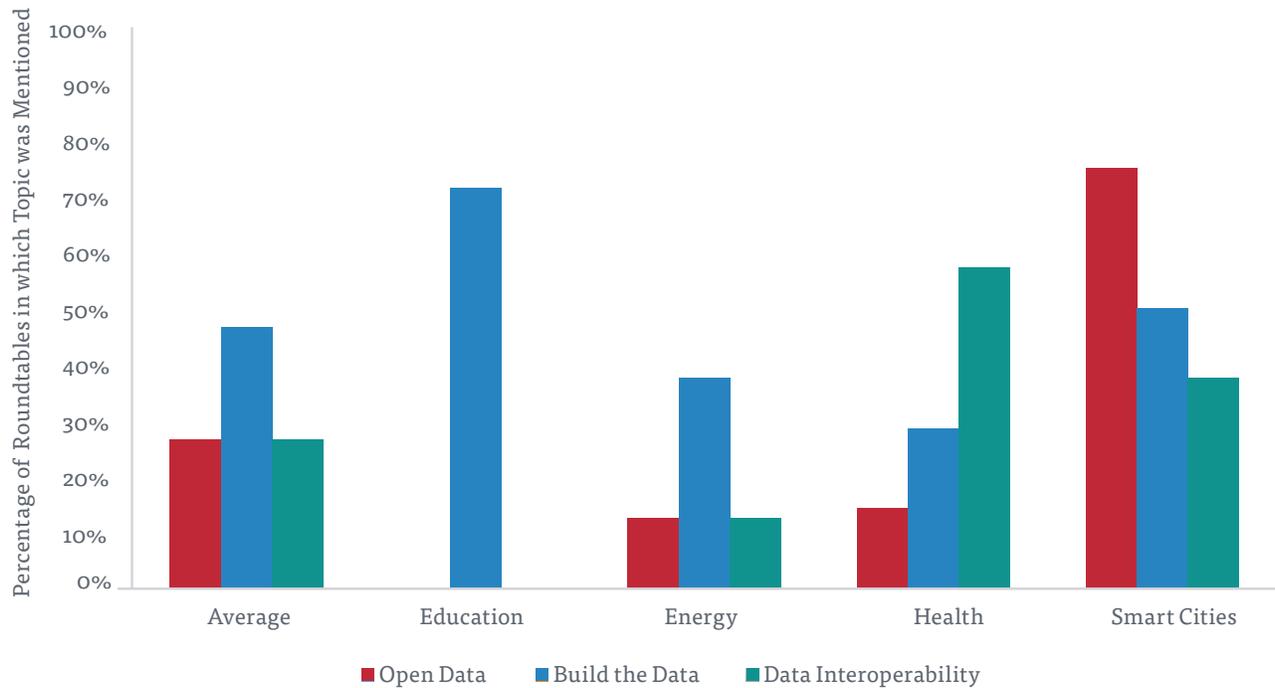


Figure 22. Turn the Lights on: Subcategories

Collaborate to Effectively Release Open Data

When available and where privacy issues are not a concern, civic institutions should release their existing datasets to the public and let the private sector find ways to use the information. However, it’s not enough for institutions to simply dump the data. Many open-data initiatives fail to achieve a meaningful impact because the owners do an inadequate job organizing, packaging, or releasing information in ways that can be useful to developers or other outside groups. Rather, civic institutions should work carefully with the local tech and data community to figure out whether data is useful and, if so, how best to release it.

Example: The Massachusetts Bay Transportation Authority (MBTA) in Boston has created a developer portal with access to its real-time Application Program Interfaces (APIs) with information about schedules, alerts, vehicle positions, and arrival-prediction data. This has led to the creation of several apps to help ease pain points for commuters.³⁵

“We’ve been releasing a ton of data for the startup community to mine. The idea that you could get information out in that way—that you could take information from the public sector and get it out to the public—was a radical change. But data is data. The question is can you mine it and turn it into information?”

Rahm Emanuel, Mayor, Chicago, Startup Economy

“For the City of New Orleans our data is still siloed. When we walked in, it was a mess. We try and build warehouses for the data and then release it to make it useful to the entrepreneurship community. But it takes government a long time to make data perfect. Less-than-perfect data, if open to the community, can still encourage innovation.”

*Allen Square, Former Chief Information Officer,
City of New Orleans, Startup Economy*

“We often start with ‘Here’s the data; now go and show what you can do with it.’ I think that starts from a constrained place. If you were to turn it around and have startups pitch what they would be able to do if they had certain datasets, that could drive people who own those datasets to partner together to provide them.”

Anonymous Roundtable Participant, Cities

Build the Data

Often, civic institutions don’t have high-quality data to release. Rather, their problem is lack of data: information gaps within the institution or industry that result in major inefficiencies. Examples include energy utilities without information about the efficiency of buildings on the grid, or city government without detailed information about urban traffic patterns. In these situations, civic institutions must actually build data where it does not currently exist in order to “Turn the Lights On.” Institutions can do this by partnering with startups or other entities to create datasets and new analytical tools, which can then either be used internally or be released to the public. For organizations that consider themselves to be “data-starved” in this way, finding startups to work with to gather information can be a significant boon.

Example: Pecan Street is a nonprofit research and development initiative in Austin founded by the City of Austin, Austin Energy (the local utility), the University of Texas, the Austin Chamber of Commerce, and others to create and collect data regarding energy and water consumption. Since its inception in 2008, Pecan Street has provided unprecedented amounts of information regarding energy use, helping to catalyze the local cleantech community.³⁶

Example: The City of New Orleans partnered with Code for America to create a searchable mapping tool to track blight across neighborhoods.³⁷ The success of this initiative led to its creators to launch a new city startup, Civic Insight.³⁸

Example: Kininvolved, a New York edtech startup, helps schools collect and monitor information about student attendance.³⁹

“We work with analytics to help schools turn the lights on and see what’s happening in their institutions.”

Mark Milliron, Civitas Learning, Austin, Education

“Schools really do want the tools to see data to act on the changes they needed to implement, things like technology to look at trends in attendance. They don’t have access to those tools.”

Miriam Altman, Kininvolved, New York, Education

“There’s a huge opportunity space for data collection and urban analytics. Some cities have a lot of data; some don’t.”

Ryan Chin, MIT Media Lab, Boston, Cities

Target Data Interoperability

Sometimes the main issue that civic institutions and startups face in regard to data is not difficulty with releasing or building data. Rather, they face the challenge of smooth data flow between different software platforms. In this situation, civic institutions can “Turn the Lights On” by working to break down interoperability barriers and standardize data across organizations, in order to improve the exchange of information and enhance the ubiquity of new technology solutions. Examples include digitizing information that is still maintained in paper records and creating standardized Application Program Interfaces (APIs) that allow different software systems to integrate more effectively.

“We need to build a large interoperability platform to make sure companies don’t become isolated but rather integrated solutions in overall care management.”

Anonymous Roundtable Participant, Health

“One issue is that a lot of data doesn’t flow across agencies or city lines; we have to work on the plumbing to make that easier.”

Cathy Wissink, Microsoft, Boston, Cities

“We could use some help from entrepreneurs to create infrastructure and to standardize APIs, helping open up an ecosystem in Health IT that would be hugely beneficial.”

Dr. Adam Landman, Brigham and Women’s Hospital, Boston, Health

UNLOCK HIDDEN CAPITAL

Theme was raised by participants during 73% of roundtables

Unlock Hidden Capital refers to the idea that cities already have the wealth they need to support a critical mass of homegrown civic startups; the problem is just that this wealth is not currently being channeled into entrepreneurial activities. Throughout our listening tour, participants bemoaned the lack of startup capital as a major issue in their ecosystem,

and they referred to the Bay Area as the one place where funding was truly available in sufficient quantities. However, this phenomenon is not due to the fact that the Bay Area is significantly wealthier than the rest of the country. Rather, it simply has done a better job creating wealth through entrepreneurship and recycling that wealth back into the ecosystem, steadily expanding the available capital pool. Unlocking Hidden Capital means igniting this virtuous cycle in other cities and industries by better channeling existing wealth assets toward startup activity, particularly in the civic sector.

During our roundtables, we regularly heard local ecosystems explain that they were waiting for a major exit (an IPO or acquisition) that could generate significant funds, which could then be reinvested in the community, creating the same recycling of wealth phenomenon present in the Bay Area. While we do believe that more such exits will occur and that they will become major catalysts for the community, actors within the ecosystem can do more to build their capital base in the meantime by bringing existing wealthy investors “off the sidelines” and encouraging them to support local startup growth.

For more on this concept, see “Technical Appendix: Unlocked Capital Ratios.”

“There’s a self-reinforcing cycle here of money from successful investments being funneled back into the system.”

Jon Lieber, ThumbTack, San Francisco, Startup Economy

“We’d love to see more capital come off the sidelines.”

Amy Francetic, Clean Energy Trust, Chicago, Energy

There are three components to Unlocking Hidden Capital as it relates to civic entrepreneurship:

- a. Unlock General-Wealth Capital**
- b. Unlock Industry-Educated Capital**
- c. Unlock Philanthropic Capital**

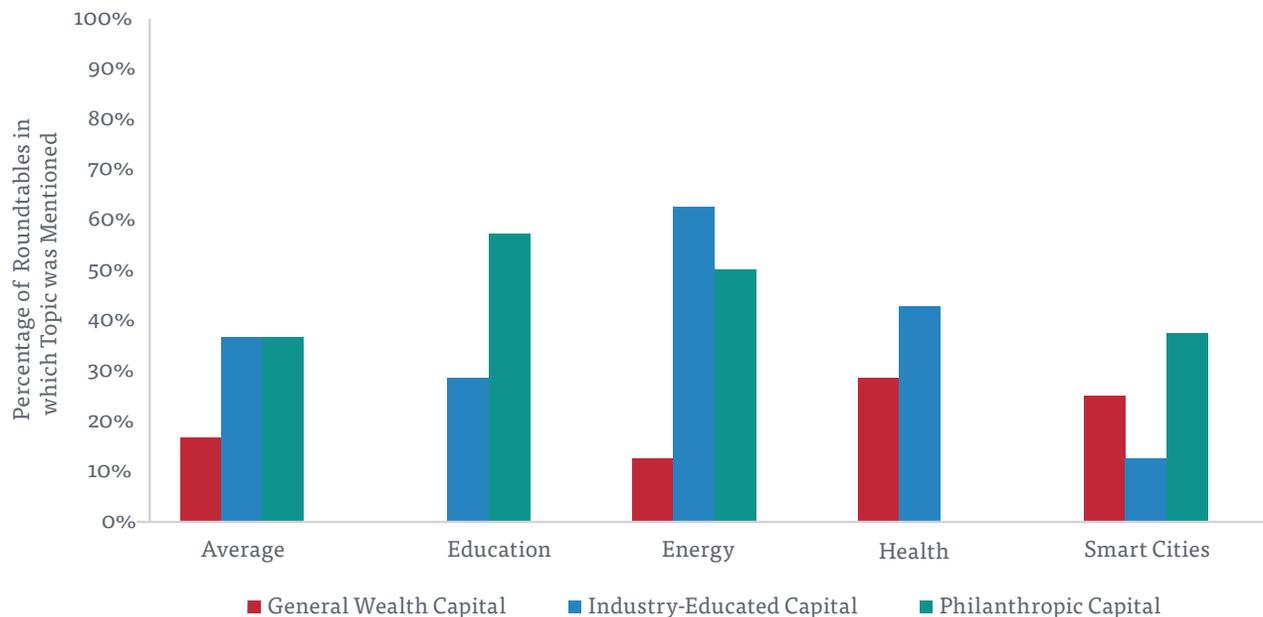


Figure 23. Unlock Hidden Capital: Subcategories

Unlock General-Wealth Capital

Unlocking General-Wealth Capital is about educating wealthy individuals in the community about startups and connecting them with resources that can help them learn to invest in this sector. In many cities, potential investors are focused on the traditional industries in which they originally made their money, and they have little to no connection with tech startups. Many of these individuals are not used to taking equity in small companies and are more comfortable purchasing hard assets or stocks.

However, throughout our listening tour we heard about local intermediary groups such as angel networks or new venture capital groups that have had success in approaching these individuals, raising funds from them, and leveraging their support to grow startups and drive new local business innovation. Through education led by these types of intermediaries, investors can become more comfortable with the risks involved, turning “dumb money” into “smart money.”

Example: K Street Capital is a local angel investor group in Washington, D.C. that bridges the divide between tech entrepreneurs and wealthy investors in the city who have made their money in government contracting, law, and real estate.⁴⁰

Example: The NO/LA Angel Network started just in 2014 but has already recruited 90 individuals from a wide variety of backgrounds to invest in New Orleans startups, making it one of the fastest-growing investor groups in the country.⁴¹

“The cash is here, it’s just about connecting it in the right way. Investment in the Valley is about wealth creation; in Chicago it’s about wealth management.”

Terry Howerton , TechNexus, Chicago, Startup Economy

“It was a bunch of idle wealth. Many people didn’t know what to do when it came to investing, so they needed a leader to teach them.”

Aaron Mischenich, New Orleans BioInnovation Center, New Orleans, Startup Economy

“Dumb money is now becoming smart money, and it’s making a huge difference.”

Richard Babb, The Louisiana Fund, New Orleans, Startup Economy

Unlock Industry-Educated Capital

As outlined in the Challenges section above, civic entrepreneurship faces a unique set of difficulties that make it different from traditional tech entrepreneurship. As a result, many generalist startup investors are not comfortable putting money into civic tech startups because they worry about regulations, long sales cycles, and the need to establish pilot projects. However, just as angel groups can help educate wealthy individuals about startup investing in general, our listening tour gave insights into the possibilities for industry-specific groups to educate startup investors about their sector as well.

By establishing intermediary groups that can explain the nuances of the education, energy, health, or city industries, local communities can establish larger capital bases that allow more startups within their ecosystem to grow. As explained in Solution 1: Establish Network Connectivity, the key actors here are the intermediaries: the people with some connection to both the industry and the investor community who can translate between the two cultures and help to bridge gaps.

