Modeling Sustainable Futures: Cultural Shift Strategies for Sustainability Leaders
Case Study New York City’s Department of Education’s Office of Sustainability

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Abstract
Recognition of detrimental effects of rapid industrialization have resulted in the development of sustainable policies designed to promote and ensure a greener future for all. These measures have motivated organizations in both public and private sectors to create sustainable leadership positions to help manage these new mandates. This paper examines New York City’s sustainable policies, governed by two mayors, in hopes to make NYC “the most sustainable, resilient city in the world”\(^1\) Current research shows that policy is the driving force motivating organizations to create leadership positions that lead sustainability actions. The research suggests that these new sustainable leaders will require strategies in creating cultural and behavioral shifts, in both their organizations and communities, to be able to execute these new directives.

The research examines the New York City Department of Education’s (DOE) Office of Sustainability’s Initiatives, and recommends necessary strategies that are starting to be implemented by DOE’s Director of Sustainability. The proposed framework provides sustainability leaders with guidelines that help to sponsor organizational cultural change. NYC’s Public schools district is the largest school system in the United States and comprises of over 1800 public school buildings serving over a million students. This is a nascent movement in the United States; New York City’s Director of Sustainability position was only developed in 2009.

Keywords: Sustainability, Design Thinking, Policy, Culture, Change Management, Innovation, New York City, Conservation, Social Responsibility

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Introduction

Only in recent decades has the issue of global warming and environmental health become part of mainstream conversations. Scientists, civic leaders and experts have been trying to educate the public, industry and policy makers on the need for changing behaviors and ameliorating the impact the industrial revolution has had on our social and environmental health. It is argued that business and civil institutions need to recognize the impacts that industrialized nations’ limitless use of fossil fuels, massive resource consumption and huge emission of greenhouse gases have implied for social and ecological systems (Gore, 2006). Companies have not fully grasped how they can transform existing systems and harmful practices affecting both human and ecological systems to positive ones (Rogers, 2010). Experts argue that organizations suffer from system blindness where they cannot comprehend the fundamental economic restructuring that is needed to ensure their own survival. They state that most companies try to solve problems without understanding the complex nature of connections, relationships, and influences that are involved (Goleman, 2013).

Organizations are looking at different models and frameworks that can help them direct their mission, vision and goals along more sustainable pathways. These prototypes focus on large and small areas of operation. They help organizations conduct structured, achievable, and strategic conversations around new or existing business initiatives. Successful organizations, for example Nespresso, have developed business models that have had a powerful effect on the sustainability-oriented transformation of their markets and supply chains (Osterwalder, 2013). The newly developed business models or frameworks are designed to function differently, based on a logic of how an organization operates, creates, and captures value for stakeholders in a specific marketplace (Casadusus-Masanell & Ricart, 2011). Design is an important component of an organizations’ strategic approach and its competitiveness since it allows the synthesis and integration of external knowledge with existing organizational capabilities (Cooper and Kleinschmidt, 1987, Gardiner and Rothwell, 1985). Experts in the field began to focus on how design can influence organizations’ decision making and their efforts to build a competitive advantage. Grob and Dumas (1987), and Borja de Mozota (1990) regard design as strictly intertwined with an organizations’ strategic management concerns. Kotler and Rath (1984) suggest the importance of design as a strategic process which seeks to optimize consumer satisfaction and company profitability, via different levers such as improved performance, form, durability, and value in connection with products, environments, or identities.

The current research investigated the understanding of the necessary strategies needed to create cultural shifts in the sustainability domain that can be utilized by change agents in all sectors. A suggested “Integral Design Thinking” framework was developed in initial stages of the research.

2 After years of environmental and business analysis the author has found that the main culprits of the damage to our health and environment is in our business practices, our built environment and our land development.
1. The Case in a Nutshell – Analysis of Strategies needed for Sustainability Leadership and Leaders in a “Change Agent” role to Implement Organizational Cultural Shifts

1.1 Case Study History

This case involves the efforts of the New York City’s (NYC) Department of Education’s (DOE) efforts to implement sustainability mandates to its 1800 schools. NYC is the largest school district in the US and is unique in its structure: it is divided into many interrelated agencies. The study evaluated the efforts of the DOE’s Office of Sustainability (located in the Division of School Facilities [DSF]) efforts to embed sustainability into its school system culture.

In American society businesses have the power to impact the economy, and affect laws and policies that have been implemented and passed by government officials. As global warming and the environmental agenda has come into mainstream in past decades they have had influence to transform environmental, business, and social issues affecting business practices. This new way of thinking has helped the growth of markets, such as, green buildings development and organic and ecofriendly products. The term Sustainability as defined by Goodall (2012) “is about calculating the limits humankind has to live within, and then using our scientific genius to give us all a good life within those boundaries.” He attempts to show demonstrate the necessity of understanding our limits and knowledge to develop healthier systems that can be implemented in all aspects of what is done, how it is done, and understanding all the connections. This holistic understanding was also suggested by McKibben (2011), where he argues that society, business and government need to change behaviors in thinking, acting, or working, as well as, modification of values in this new era of climate change. These modifications lead to culture change where sustainable practices become imbedded in businesses strategic planning and initiatives.