Example: The Clean Energy Venture Group in Boston provides capital and mentorship to seed-stage energy startups in the region. It also serves as a point of reference for investors unfamiliar with the energy space to learn about how to invest in the sector.⁴²

Example: MATTER in Chicago is a coworking facility that brings together entrepreneurs and industry leaders to collaborate on innovative projects in the healthcare field. MATTER has also involved investors in this process, connecting them with the network and educating them about how to approach investment in the healthcare industry.⁴³

“We do a lot of work educating investors about our sector, and about what a public benefit corporation is.”

Sammie Rayner, HandUp, San Francisco, Cities

“We need someone who can educate new investors. There’s this gap between people who care about the problem and have capital and actually mobilizing them to deploy that capital. There is an opportunity there.”

Ali Adler, New England Clean Energy Council, Boston, Energy

“The slow learners in the ecosystem are the investor side. They have taken some time to learn that education is not a slow-moving industry.”

Jean Hammond, LearnLaunch, Boston, Education

Unlock Philanthropic Capital

Aside from the startup investment community, civic entrepreneurs have another pool of wealth they can access to expand their capital base: philanthropic groups. There are many foundations, nonprofits, and other organizations already active in the fields of education, energy, health, and cities. However, traditional separation between the nonprofit and business communities has limited their interaction. Frequently during our roundtables, we heard participants mention the success they have had or the efforts they are making to tap philanthropic sources of capital.

Example: PRIME Coalition in Boston is a nonprofit organization that mobilizes philanthropic capital to invest in early-stage cleantech energy startups through Program-Related Investments (PRIs), helping to fill a current funding gap in the market known as the “Valley of Death.”⁴⁴

Example: The Michael and Susan Dell Foundation and the Bill and Melinda Gates Foundations have become active in the edtech space. Both foundations provided grants to establish a seed fund at NewSchools Venture Fund, and the Dell Foundation made a direct investment through a PRI in MasteryConnect, while the Gates Foundation did the same for Bloomboard.⁴⁵

“Everyone who has invested so far has been very focused on the social mission, because it’s risky and is still early. It’s people interested in policy, community improvement and collective action.”

Miriam Altman, Kininvolved, New York, Education

“In Detroit one thing I wasn’t used to was the foundation community. In San Francisco, it was all seed capital, but in Detroit it’s a large foundation community that you can think about approaching for social entrepreneurship. There’s a lot of philanthropic funding that’s its own political world.”

Jerry Paffendorf, Loveland Technologies, Detroit, Cities

“What you hear is ‘There’s not enough money.’ But there are a lot of people sitting on portfolios with social impact funds that aren’t targeted toward high priority solutions. How do we get it so entrepreneurs that really need funding can access all those people who so want them to succeed?”

Debra Rowe, Oakland Community College, Detroit, Energy

Industry Findings

Section VI (“Listening Tour Insights”) explains the roundtable themes that emerged as parallels across the civic sector, focusing on the principal opportunities, challenges, and solutions common to civic entrepreneurship.

Our industry findings focus on how often these themes emerged during the roundtable discussions in each particular industry. The following graphs highlight the frequency with which themes emerged in the industry compared to the overall average.

The graphs reveal both the **similarities** across industries—reinforcing our emphasis on the universal themes of the civic sector—as well as the unique **differences**. Our key findings explain the most prominent differences using information from the roundtable discussions.

The purpose of this section is not to make definitive claims about the nature of any of these industries, but rather to create a starting point for fitting them into the broader concept of the civic sector entrepreneurship. We believe that education, energy, health, and cities can only be fully understood by analyzing what they have in common and what sets them apart.

For context, the opportunities, challenges and solutions explained in Section VI are as follows:

Opportunities: Factors Creating the Potential for Increased Civic Entrepreneurship

1. **The Asset Base:** Cities are learning how to tap into existing resources to grow their startup communities
2. **The Evolving Civic Sector:** Changing business models are reinventing civic institutions and creating new openings for entrepreneurs
3. **The Disruptive Urgency:** Concerns about industry disruption have increased the willingness of civic institutions and corporations to work with upstart companies
4. **The Citizen Engagement Factor:** Civic institutions are looking for new ways to directly connect with citizens to improve the quality of their services

5. **The Dual Paths: Partner or Circumvent:** Startups increasingly have the option to work with established organizations in entrenched industries or to go around them if they resist change

Challenges—Barriers to Increasing Civic Entrepreneurship

1. **The Alignment Gap:** Even with the resources in place, actors within an ecosystem often do not collaborate effectively
2. **The Bureaucratic Maze:** When engaging with civic institutions, entrepreneurs must navigate a complicated world of relationships in order to gain traction
3. **The Credibility Dilemma:** Startups face a chicken-or-the-egg problem of getting initial customers to pilot technology when efficacy is still unproven
4. **The Risk Disincentives:** Civic institution administrators and employees face strong motivations to avoid taking risks that could endanger their organizations or careers
5. **The Noise Factor:** The explosion of startup activity has made it more difficult for civic institutions to distinguish the good from the bad, creating “startup fatigue”

Solutions—Guiding Principles for Overcoming Barriers to Civic Entrepreneurship

1. **Establish System Connectivity:** Connect the dots between ecosystem actors to address The Alignment Gap and create a collaborative community
2. **Embrace the Friction:** Allow conflict and competition to flourish in the ecosystem as a necessary complement to collaboration, in order to create more effective and dynamic solutions
3. **Build the Market:** Open opportunities for startups to propose and create new solutions to existing needs of civic institutions
4. **Turn the Lights On:** Partner with startups to construct datasets that and create information that reveals what already is happening within civic institutions
5. **Unlock Hidden Capital:** Build mechanisms to better channel communities’ existing wealth toward startup activity

Education

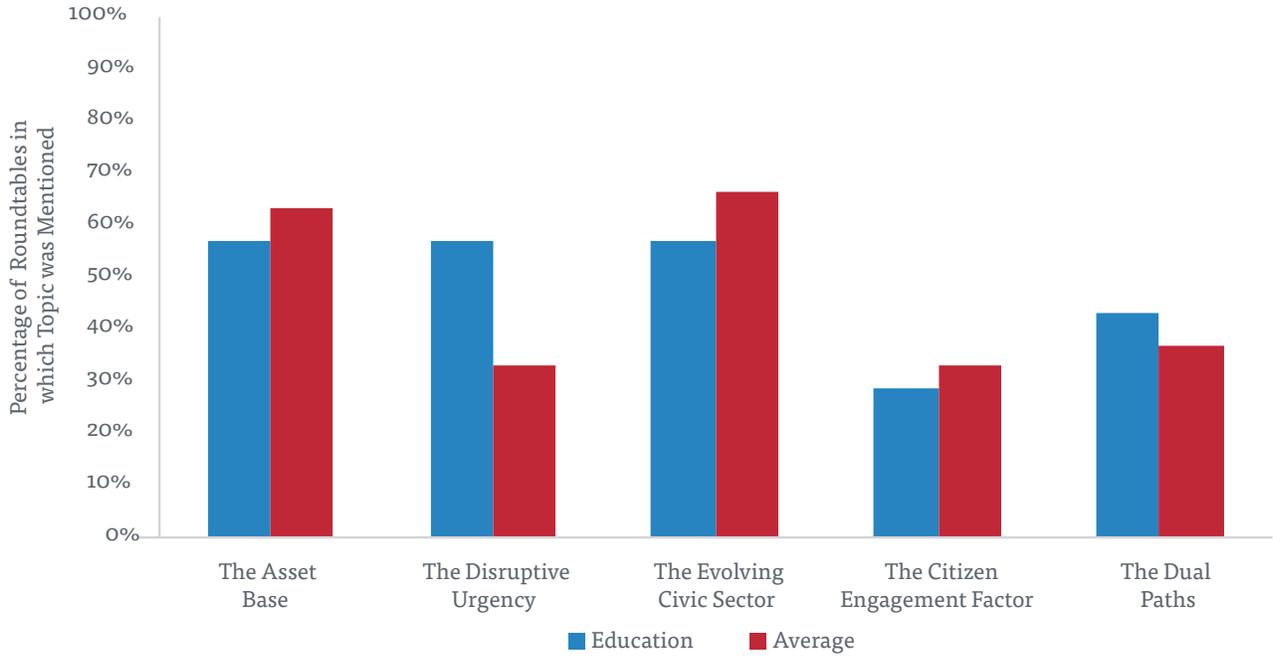


Figure 24. Education: Opportunities

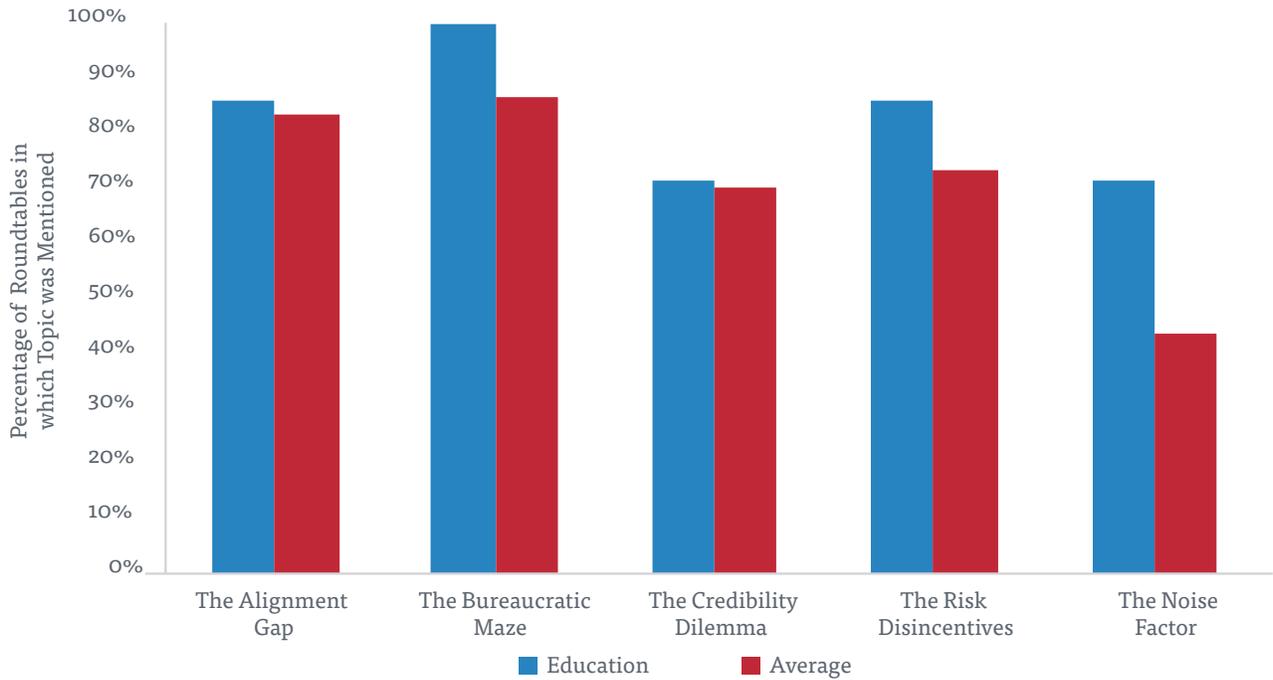


Figure 25. Education: Challenges

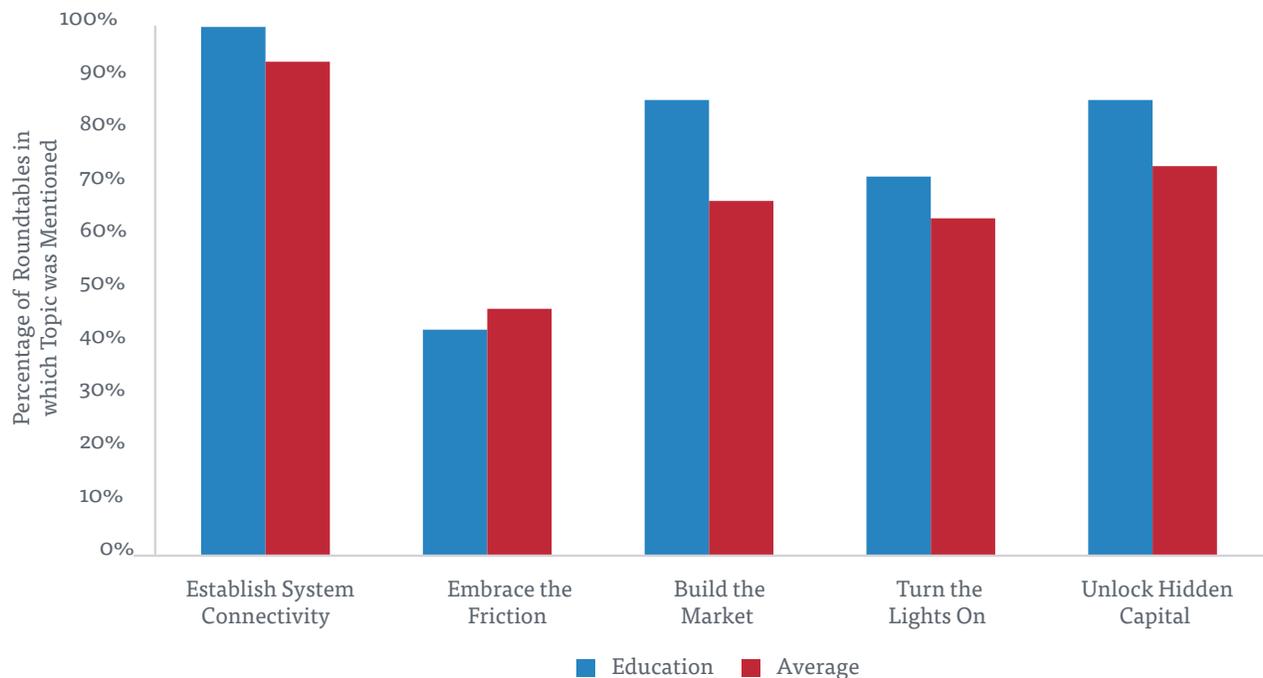


Figure 26. Education: Solutions

Key Findings

Opportunities:

The Disruptive Urgency: There was greater emphasis in the education industry on this opportunity. This reflects how the changing nature of universities and the growth of charter schools are creating more uncertainty in both higher education and K-12 than in other industries.

Challenges:

The Noise Factor: There was greater emphasis in the education industry on this challenge, reflecting the especially large number of new startups entering the Ed Tech space compared to other industries.

Solutions:

Build the Market: There was greater emphasis in the education industry about this solution. This was most pronounced for the idea of “Issuing the Challenge,” reflecting a strong viewpoint that schools should be more proactive about explaining their existing pain points to startups.

Energy

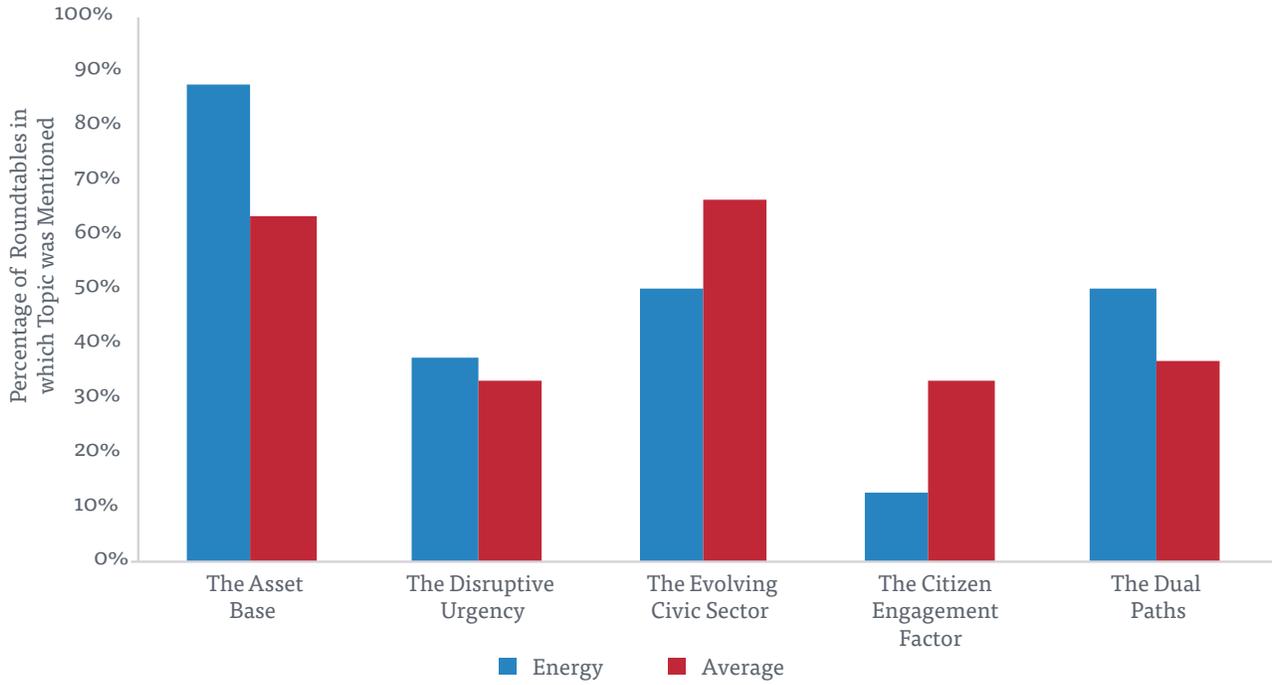


Figure 27. Energy: Opportunities

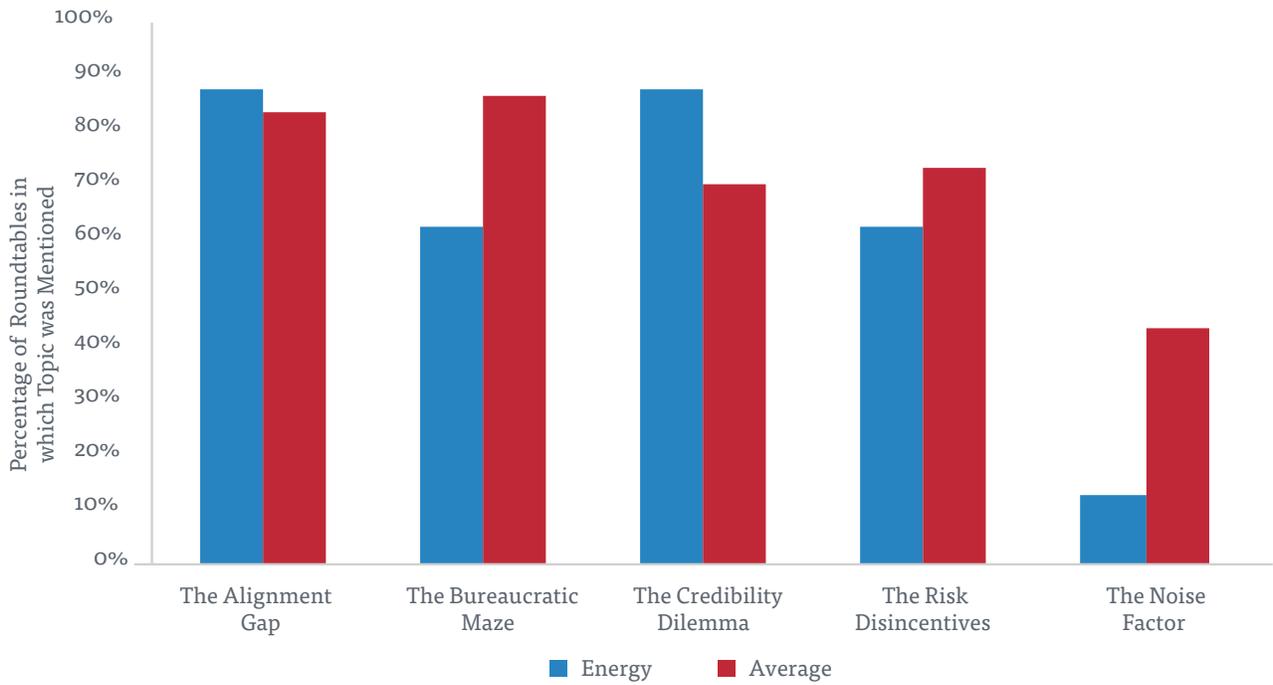


Figure 28. Energy: Challenges

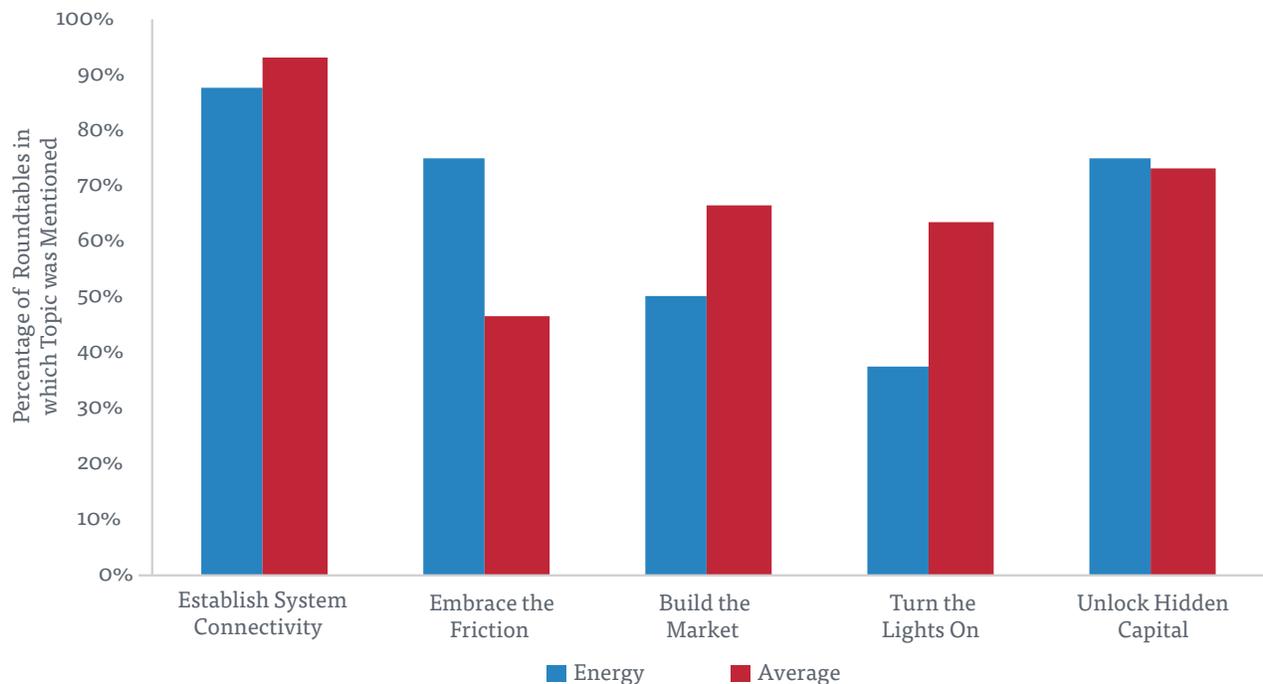


Figure 29. Energy: Solutions

Key Findings

Opportunities

The Asset Base: There was greater emphasis in the energy industry on this opportunity. This reflects the importance the energy industry in particular places on local assets such as engineering talent pools and relevant hardware production and testing facilities.

The Citizen Engagement Factor: There was less emphasis in the energy industry on this opportunity than in other industries. This reflects a sense that greater involvement from ratepayers is not perceived to be as critical for the future of the industry as is greater involvement from students and families in education, patients in health, or local residents in cities.

Challenges

The Bureaucratic Maze: There was less emphasis in the energy industry on this challenge. This reflects a belief that, while complicated, utilities are not as difficult to navigate as schools, hospitals, or government agencies.

The Noise Factor: There was less emphasis in the energy industry on this challenge, in particular because an overabundance of startups did not seem to be as much of an issue as it is in other industries.

Solutions

Embrace the Friction: There was greater emphasis in the energy industry on this solution, reflecting how the heightened tension between established utilities and upstart distributed generation providers and the desire for a policy framework that promotes competition.

Turn the Lights on: There was less emphasis in the energy industry on this solution, suggesting that the willingness of utilities to build and release datasets is not viewed as a significant missing element in the ecosystem.