As businesses have seen the need for reevaluating current systems, so have municipalities. In 2007, New York City’s PlaNYC was an unprecedented effort undertaken by Mayor Bloomberg to prepare the city for one million more residents, strengthen the economy, combat climate change, and enhance the quality of life for all New Yorkers. The plan was designed through the collaboration of more than 25 City agencies and is run by the Long-Term Planning and Sustainability (OLTPS) office. OLTPS monitors the effectiveness of the plan and reports on progress every year (NYC the Office of the Mayor, 2011). The “PlaNYC 2014” progress report shows how the design of the plan includes sustainability indicators to help “monitor current conditions and relate them to our long term goals.” These indicators were designed to provide quantifiable metrics to realize if goals are met, and to provide transparency and accountability as reported by the NYC office of the mayor (2014). The report argues that, as systems are designed and implemented, quantifiable metrics should be included in the equation as this will aid in the ability to monitor the performance of the model or framework that is being designed and developed (PlaNYC Progress Report, 2014).

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3 Information from PlaNYC 2014 Progress Report pg 33
PlaNYC has influenced NYC’s government agencies to push for sustainability measures. Since the implementation of the plan, the DOE’s Division of School Facilities has been developing sustainability initiatives so that school staff, students, and the overall community can become aware of different sustainable methods. Analysis of how this large governmental agency seeks to understand and implement sustainable frameworks that create culture change would be a great asset to understanding the strategic design and planning of cultural shifts.

The 21st Century is witnessing the rise and merging of different movements in global corporate responsibly and sustainability efforts. Horrigan (2010) argues that corporate social responsibility (CSR) is one of the most important issues and developments of the last decades. He asserts that it will play a significant part in determining the shape and fate of the world for generations to come. As organizations redefine their image and brand, they look to the Social Capital theory of branding, in which organizations engage in rich, varied and frequent dialogues, and shared thinking and engagement with their internal and external customers as a means of developing trust and loyalty. Champniss and Rodes Vila (2011) show how there is a link between social capital and sustainability. They (Champniss, & Rodes Vila, 2011) argue that when sustainability is embedded in an organization, social capital thinking develops, making it more intuitive, engaging and durable. A conclusion formulated is that in today’s consumer market, organizations need to recognize that society is its principal supplier and needs to be protected, and nurtured for the long term to secure its own survival.

Through this preliminary research, it shows that Mayor Bloomberg’s PlaNYC was the catalyst that propelled the sustainable, green movement to the next level. The policies and mandates that were introduced started a chain reaction that has pushed public agencies, as well as, private organizations to create positions to manage the compliance requirements set by new laws and regulations. The Department of Education, Sustainability team has been in existence for just seven years. In 2007, New York City released PlaNYC, an aggressive sustainability plan aimed at reducing the City’s greenhouse gas emissions by 30% by 2017. The plan was upgraded in April 2011 (PlaNYC 2030). Integral to this agenda is a plan to reduce energy consumption in municipal buildings and, particularly in public schools. In September 2014, Mayor de Blasio committed New York City to reducing its greenhouse gas emissions by 80 percent over 2005 levels by 2050, stated in his vision, One City, Built to Last: Transforming New York City’s Buildings for a Low-Carbon Future. This initial plan has created thousands of new jobs for New Yorkers and aided in the development of the green jobs market. This makes New York the largest city to commit to the 80 percent reduction by 2050. In 2015 the mayor again passed ONE New York plan that has pushed for even more stringent sustainability mandates for the city. One example is the mandate that all New York City Schools will be Zero Waste schools, where they have to divert 90% of their waste stream from landfills.

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4 Information from DOE website http://schools.nyc.gov/community/facilities/sustainability/about/
Public schools comprise 40% of all municipal buildings and are responsible for 25% of the City’s carbon emissions and its total light, heat and power spending, costing New Yorkers an estimated $233 million per year. All these directives being pushed by city government are shaping the future of the sustainability market and helping in the creation of Sustainability Leadership positions to meet these demands. An example of this is the Zero waste initiative ordinance as of April 2015, this has opened 8 new positions for waste coordinators to help manage this process at the DOE’s Office of Sustainability.

New York City is unique in its structure, division of agencies and how they work and rely on each other. The DOE itself is divided into many divisions that have to work and rely on many other city agencies to get their work done, this is illustrated in Figure 1. The Sustainability team is located in the Division of School Facilities (DSF).