Health

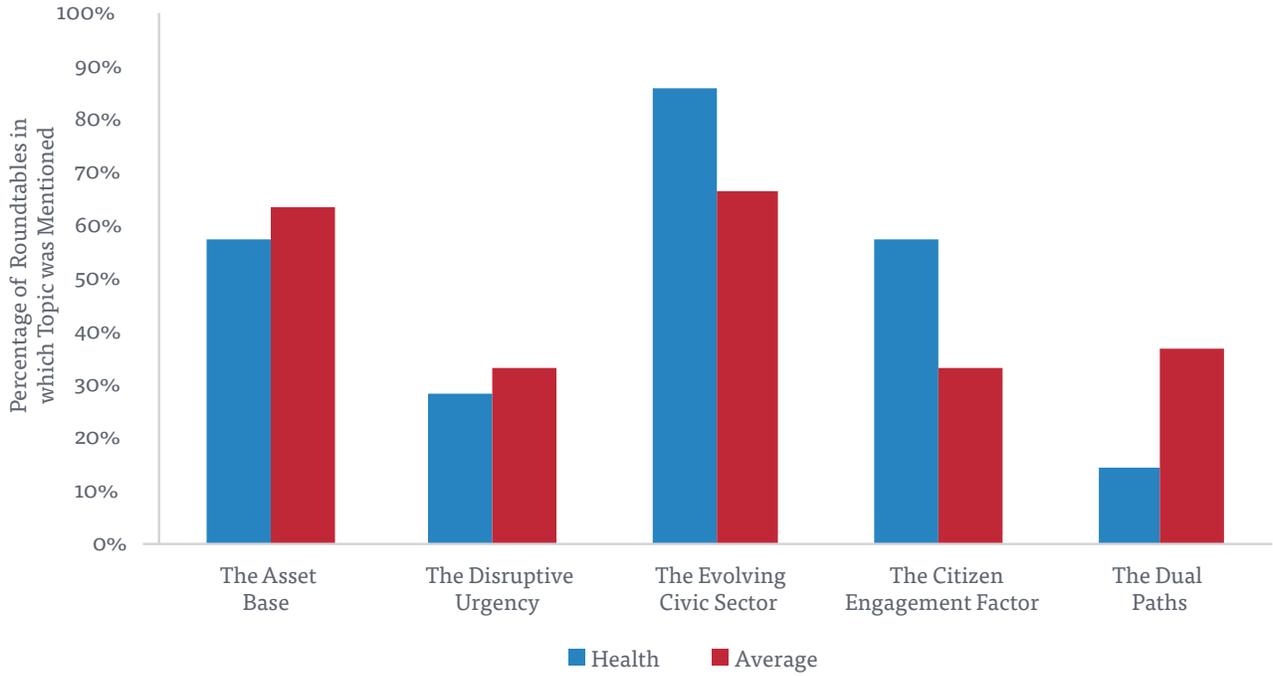


Figure 30. Health: Opportunities

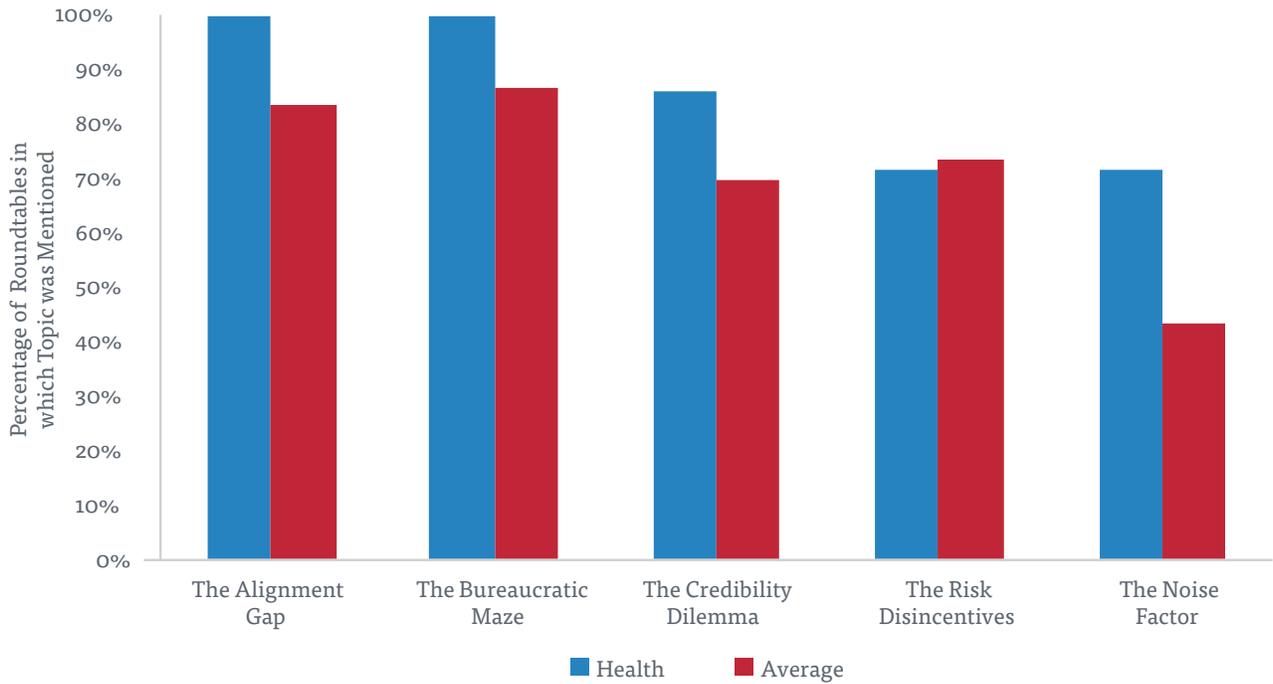


Figure 31. Health: Challenges

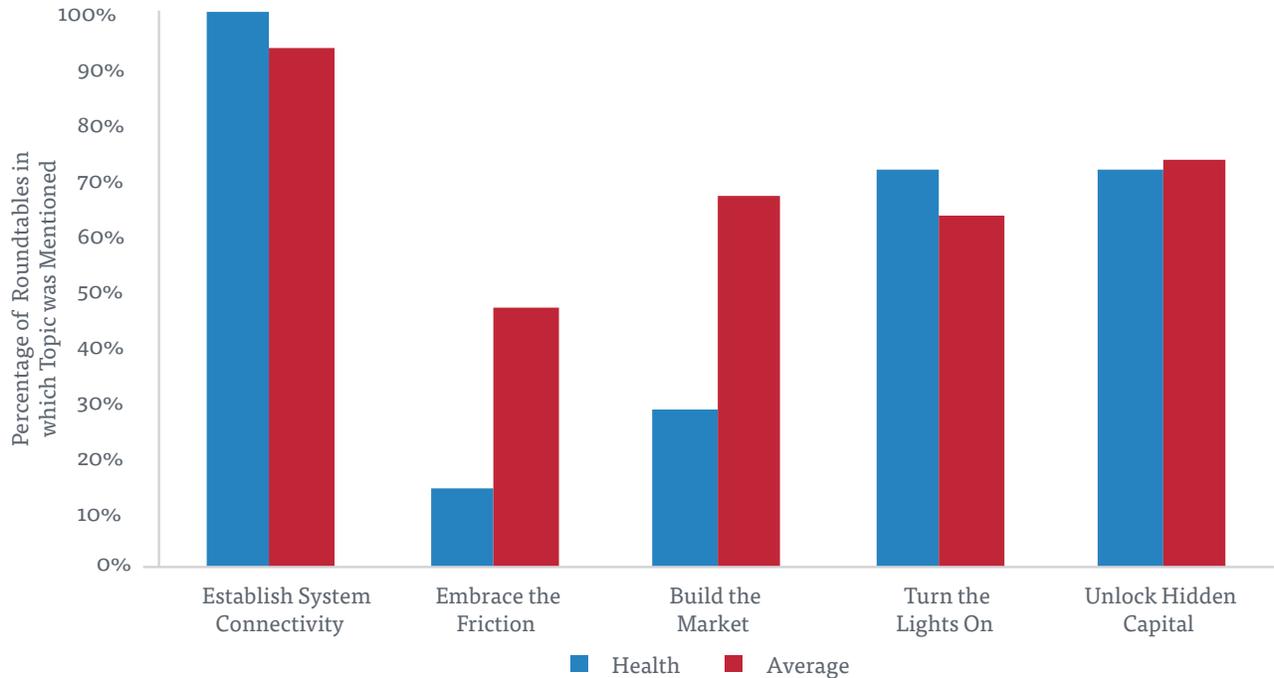


Figure 32. Health: Solutions

Key Findings

Opportunities

The Citizen Engagement Factor: There was greater emphasis in the health industry on this opportunity, reflecting health innovation’s major focus on encouraging patients to take more control over their own wellness outside of the doctor’s office.

The Dual Paths: Partner or Circumvent: There was less emphasis in the health industry on this opportunity. This reflected the general perspective from roundtable participants that innovative change must involve working with the existing health system rather than trying to force change from the outside.

Challenges

The Noise Factor: There was greater emphasis in the health industry on this challenge, reflecting the especially large number of new startups entering the health-tech space compared to other industries.

Solutions

Embrace the Friction: There was less emphasis in the health industry on this solution, suggesting that there is not as much clear, direct tension between established and upstart business interests compared to other industries.

Build the Market: There was less emphasis in the health industry on this solution, in particular because there was less discussion about providers and payers “Issuing the Challenge” by explaining existing pain points to startups.

Cities

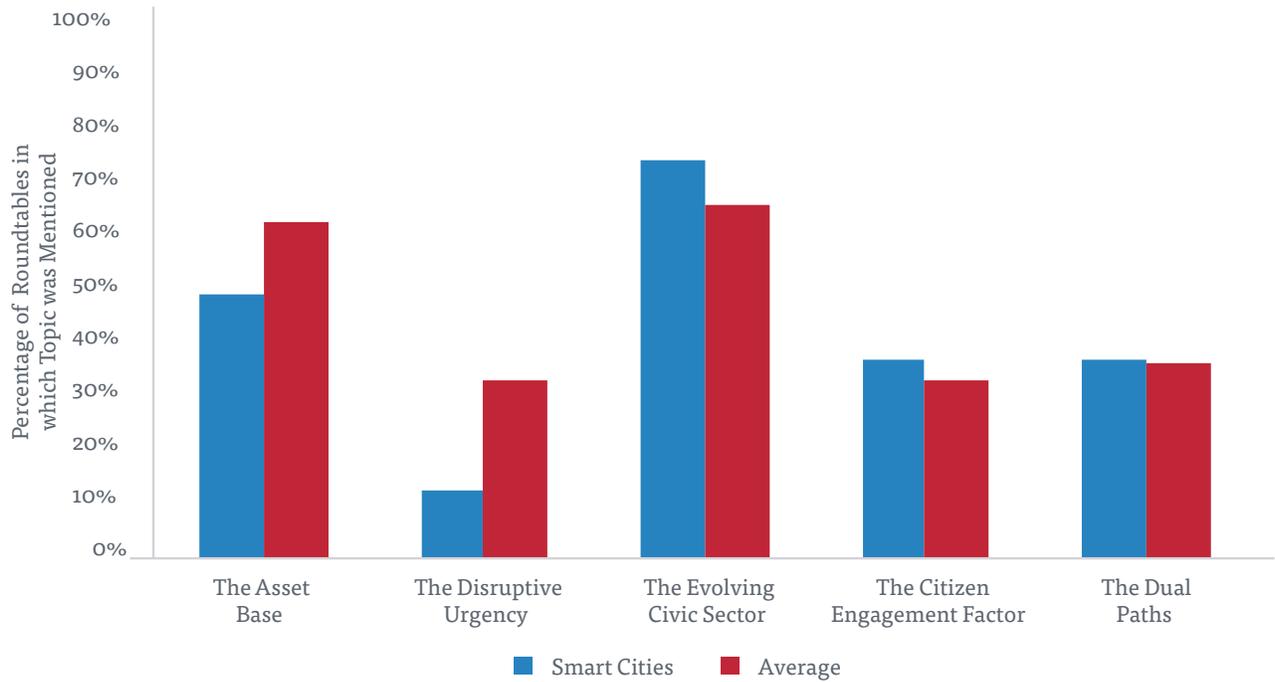


Figure 33. Cities: Opportunities

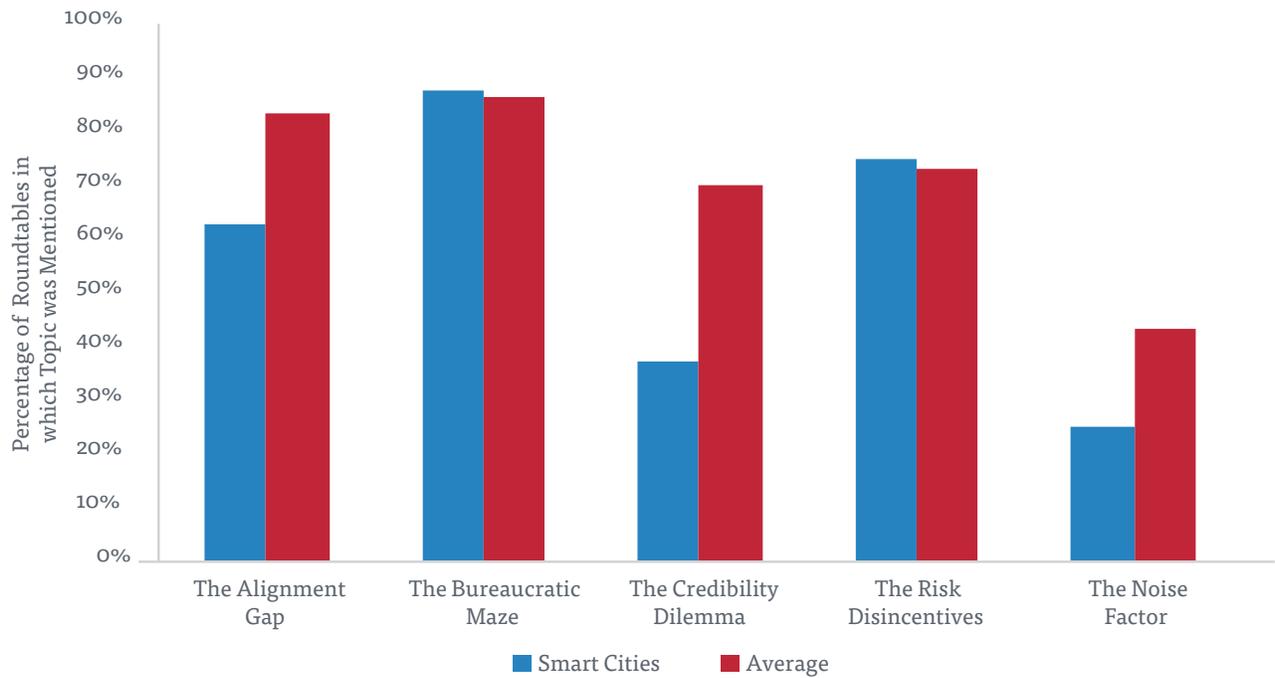


Figure 34. Cities: Challenges

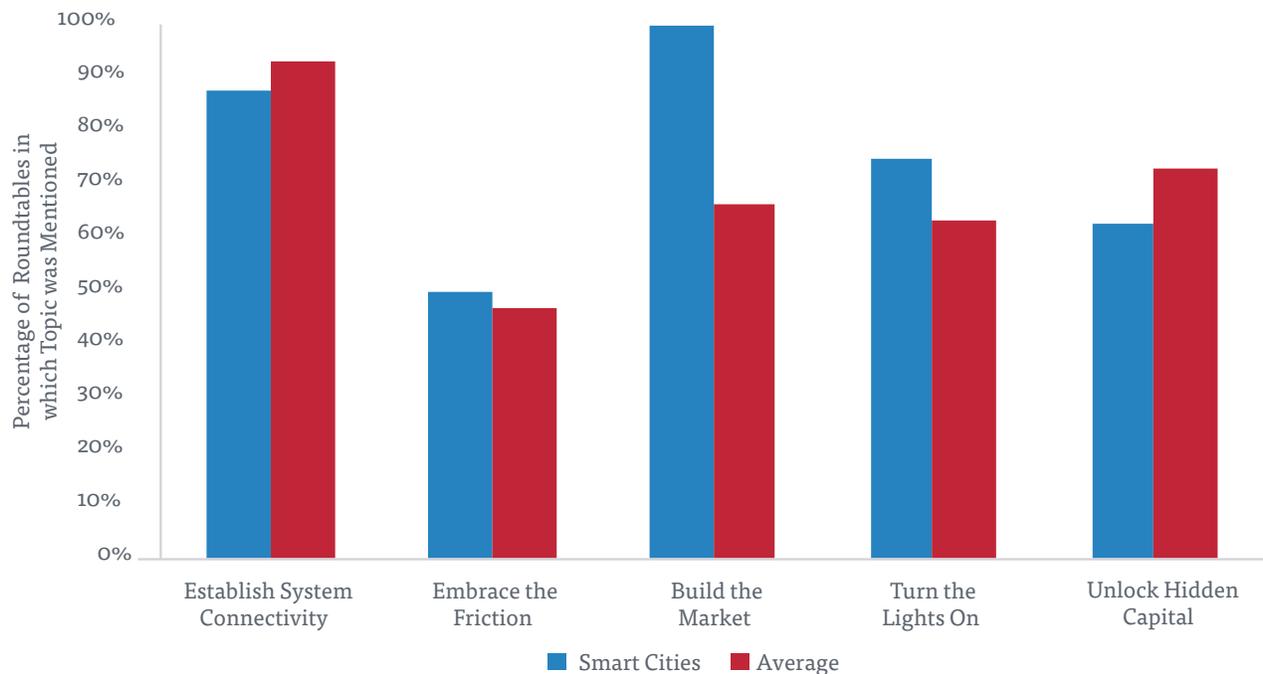


Figure 35. Cities: Solutions

Key Findings

Opportunities

The Disruptive Urgency: There was less emphasis in the cities industry on this opportunity. This reflects a viewpoint that municipal governments are more safely entrenched and do not perceive an imminent threat to their existence in the same way that other civic institutions such as utilities or universities may.

Challenges

The Credibility Dilemma: There was less emphasis in the cities industry on this challenge, suggesting that the lack of existing proof points and successful pilot projects has not been as problematic for startups in this space as it has in other industries. This may reflect the fact that more startups in the cities industry tend to build technologies that work around civic institutions by directly engaging customers.

Solutions

Build the Market: There was greater emphasis in the cities industry on this solution. This reflects a sense during the roundtable discussions that local governments' willingness to issue challenges, establish prototypes, and co-create new tools is a critical element to building the startup community in this space.

This research is meant to be a starting point for facilitating conversation about driving entrepreneurial innovation in the industries that matter most to our society's wellbeing. The scope of these issues is immense, and we by no means intend for this work to offer definitive conclusions about exact models to replicate. Rather, we believe that innovation is a constant process of sharing insights and perspectives to create communities of learning where our collective thinking can continually evolve. Our hope is that this work will contribute to such a shared dialogue and set the stage for further action to promote innovation that matters.

Appendix: List of Roundtable Participants

Austin, TX

Aaron Ali	CEO and Co-founder, MedtoMarket
Rick Anderson	Managing Director, PTV Health Care Capital
Lucia Athens	Chief Sustainability Officer, City of Austin
Sabina Bharwani	Director for Educational Technology, Teach for America
Jose Beceiro	Director of Strategic Corporate Partnerships, Texas State University
Bart Bohn	Director, IT/Wireless Portfolio, Austin Technology Incubator
Chad Cagnolatti	Clinical Solutions Practice Leader, Dell Global Consulting Services
Kevin Callahan	COO, Maggie Louise Confections
Keith Cole	CEO, Water Lens
Sean Duffy	ELA Assessment Specialist, Pearson
Hugh Forrest	Director, SxSW
Blake Garrett	Founder and CEO, Aceable
Bob Gedert	Director, Austin Resource Recovery
Lori Ham	Director Education Sales, Microsoft
Julie Huls	President and CEO, Austin Tech Council
Mitch Jacobson	Co-Director, Clean Energy Portfolio, Austin Technology Incubator
Caroline Joiner	Executive Director Texas and Southeast, TechNet
Ryan Joy	Startup and Developer Evangelist, Microsoft
Laura Kelly	Director of Quality Services, Texas Charter Schools Association
Kevin Koym	Founding Partner, Tech Ranch
Barry McConachie	CEO, Incenergy
Brewster McCracken	President and CEO, Pecan Street
Meg Merritt	Executive Director of Operations, Ridescout
Celite Milbrandt	Chief Product Officer, Ridescout
Mike Millard	Director of Innovation, Seton Healthcare
Mark Milliron	Co-founder and Chief Learning Officer, Civitas Learning
Raamel Mitchell	Public Affairs and Citizenship Director, Microsoft

Ripal Nathuji	Founder and CEO, StemED Labs
Erik Norwood	President, Curb
Andy O'Hara	Founder and CEO, Chiron Health
Ron Reed	Executive Producer, SxSW Edu
Kristin Rhodes	General Manager US Education West Region, Microsoft
Kyle Samani	CEO and Co-Founder, Pristine
Michele Skelding	Senior Vice President Global Technology and Innovation, Austin Chamber of Commerce
Dan Stanzione	Executive Director, Texas Advanced Computing Center
Cindy WalkerPeach	Director, BioScience Portfolio, Austin Technology Incubator
Greg Weaver	Executive Vice President, Catellus
Jack Westerlund	Regional Sales Director, Microsoft
Miles Whitten	Director of Commercial Origination, Circular Energy
Mark Williams	Board of Trustees, Austin Community College
Michael Williams	Partner Sales Manager, Microsoft

Boston, MA

Alexandra Adler	Senior Director for Innovation and Entrepreneurship, New England Clean Energy Council
Gavin Bauman	Technical Evangelist, Microsoft
Carl Berke	Co-Founder and Managing Director, Mass Medical Angels
Naomi Berlin	Relationship Manager, CIC
Robby Bitting	Director of Marketing, MassChallenge
Michael Boloudakis	Co-Founder, Kinems
Eveline Buchatskiy	Director, Tech Stars
Catherine Burdt	Senior Strategy Manager, Pearson
Cameron Carey	Advisor, TechSandBox
Bobbie Carlton	Founder, Innovation Nights
Ryan Chin	Managing Director, City Science, MIT Media Lab
Rafaella Colella	Founder, Cannonball
Kristen Craft	Director of Partnerships, Wistia
Martin Flusberg	CEO, PowerHouse Dynamics
Joseph Frassica	Chief Medical Informatics Officer, Philips Healthcare

Vinay Gidwaney	Co-Founder, Maxwell Health
Daniel Hadley	Chief of Staff, City of Somerville
Sarah Haig	Co-Founder and COO, Silverside Detectors
Jean Hammond	Partner, LearnLaunch
Ben Hemani	Associate, Braemar Energy Ventures
Chris Horne	Planner, Sasaki Associates
Nigel Jacob	Co-Chair, Mayor's Office of New Urban Mechanics
Yoel Kelman	Co-Founder, Ecovent
Adam Landman	CMIO Health Innovation and Integration, Brigham and Women's Hospital
Alexandra Lee	Executive Director, Kendall Square Association
Kin Lo	Founder and CEO, Kaymbu
Anne Lusk	Research Scientist, Harvard School of Public Health
Dhiraj Malkani	Partner, RockPort Capital
Pallavi Menon	Program Manager, Healthbox
Galen Moore	Editor in Chief, Streetwise Media
Sarah Morin	Assistant Director of Sales, CIC
Linda Noonan	Executive Director, Massachusetts Business Alliance for Education
Leah O'Donnell	Managing Director, Zaffre Investments
Chris Osgood	Co-Chair, Mayor's Office of New Urban Mechanics
Matthew Petersen	Senior Managing Director of Innovation, Teach for America
Gillian Pressman	Greater Boston Site Director, Generation Citizen
Brian Rainville	Educator Engagement, Panorama Education
Steve Ramsay	Director of Startup, Developer and Student Evangelism, Microsoft
Emily Reichert	CEO, Greentown Labs
Gilad Rosenzweig	Founder and Executive Director, Smarter in the City
Hakan Satiroglu	Partner, LearnLaunch
Tom Scaramellino	President and CEO, Essess
Ramon Soto	Special Advisor, City of Boston
Aimee Sprung	Civic Engagement Officer, Microsoft
Beth Stoner	Digital Product Manager, Pearson
Dominick Tribone	Special Assistant for Strategic Initiatives, MBTA

Matt Tucker	Platform Manager, Digital Initiative HBS
Max Tuefferd	Director of Professional Development, Massachusetts Charter Public School Association
Obinna Ukwuani	Co-Founder and CEO, Zwayo
Nikita Virani	CEO and Co-Founder of Wellapets, Lifeguard Games, Inc.
Paris Wallace	CEO, Ovuline
Cathy Wissink	Senior Director for Technology and Civic Engagement, Microsoft
Richard Wolfe	Chief, Department of Emergency Medicine, Beth Israel Deaconess Medical Center

Chicago, IL

Ateet Adhikari	Director, Healthbox
Shradha Agrawal	Co-Founder and President, Context Media
Ken Bahk	Chief Strategy Officer, Nanosphere
Sally Beatty	President, Symposium Group
Lyle Berkowitz	Director, Szollosi Healthcare Innovation Program, Northwestern Memorial Healthcare
Brenna Berman	Commissioner and CIO, Chicago Department of Innovation & Tech
Gerhard Boiciuc	Vice President of Business Development, ParkNav
Steven Collens	CEO, MATTER
Holly Copeland	Deputy Director, Office of Entrepreneurship & Innovation, IL Dept. of Commerce
Sarah Doherty	Co-Founder and CTO, Telehealth Robotics
Alan Drimmer	Chief Academic Officer, The Apollo Education Group
Jeff Dunn	Senior Director, DeVry Education Group
Derek Eder	Founder and Partner, DataMade
Rahm Emanuel	Mayor of the City of Chicago
John Flavnick	Executive Director, Chicago Innovation Exchange
Christopher Flint	Founder and Chief Creative Officer, Infiniteach
Amy Francetic	CEO, Clean Energy Trust
Jennifer Garson	Tech to Market Analyst, U.S. Department of Energy
Shelley Grach	Director of Civic Engagement, Microsoft
Chaula Gupta	Vice President, Program Investments, Chicago Public Education Fund

Bryan Halloy	Associate, Energy Foundry
Mark Harris	President and CEO, Illinois Science & Technology Coalition
Adam Hecktman	Director of Technology and Civic Innovation for Chicago, Microsoft
Elizabeth Hibner	Product Management Director, CAEL
Ryan Hoch	Co-Founder, Overgrad
Terry Howerton	CEO, TechNexus
Amy Huang	Director of NextGen Expansion, LEAP
Gregory Jaros	Founder and CEO, Spare to Share
Madeleine Klein	Senior VP of Policy and Strategy, SoCore Energy
Devin Lavigne	Founder, sMap
Haibo Lu	Founder and CDO, CancerIQ
Jeff Malehorn	President and CEO, World Business Chicago
David Miller	President and CEO, iBio
Theresa E. Mintle	President and CEO, Chicagoland Chamber
Philip Nevels	Executive Director, ChicagoNEXT
Christopher Nyren	Founder, Educated Ventures
Maura O'Hara	Executive Director, IL Venture Capital Association
Bill Pescatello	Partner, Lightbank
Dan Phillips	Vice President, Sandbox
David Pope	President Oak Park
Katie Olson	Senior Manager for Program Development, UI Labs
Abby Ross	Co-Founder and COO Think CERCA
David Scanlan	Founding Partner, BEAM Ventures
Simeon Schnapper	CEO, Youtopia
Peter Skosey	Executive Vice President, Metropolitan Planning Council
Jeff Soble	Fellow, American College of Cardiology
Mike Stacey	Founder, SmarterShade
Julia Stasch	President, MacArthur Foundation
Howard Tullman	CEO, 1871
Liz Wannemacher	Vice President, Strategic Marketing, Pearson
Brenda Darden Wilkerson	Senior Manager for Computer Science and IT Education, Chicago Public Schools

Detroit, MI

David Anderson	Co-Founder, Bamboo Detroit
Sandy Baruah	President and CEO, Detroit Regional Chamber
Jeff Basch	Co-Founder, Accio Energy
Connie Chang	Managing Director, Fast Forward Medical Innovation, University of Michigan
Seema Chennamsetty	Senior Associate, Detroit Venture Partners
Ward Detwiler	Project Manager, Henry Ford Innovations
Hajj Flemings	Founder and CEO, Brand Camp University
Jill Ford	Special Advisor to the Mayor of Detroit, City of Detroit
Patti Glaza	Managing Director, Detroit Innovate
Joel Gurin	President and Founder, Center for Open Data Enterprise
Marc Hudson	Co-Founder, Rocket Fiber
Gregory Hurst	Blended Learning Specialist, Matchbook Learning
Elise Lancaster	State Director, Office of Senator Gary Peters
Bob Mattler	Board Member, U.S. Green Building Council, Detroit Chapter
Bill Mayer	Director, Ann Arbor SPARK
Will McDowell	Business Analyst, Detroit Labs
Eleanor Meegoda	Product Manager and Operations, Mason America
Seun Oyewole	Analyst, Detroit Innovate
Jerry Paffendorf	Co-Founder and CEO, Loveland Technologies
Zakary Pashak	Founder and President, Detroit Bikes
Jaime Patlevic	Audience Marketing Manager, Microsoft
Erica Raleigh	Director, Data Driven Detroit
Jean Redfield	President and CEO, NextEnergy
Jon Rimanelli	Founder and CEO, Detroit Aircraft
Paul Riser	Managing Director, TechTown Detroit
Debra Rowe	Faculty, Sustainable Energies and Behavioral Sciences, Oakland Community College
Mitch Rubin	Marketing Manager, BoostUp
Dan Scripps	President, Michigan Energy Innovation Business Council
Lisa Seymour	Program Manager, Techstars

Jared Stasik	Vice President, Detroit Venture Partners
Eric Stief	Director of Commercialization, Beaumont Research Institute
Chris Thomas	Founder and Partner, Fontinalis Partners
Julien Vanier	Co-Founder and CTO, MuniRent
Kristopher Wiljanen	Director of Business Development, Renaissance Venture Capital Fund

New Orleans, LA

Jay Altman	CEO, FirstLine Schools
Richard Babb	Partner and CFO, Louisiana Fund
Robin Barnes	Executive Vice President & COO, Greater New Orleans, Inc.
Taylor Beery	Principal, Beery Advisors, Southeast Louisiana Energy Initiative
Jerry Bologna	Executive Director, Jefferson Parish Economic Development Commission
Bill Bosch	CEO & Co-Founder, Be Well Nutrition, Inc.
Will Bradshaw	President and Co-Founder, Green Coast Enterprises
Jeff Cantin	Owner/President, Solar Alternatives
R. Erich Caulfield	Founder and President, Caulfield Consulting Group
Andrea Chen	Executive Director, Propeller
John Christie	Executive Director, Technology Transfer, Tulane University
Troy Clark	Managing Partner, Golden Leaf Energy
Josh Densen	CEO and School Leader, Bricolage Academy
Patrick Dobard	Recovery Superintendent, Recovery School District
Melissa Ehlinger	Interim President and CEO, New Orleans Business Alliance
James Graham	Director of Federal Programs and Contracts, KIPP and Healthy School Food Collaborative
Bill Haines	Board Member, Meraux Foundation
Chris Haines	Treasurer, Meraux Foundation
Evan Judge	Director of Corporate Development, Federated Sample
Shafin Khan	Director of Technology Commercialization, New Orleans BioInnovation Center
Shuchi Khurana	COO, CFO and Co-Founder, BioCeptive
Andrew Kopplin	Deputy Mayor, City of New Orleans
Blaine Lindsey	CEO, Get Healthy
Sarah Mack	President and CEO, Tierra Resources

Erika McConduit	President and CEO, Urban League
Jen Medbery	Founder/CEO, Kickboard
Aaron Miscenich	Executive Director, New Orleans BioInnovation Center
Molly Oehmichen	Manager, ECG Management Consultants, Inc., Launch Pad
Tyler Ortega	Founder, ORA Estuaries
Allison Plyer	Executive Director, The Data Center
Patrick Reed	Director, LSU Health Sciences Center Office of Technology Management
Jennifer Roberts	Vice President, Education, Baptist Community Ministries
Earl Robinson	President, PowerMoves.NOLA
Liz Shephard	Chief Sustainability Officer, Life City
Allen Square	Chief Technology & Innovation Officer, PosiGen
Michael Stone	Co-CEO, New Schools for New Orleans
Cate Swinburn	Education Consultant, Educate Now!
Ellie Terry	Economic Policy Analysis Specialist, Federal Reserve Atlanta Branch
Vera Triplett	Founder, Noble Minds Institute for Whole Child Learning
Guangdi Wang	Professor of Chemistry, Xavier
Kurt Weigle	President and CEO, Downtown Development District
Charles West	Director of Innovation Delivery Team, City of New Orleans
Tim Williamson	Co-Founder and CEO, Idea Village
Matt Wisdom	CEO, TurboSquid
James Yockey	President, Oseberg

New York, NY

Miriam Altman	Co-Founder and Chief Business Officer, Kinolved
Jeffery Bander	Founder, Urgent Software
Carol Barash	Founder and CEO, Story2
Ben Branham	Executive Vice President and Chief Strategy Officer, New York
Alice Chun	Co-Founder, Solight Design
Pinaki Dasgupta	CEO and Co-Founder, Hindsait
Mike Dubrovsky	Founder & CEO, Simply Grid
Jonathon Ende	CEO, Seamless Docs
Jeff Friedman	Director of eGovernment Business Development, Microsoft

David Gilford	Vice President and Director, NYC Economic Development Corp.
David Gould	Senior Advisor, United Hospital Fund
Kevin Hom	Dean of The School of Technology and Design, CUNY
Jonathan Howard	Recruiter, Senior Director of Talent, Democracy Prep Public
Denis Hurley	Product Manager of Future Technologies, Pearson North America
Tim Johnson	Executive Director, Greater New York Hospital Association
Stacy Kelly	Co-Founder, Solight Design
Steven Kuyan	Managing Director, Incubators and Entrepreneurship, NYU Polytechnic School of Engineering
Rachael Labrecque	Co-Founder, Teachley
Linda Liu	Executive Director, SAT Program, The College Board
Erica Lock	Deputy Director Fellowship Programs, Echoing Green
David Margalit,	Chief Operating Officer, NYSERDA
Megan Mitchell	Program Manager, UBS
James Mora	President, Innovative Energy Solutions
Steve Nerayoff	Founder & CEO, CloudParc
Tim Onoff	President, National Strategies, Inc.
Stanley Onyimba	Senior Associate, Seamless Docs
John Peracchio	Managing Member, Peracchio & Company, LLC
John Raffaelli	Chief Executive Officer, Slate and Tablets
Tucker Reed	President, Downtown Brooklyn Partnership
Josh Robin	Vice President, North America, Masabi
Jason Saltzman	Startup Mentor, Entrepreneur, CEO Alley NYC
Cristina Shapiro	Vice President, Goldman Sachs Urban Investment Group
Alexandria Sica	Executive Director, DUMBO Improvement District
Michael Simas	Executive Vice President, Partnership For NYC
Liz Simon	Associate General Counsel and Director of Public Policy, General Assembly
Thomas Tsang	Chief Medical Officer, Merck Healthcare Services and Solutions
Kathleen Warner	Business Leader and Strategist, Inspire Ventures
Alim Williams	Founder & CEO, Social Effort
Andrew Yang	Founder and CEO, Venture For America

San Francisco, CA

Troy Ault	Director of Research, Cleantech Group
Steve Austin	Instructor, Founders Space
Dan Barber	Head of Teacher Satisfaction, AltSchool
Rose Broome	CEO, HandUp
Ragi Burhum	CEO, Amigo Cloud
Robert Callahan	Executive Director for California, Internet Association
Denise Cheng	Innovation Fellow, SF Mayor's Office of Civic Innovation
Laurent Crenshaw	Public Policy, Yelp
Jordan Epstein	CEO, Stroll
Eric Danziger	Vice President, Genability
John Doherty	Vice President, State Politics and Policy, TechNet
Nadia Eghbal	Principal, Collaborative Fund
Andy Fremier	Deputy Executive Director, California Metropolitan Transportation Commission
Mike Gillam	XPRIZE
Anna Hon	Director of Operations, LearnSprout
Kiran Jain	Chief Strategy Officer, Neighbor.ly
Jason Kaminsky	Vice President of Partnerships, kWh Analytics
Paul Kim	Chief Technology Officer and Assistant Dean, Stanford Graduate School of Education
Peter Koht	Co-Founder, Open Counter
Libby Leffler	Global Partnerships, Facebook
Julie Lein	President, Tumml
Jon Lieber	Head of Policy Research, Thumbtack
Michael Masserman	Director of Government Relations, Lyft
Scott Mauvais	Director of Technology and Civic Innovation, Microsoft
Deborah McKoy	Institute of Urban and Regional Development, UC Berkeley
Josette Melchor	Founder, Gray Area
Barbara Mittleman	Vice President, Nodality
Alan Mond	Co-Founder and CEO, MuniRent
Philip Morrison	Client Services Manager, Cleantech Group

Dennis Murphy	Founding Chair, U.S. Green Building Council, Northern California Chapter
Shauntel Poulson	Principal, New Schools Venture Fund
Ray Pedden	Strategy and Innovation Consultant, Center for Care Innovations
Ben Politzer	Sales and Marketing, Education Elements
Arun Ravi	Founder, Mevoked
Sammie Rayner	Partnerships and Strategy, HandUp
Ronald Razmi	Founder and CEO, Acupera
Dharmishta Rood	Program Manager, Code for America Accelerator
Shawn Rosenmoss	Senior Environmental Specialist, San Francisco Department of the Environment
Aenor Sawyer	Associate Director, UCSF Center for Digital Health Innovation
Mark Schwartz	Managing Director, Launchpad Digital Health
Charles Sheehan	Communications Manager, San Francisco Public Utilities Commission
Tristan Sokol	Developer Relations, Pearson
Eddie Tejada	Founder, Civic Insight
Sarah Teske	Catalyst Program Manager, Pearson
Brandon Tinianov	Board Member, U.S. Green Building Council, Northern California Chapter
Mike Wang	Director of Community Engagement, Minerva Project
Cameron White	Associate Director, co.lab
Jase Wilson	Founder, Neighbor.ly
James Windon	President, Brigade

Washington, D.C.

Susan Ades	Director, Office of Exhibits Central, Smithsonian Institution
Grant Allen	Senior Vice President, ABB Technology Ventures
Zachary Axelrod	CEO, Nextility
Ed Barrientos	CEO, Brazen Careerist
Darcy Bellerjeau	Manager, Executive Engagement, Microsoft
William Borden	Director of Healthcare Delivery Transformation, George Washington University
Robert Cane	Executive Director, FOCUS (Friends of Choice in Urban Schools)

Matt Caywood	Co-Founder and CEO, TransitScreen
Craig Cummings	Co-Founder and COO, RideScout
Brendan Curry	Vice President, Space Foundation
Nick Dawson	Executive Director of Innovation, Johns Hopkins Sibley Hospital
David Deschryver	Co-Director and Senior Vice President, Whiteboard Advisers
Rahul Dubey	Managing Director, America's Health Insurance Plans
Chris Etesse	CEO, Flat World Education
David Fairbrothers	Co-Founder, Dorsata
William Gathright	CEO, Tumulow Energy Storage
Paul Gleger	Regional Director, General Assembly
Richard Goldberg	President, Georgetown University Hospital
Kate Goodall	COO, S&R Foundation
Alex Gorstan	Product Manager, Opower
John Gossart	VP Business Development, Ridescout
Mark Grovic	General Partner, New Markets Venture Partners
Collin Gutman	Partner, Acceleprise Ventures
Art Guzzetti	Vice President, Policy, American Public Transportation Association
Kathleen Hale	Co-Founder and CEO, Rebel Desk
Hunter Hayes	Founder and CEO, ZeroCycle
Gary Hensley	Founder and CEO, EdBacker
Jack Hersey	General Manager, Health & Social Services Industry and US Health Sales
Rachel Holt	Regional General Manager, East Coast, Uber
Jess Jacobs	Director of Innovation, Aetna
Emil King	Policy Analyst, District Department of the Environment
Gabe Klein	Special Venture Partner, Fontinalis Partners
Sally Kram	Director of Public and Governmental Affairs at Consortium of Universities
Lisa Mallory	CEO, DC Building Industry Association
Samier Mansur	Co-Founder, LiveSafe
Maura Marino	Managing Director, New Schools Venture Fund
Keith Martin	Partner, Chadbourne & Parke
Dave McCarthy	Co-Founder, Potential Energy

Kenyan McDuffie	Councilmember, Council of the District of Columbia
Angela Messer	Executive Vice President, Booz Allen Hamilton
Emeka Monome	Deputy Executive Director, Federal City Council
Rick Moore	COO, WGL Energy Services
Alex Morrison	VP Business Partnerships, Discovery Education, Discovery Communications
Douglas Naegele	President, Infield Health
Juan Pablo	Co-Founder and President, 1EQ
Bryce Pippert	Principal, Booz Allen Hamilton
Jeff Reid	Founding Director, Georgetown Entrepreneurship Initiative
Joel Reyes	Senior Technology Evangelist, Microsoft
Hans Riemer	At-Large City Councilmember for Montgomery County
Marco Rubin	Managing Partner, Exoventure Associates
Jennifer Rudy	Director, Enterprise and Partner Group (EPG) Marketing, Microsoft
DJ Saul	CMO and Managing Director, iStrategyLabs
Devin Schain	Founder and CEO, National Education Initiative
Neal Sikka	Director of the Section of Innovative Practice, George Washington University
Ahnna Smith	Chief of Staff, US Department of Education
Logan Soya	Founder and CEO, Aquicore
Sabrina Sussman	Vice President for Membership and Development, Intelligent Transportation Society of America
Andrew Trueblood	Chief of Staff, Office of the Deputy Mayor for Planning & Economic Development
Zuhairah Washington	General Manager, Uber
Neil Weissman	President, MedStar Health Research Institute

Technical Appendix: Index Methodology

This section provides a breakdown of the source, methodology, weighting, and additional explanations for each metric of the index.

All metrics were converted to a 1-4 relative scale to be classified as either Nascent, Emerging, Established or Leading.

Table 15. Civic Entrepreneurship Index: Methodology

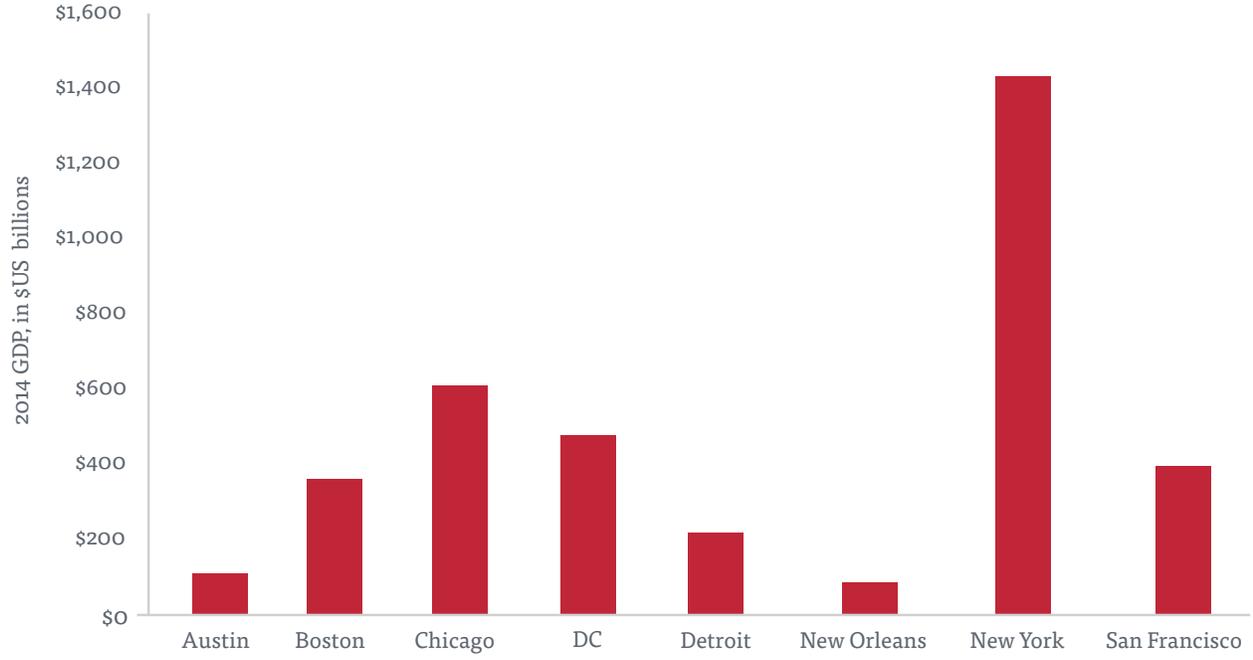
	Weight	Source	Methodology	Notes
Leadership	20%			
Exits: Education	12%	Mattermark	Total Value of Exits 2010- 2015	Vertical Search Tags: "Education", Funding Total, Undisclosed Values not Counted
Exits: Energy	12%	Mattermark	Total Value of Exits 2010- 2015	Vertical Search Tags: "Energy, Clean Tech", Funding Total, Undisclosed Values not Counted
Exits: Health	12%	Mattermark	Total Value of Exits 2010- 2015	Vertical Search Tags: "Healthcare", Funding Total, Undisclosed Values not Counted
Exits: Smart Cities	12%	Mattermark	Total Value of Exits 2010- 2015	Vertical Search Tags: "Government, Transportation", Funding Total, Undisclosed Values not Counted
Champions: Education	12%	Mattermark	Number of \$5 Million+ Funding Rounds 2013- 2015	Vertical Search Tags: "Education", Funding Total, Undisclosed Values not Counted
Champions: Energy	12%	Mattermark	Number of \$5 Million+ Funding Rounds 2013- 2015	Vertical Search Tags: "Energy, Clean Tech", Funding Total, Undisclosed Values not Counter
Champions: Health	12%	Mattermark	Number of \$5 Million+ Funding Rounds 2013- 2015	Vertical Search Tags: "Healthcare", Funding Total, Undisclosed Values not Counted
Champions: Smart Cities	12%	Mattermark	Number of \$5 Million+ Funding Rounds 2013- 2015	Vertical Search Tags: "Government, Transportation", Funding Total, Undisclosed Values not Counted
Perceived Engagement from Serial Entrepreneurs	33%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Institutional and Corporate Support	20%			
Education: Elite Universities	4%	U.S. News and World Report	Number of Universities in Top 100	http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities
Education: Universities	4%	Internet Research	Total Number of Universities	Manual Count
Education: Community Colleges	4%	Internet Research	Total Number of Community Colleges	Manual Count

	Weight	Source	Methodology	Notes
Education: Public School System	4%	Fordham Institute	Reform Friendliness Ranking	http://files.eric.ed.gov/fulltext/ED511602.pdf
Energy: Utilities	8%	Internet Research	Market Capitalization as of 3/28/15	Combined Market Capitalization of all Utilities within MSA
Energy: Major Corporations	8%	2014 Fortune 1000	Number of Listed Companies	Manual Count
Health: Hospital Network Size	4%	U.S. News and World Report	Number of Listed Hospitals	http://health.usnews.com/best-hospitals/rankings
Health: Hospital Network Quality	4%	U.S. News and World Report	Number of Listed Hospitals with Ranked Subspecialty	http://health.usnews.com/best-hospitals/rankings
Health: Star Hospitals	4%	U.S. News and World Report	Number of Hospitals in 2014- 2015 "Honor Roll"	http://health.usnews.com/health-news/best-hospitals/articles/2014/07/15/best-hospitals-2014-15-overview-and-honor-roll
Health: Major Corporations	4%	2014 Fortune 1000	Number of Listed Companies	Manual Count
Smart Cities: Digital Cities Rating	8%	Govtech Digital Cities Survey	Number of Appearances in Survey 2010- 2014	http://www.govtech.com/dc/digital-cities/
Smart Cities: Municipal Innovation Program	8%	Internet Research	Verified Establishment of Specialized Innovation Department	General Information or Entrepreneurship Departments were not Considered as Specialized Innovation Programs
Perceived Engagement from Civic Institutions	17%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Perceived Engagement from Corporations	17%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Capital	20%			
Venture Capital Investment	16%	National Venture Capital Association	Total Investment 2012- 2014	
Angel Investment	16%	Angel Resource Institute	Percentage of National Angel Investment, 2012- 2013	Some Data was only Available at the Regional Level, so City/Region Ratios Calculated From National Venture Capital Association Data
Potential Wealth Investment	16%	U.S. Census Bureau, U.S. Conference of Mayors	Percentage of MSA Households in Top 5% x 2014 MSA GDP	See V. "Listening Tour Insights, Solution 5: Unlocking Hidden Capital"
Unlocked Capital Ratio	16%	Calculation	Venture Capital Investment/Potential Wealth Investment	See V. "Listening Tour Insights, Solution 5: Unlocking Hidden Capital"
Perceived Engagement from Angel Investors	17%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Perceived Engagement from VC Investors	17%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Talent	20%			
Resident Tech Skills (Percentage of Residents)	17%	LinkedIn	Percentage of New Residents with Tech Skills	http://blog.linkedin.com/2014/06/24/indias-got-tech-talent-cities-in-india-top-list-of-cities-attracting-technology-talent/

	Weight	Source	Methodology	Notes
Resident Tech Skills (Total Residents)	17%	LinkedIn	Total Number of New Residents with Tech Skills	http://blog.linkedin.com/2014/06/24/indias-got-tech-talent-cities-in-india-top-list-of-cities-attracting-technology-talent/
Education: Teacher Workforce	11%	National Center for Education Statistics	Total Number of Teachers	http://nces.ed.gov/ccd/schoolsearch/
Energy: Engineer Workforce	6%	Department of Labor	Total Number of Mechanical and Electrical Engineers in MSA	http://data.bls.gov/oes/
Smart Cities- STEM Workforce	6%	Brookings Institute	Total Number of STEM Field Workers	http://www.brookings.edu/research/reports/2013/06/10-stem-economy-rothwell/profiles
Health: MD Graduates	6%	American Association of Medical Colleges	Total Number of MD Graduates 2010- 2014	https://www.aamc.org/download/321532/data/factstable27-2.pdf
Health: Nursing Workforce	6%	U.S. Department of Health and Human Services	Total Number of LPNs and RNs	http://bhpr.hrsa.gov/healthworkforce/reports/nursingworkforce/nursingworkforcefullreport.pdf
Perceived Level of Talent Quality	33%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	
Community Support Structures	20%			
Incubator Programs	17%	Internet Research	Total Number of Programs	Manual Count
Accelerator Programs	17%	Internet Research	Total Number of Programs	Manual Count
Co- Working Facilities	17%	Internet Research	Total Number of Programs	Manual Count
Education: Startups	13%	Angel List	Total Number of Startups in Industry	Search Tags: "Education"
Energy: Startups	13%	Angel List	Total Number of Startups in Industry	Search Tags: "Energy, Clean Energy"
Health: Startups	13%	Angel List	Total Number of Startups in Industry	Search Tags: "Health Care"
Smart Cities: Startups	13%	Angel List	Total Number of Startups in Industry	Search Tags: "Governments, Transportation"
Perceived Engagement from Community Programs	33%	Survey	Brunswick Insights Survey of Local Civic Tech Entrepreneurs	

Technical Appendix: Unlocked Capital Ratios

To study the concept of unlocked capital (See V. Listening Tour Insights, Solution 5. Unlock Hidden Capital), we devised a metric to show the relative progress each metro area has made in unlocking its hidden capital. We first looked at each city’s metro GDP to determine its overall wealth:

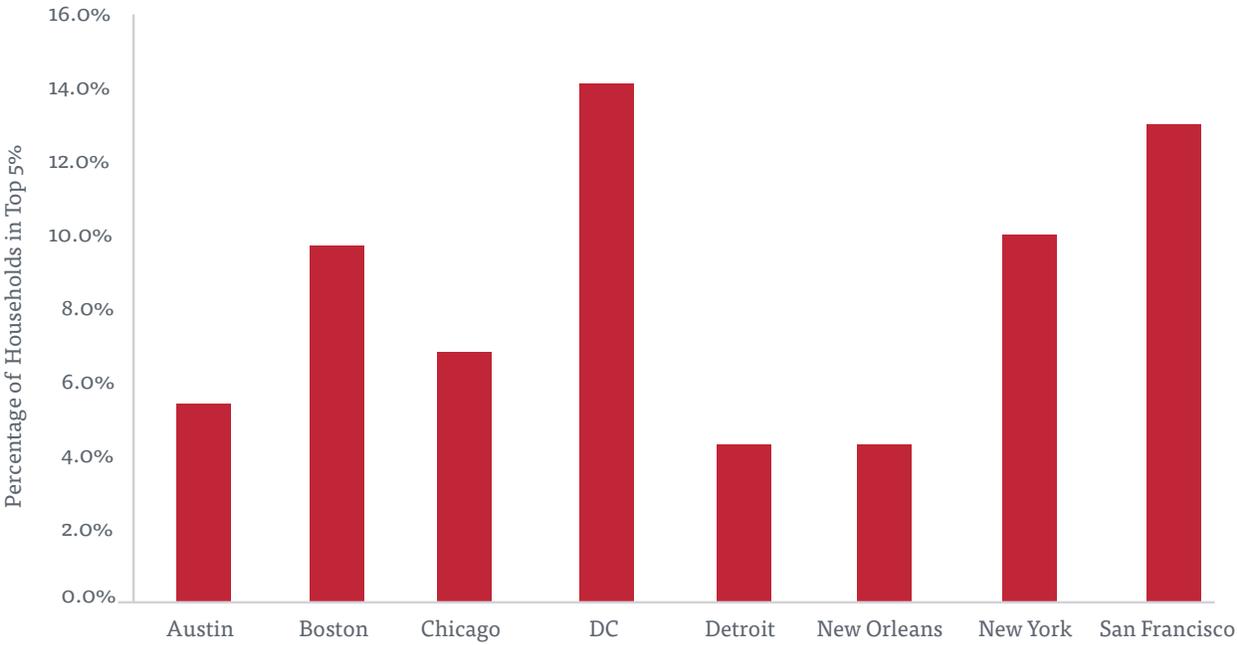


Source: U.S. Conference of Mayors

*Bay Area includes San Francisco and San Jose combined Metropolitan Statistical Areas (MSAs)

Figure 36. City Metro Areas by GDP

Then because we know that angel and venture capital investors tend to come from a small, wealthy portion of the population, we looked at census data to determine the concentration of high-income households in each city:



Source: U.S. Census Bureau

Figure 37. City Metro Areas by Wealthy Households

We then multiplied the metro GDP by the percentage of wealthy households to create a proxy metric showing the relative amount of income in each city possessed by affluent individuals who could potentially invest in startups. While we know this metric does not represent an actual exact value of potential investment, we do think it serves as an adequate proxy indicator of the relative available wealth:

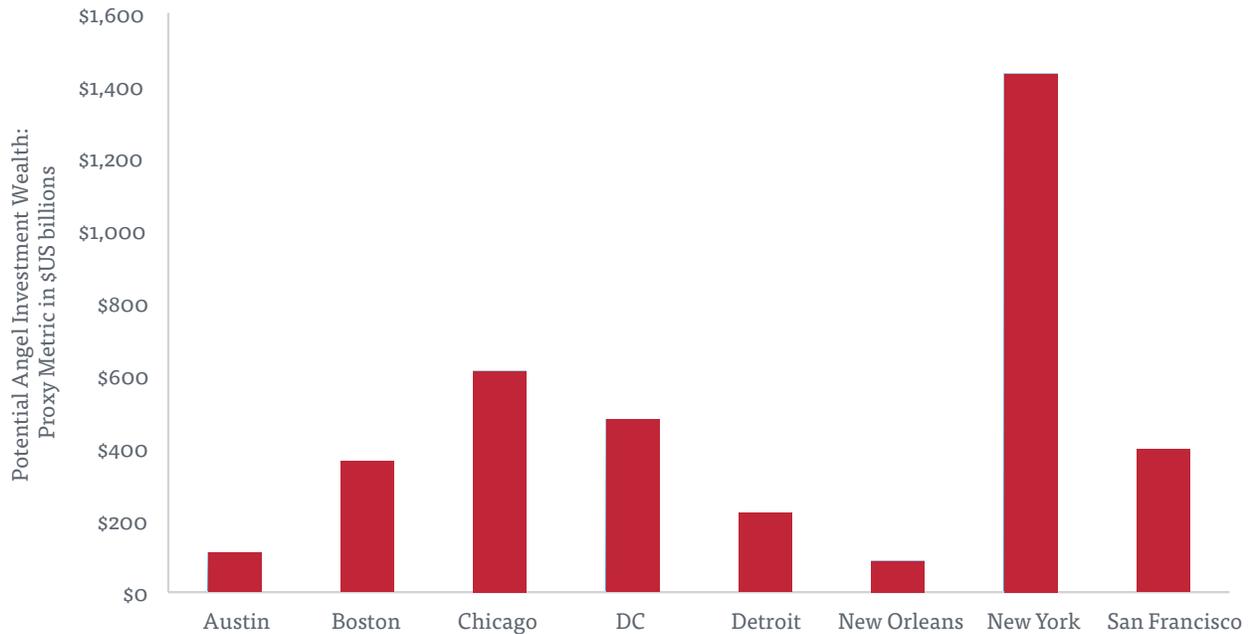
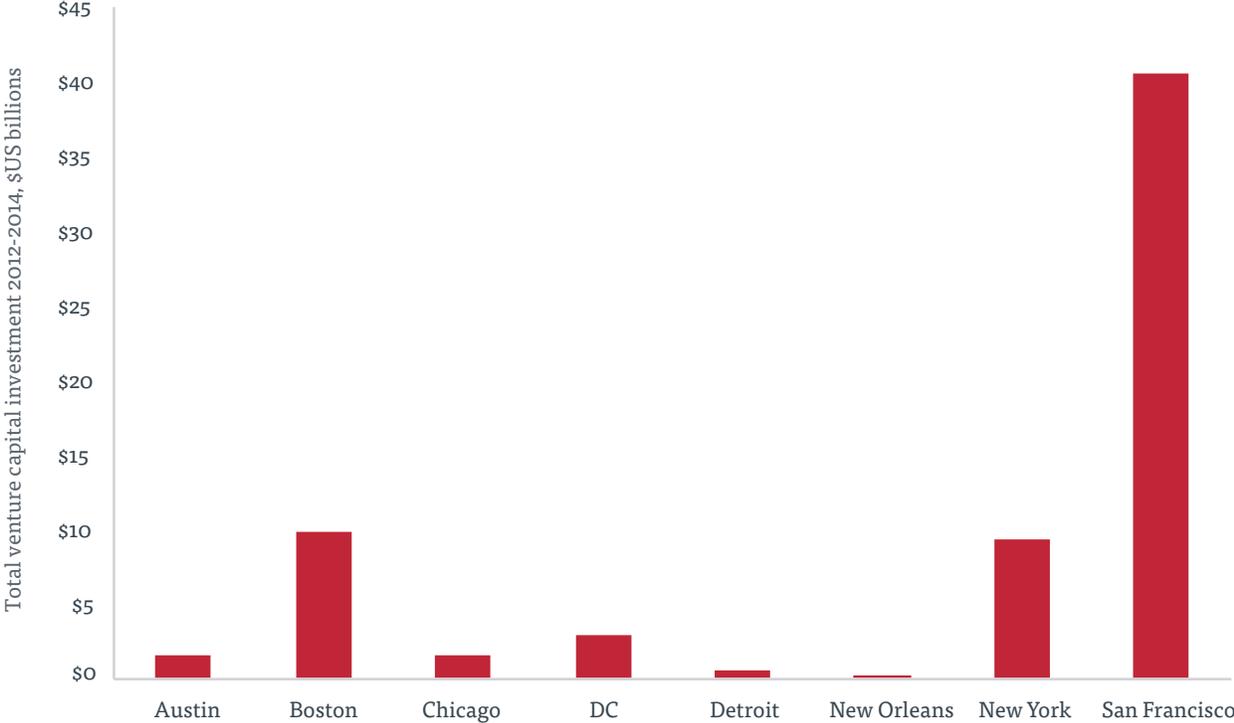


Figure 38. City Metro Areas by Potential Investment Wealth

We then compared this to total 2012-2014 venture capital investment in each city:



Source: National Venture Capital Association

Figure 39. Total Venture Capital Investment 2012-2014

By dividing these actual investment figures by our calculation for potential investment wealth, we created an “Unlocked Capital Ratio” that shows how well each city is doing in channeling its existing wealth into actual startup investment. This ratio is a proxy metric, which means that as a standalone value it has no meaning, but rather serves as a point of comparison between cities:

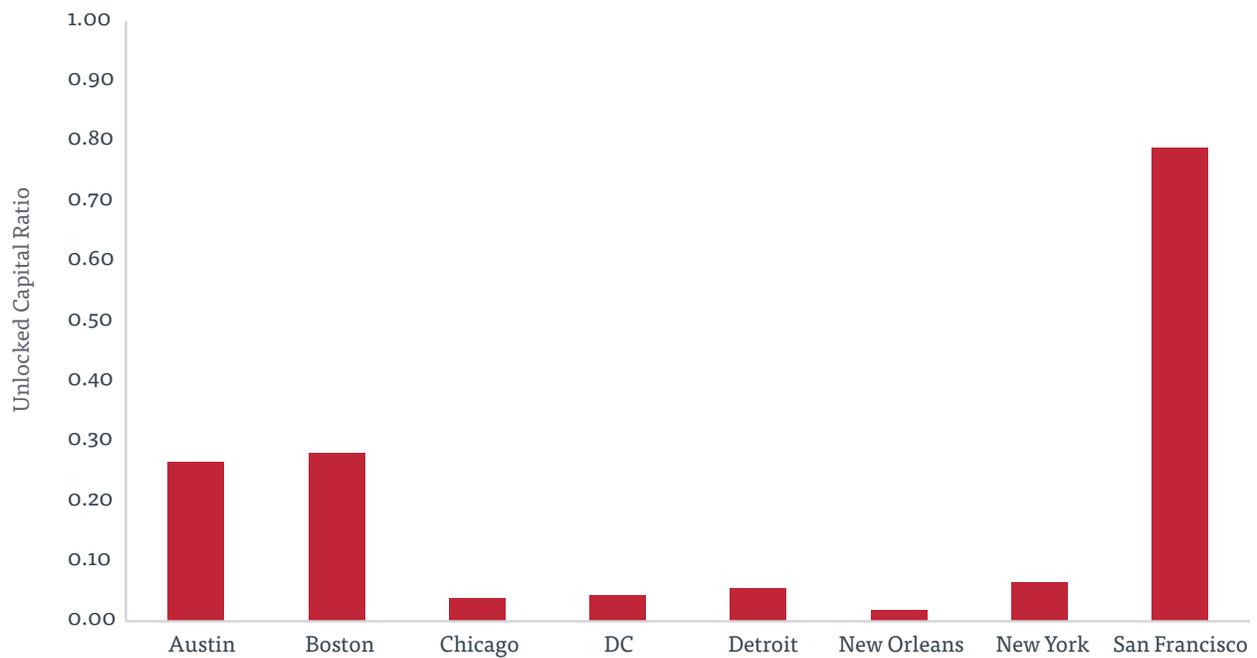


Figure 40. Unlocked Capital Ratios

These “Unlocked Capital Ratios” were used as a metric for the “Capital” component area of the Index.

Endnotes

- 1 Fox, Justin. "What Still Makes Silicon Valley So Special." Harvard Business Review. <https://hbr.org/2014/12/what-still-makes-silicon-valley-so-special>
- 2 Mary L. Walshok, Josh D. Shapiro (2014), Beyond Tech Transfer: A More Comprehensive Approach to Measuring the Entrepreneurial University, in Andrew C. Corbett , Donald S. Siegel, Jerome A. Katz (ed.) Academic Entrepreneurship: Creating an Entrepreneurial Ecosystem (Advances in Entrepreneurship, Firm Emergence and Growth, Volume 16) Emerald Group Publishing Limited, pp.1-36: <http://www.clustermapping.us/sites/default/files/files/resource/Beyond%20Tech%20Transfer.pdf>
- 3 Editorial Projects in Education Research Center. (2011, September 19). Issues A-Z: No Child Left Behind. Education Week. Retrieved Month Day, Year from <http://www.edweek.org/ew/issues/no-child-left-behind/>, "A Flagging Model." The Economist. <http://www.economist.com/news/special-report/21646988-americas-higher-education-system-no-longer-delivering-all-it-should-flagging-model>
- 4 "HHS Announces Timelines." PT in Motion, <http://www.apta.org/PTinMotion/News/2015/1/27/HHSTimelinesAnnounced/>
- 5 State and Local Governments' Fiscal Outlook: 2014 Update. GAO- 15-224SP. Washington, D.C. <http://www.gao.gov/assets/670/667623.pdf>
- 6 <http://www.wsj.com/articles/SB10001424053111903480904576512250915629460>
- 7 Asteroff, Janet. "A Progress Report on Jeff Bezos Transforming the Washington Post." PBS. <http://www.pbs.org/mediashift/2015/01/a-progress-report-on-jeff-bezos-transforming-the-washington-post/>
- 8 Tabarrok, Alex, and Tyler Cowen. "The End of Asymmetric Information." Cato Unbound. <http://www.cato-unbound.org/2015/04/06/alex-tabarrok-tyler-cowen/end-asymmetric-information>
- 9 Glaser, John. "Expanding Patients' Role in Their Care." H&HN. http://www.hhnmag.com/display/HHN-news-article.dhtml?dcrPath=/templatedata/HF_Common/NewsArticle/data/HHN/Daily/2013/Jun/glaser061113-7280003149
- 10 "A New System of College Ratings—Invitation to Comment." The U.S. Department of Education. <http://www2.ed.gov/documents/college-affordability/framework-invitation-comment.pdf>
- 11 "Voice of the Customer." Provalis Research. <http://provalisresearch.com/solutions/applications/voice-of-the-customer/>
- 12 Morrison, Scott. "So Many, Many Words." WSJ. <http://www.wsj.com/articles/SB120129801401017897>
- 13 DePillis, Lydia. "The Way Government Does Tech Is Outdated and Risky." Washington Post. <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/10/21/the-way-government-does-tech-is-outdated-and-risky>

- 14 “Procurement.” Code For America. <https://www.codeforamerica.org/governments/principles/procurement/>
- 15 “Managing Hockey Stick Growth.” USTREAM. <http://www.ustream.tv/recorded/14931107>
- 16 Detroit Green Map, <http://www.detroitgreenmap.com>
- 17 EdSurge. EdTech Products. <https://www.edsurge.com/products/>
- 18 “What is MI2?.” MedStar Institute for Innovation. <http://mi2.org/about/what-is-mi2>
- 19 The Mayor’s Office of New Urban Mechanics. City of Boston. <http://www.cityofboston.gov/newurbanmechanics/>
- 20 New Schools Venture Fund. <http://www.newschools.org>
- 21 Cleantech Group. <http://www.cleantech.com>
- 22 Burfield, Evan. “Regulatory Hacks.” Medium. <https://medium.com/@eburfield/regulatory-hacks-ea209178ef88>
- 23 Said, Carolyn. “Uber, Lyft, Airbnb Harness Users to Lobby Lawmakers for Them.” San Francisco Chronicle. <http://www.govtech.com/dc/articles/Uber-Lyft-Airbnb-Harness-Users-to-Lobby-Lawmakers-for-Them.html>
- 24 Wilson, Megan R. “Drone Lobby Takes Flight.” The Hill. <http://thehill.com/policy/transportation/206042-drone-lobby-takes-flight-on-k-street>
- 25 Di Caro, Martin. “Ridesharing Legislation Passes D.C. Council Over Protests of Cabbies, Teamsters.” WAMU 88.5. http://wamu.org/news/14/10/28/uberx_lyft_win_key_battle_in_dc_council
- 26 Bullis, Kevin. “Why SolarCity is Succeeding in a Difficult Solar Industry.” MIT Technology Review. <http://www.technologyreview.com/news/427830/why-solarcity-is-succeeding-in-a-difficult-solar-industry/>
- 27 St. John, John, and Wesoff, Eric. “Solar Paired with Energy Storage Scores a Regulatory Win in California.” Greentech Media. <http://www.greentechmedia.com/articles/read/Solar-Paired-With-Energy-Storage-Scores-a-Regulatory-Win-in-California>
- 28 Previous Challenges. City Mart. <http://www.citymart.com/challenges-index/#previous-challenges>
- 29 Recycling Innovation Forum. AustinTexas.gov. <http://www.austintexas.gov/recyclinginvestment>
- 30 LEAP Innovations. <http://www.leapinnovations.org>
- 31 “Energy Department Invest \$3.2 Million. Energy.Gov. <http://energy.gov/articles/energy-department-invests-32-million-support-clean-energy-small-businesses-and>
- 32 Innovation Center for the Safety Net. Center for Care Innovations. <http://www.careinnovations.org/programs-grants/innovation-center/>
- 33 Alternative Components. Ohio Department of Education. <http://education.ohio.gov/Topics/Teaching/Educator-Evaluation-System/Ohio-s-Teacher-Evaluation-System/Alternative-Components>
- 34 Student Surveys for Ohio District. Panorama Education. <http://www.panoramaed.com/state/ohio>

- 35 Strong, Rebecca. "As the MBTA Crumbles, Boston's App Developers Step Up." BostInno. <http://bostinno.streetwise.co/2015/02/26/mbta-delays-new-mbta-apps-for-t-bus-in-boston-cambridge/>
- 36 Walsh, Bryan. "Is This America's Smartest City?" Pecan Street. <http://www.pecanstreet.org/2014/06/time-magazine-is-this-americas-smartest-city/>
- 37 Badger, Emily. "Revitalizing New Orleans by Crowdsourcing Renewals." Fast Copmany. <http://www.fastcoexist.com/1680759/revitalizing-new-orleans-by-crowdsourcing-renewal>
- 38 Civic Insight. <http://us4.campaign-archive2.com/?u=bc89bc1a568c7ecb05735efod&id=01fofd50c2&e=>
- 39 Kinolved Educational Attendance Software. <https://kinolved.com>
- 40 Overly, Steven. "Newly formed angel groups bring local start-ups greater access to capital." Washinton Post. http://www.washingtonpost.com/business/capitalbusiness/newly-formed-angel-groups-bring-local-start-ups-greater-access-to-capital/2012/10/05/cd2e4b38-0e66-11e2-a310-2363842b7057_story.html
- 41 Ballard, Julia. "NO/LA Angel Networks Invests \$1Million in Three Local Startups." Silicon Bayou News. <http://siliconbayounews.com/2015/01/28/nola-angel-network-invests-1-million-in-three-local-startups/>
- 42 Clean Energy Venture Group. <http://cevg.com>
- 43 MATTER. <http://www.matterchicago.com>
- 44 Ekstrom, Vicki. "Prime-ing Energy Innovation." MITei. <http://mitei.mit.edu/news/prime-ing-energy-innovation>
- 45 Greenfield, Matt, and Vander Ark, Tom. "Boosting Impact: Why Foundations Should Invest in Education Venture Funds." Getting Smart. <http://cdno.gettingsmart.com/wp-content/uploads/2014/03/Boosting-Impact-Final.pdf>

Brought to you by

1776



U.S. CHAMBER OF COMMERCE FOUNDATION

FREE  ENTERPRISE