Leaders of sustainability are being added to organizational models because their top sustainable initiatives such as energy efficiency and waste management mandates have the most comprehensible payback to the organization. These individuals are starting to assess and apply measurements so that they can implement policy regulations that are being decreed from city, state and federal levels. This is a young movement in New York City and at the same time one of the oldest in the US. For example, Washington DC school district hired their first Director of Sustainability in 2015, while New York City’s position was developed in 2009. In NYC other government agencies also added Directors of Sustainability to their organizations at the same time; such as, Department of Buildings, hired a Sustainability Director to design and develop a system of accountability of buildings in both the public and private sectors. A timeline of the Office of Sustainability’s function is illustrated in Figure 2.

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8 NYC DOE Sustainability Initiative Corp Leadership Council Concept DRAFT DOC 12/13/2013
### 1.2 Sustainability Team and Organizational Connections

Although DSF chairs the sustainability efforts for the DOE, various other DOE divisions (such as School Food and School Construction Authority (SCA) and City agencies, such as the Department of Sanitation (DSNY), Department of Citywide Administrative Services (DCAS), and Division of Energy Management form a cooperative group of stakeholders (see Figure 3). School sustainability coordinators play a vital role in the structure of the Office of Sustainability, as they are in charge of relaying information and lead sustainability efforts within their school. Non-profit partners are also key players that help in the education, support and implementation of strategies the sustainability team is mandated to execute. These various organizations and individuals play an integral part in helping to achieve a more sustainable New York City school system.  

![Figure 3: Sustainability team is the Bridge to all Stakeholders](image)

### 1.3 Objective

The objective of the case study was to understand in detail what measures were essential in creating cultural shifts towards sustainability in the NYC’s Public Schools. Key issues and questions included: how and why were sustainability positions/functions formed; how have they evolved; what challenges have been presented; how have the latter been addressed; what strategies were attempted; and, what can be learned (for innovators in the public and private sectors, and for policymakers at service, national and supra-national levels) from the experience.

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<sup>9</sup> Information from 2013-2014 Annual Sustainability Report.
2. Methods

The case study focused on the exploration of the subject of sustainability; an examination of its effects, implementation and tools that are needed to embed the theory and concepts into organizational culture. The research examined the use of and need for design thinking, innovation and creative strategic planning in the metamorphosis of organizational culture.

This research used an exploratory methodology at its core. As Stebbins, 2001 (p6) suggests “To explore effectively a given phenomenon, they must approach it with two special orientations: flexibility in looking for data and open-mindedness about where to find them”. The case study was conducted in an emerging market and its findings suggest that there has not previously been a clear definition or answers to the research questions. The exploratory methods relied on qualitative approaches such as case studies and interviews. Additional data gathering methods included review of reports, white papers, journal articles, and books. The study followed an inductive data collection method to generate insight and assist in building theory, to help aid in the development and understanding of the research case study.

In a single instrumental case study (Stake, 1995), the researcher focuses on an issue or concern, and then selects one bounded case to illustrate this issue. A Case Study commonly involves time in the field, interviews, transcription and analysis (Zucker, 2009). Action research was also utilized in this study. By becoming a part of the case study environment, more in-depth analysis of the surroundings, communications channels and key stakeholders took place: this assisted in establishing the baseline for the environment and research. The researcher worked closely with key stakeholders and suggested recommendations for implementing change in the DOE. The next steps taken were monitoring the effects of change and analyzing information on how to develop and improve the process.

The research was of multi-strategy design and utilized mixed methods and multiple methods of data collection. Qualitative data was gathered to facilitate an in-depth understanding of behaviors in the organizations, and an understanding of what might be required to support botto-up organizational culture shifts. The following methods were used in the generation of qualitative and quantitative data:

- Semi-structured interviews – questionnaires with basic thematic questions to start conversations, that lead to elucidation of interviewee-led materials information from each person. Targeting key personnel both internally and externally in the organization.
- Questionnaire/Surveys – Were used to target a larger population for data gathering.
- Brainstorming – created opportunities where large groups of people were able to collaborate, share ideas and feel part of the change/development process
- Observation – this aided in gathering information on behavior, communication methodologies, and interactions at all levels. The aim was to see what needs to be developed to build trust and a foundation for cultural shifts.
- Written literature on the subject – analysis of existing expert points of view to aid in formulating the findings and conclusions.
3. Findings and “Integral Design Thinking” Framework for Sustainability Leaders

It doesn’t matter if you are in a public agency or a privately held one, any organizational change agent will need the right tools and strategies to be able to push any agenda forward. The research shows that, all stakeholders need to start defining sustainability in the same way; learn what are the best ways to work together; learn what is needed for each team members organization to succeed in their goals; how sustainability initiatives can become second nature to be easier on all as more stringent regulations and mandates keep coming to combat climate change. As a result an integral design thinking framework was developed by the research, illustrated in Figure 6. The next sections demonstrate how the design thinking framework strategies will aid Sustainability Leaders in implementing cultural shifts into their organizations:

3.1. Design Thinking

Some strategies of the design thinking part of the framework are as follows:

- Seeing beyond the naysayers and finding solutions.
- Holistic thinking.
- Developing and innovating existing systems.
- Prototyping, testing and improving.

As part of the research Working Groups were developed with internal stakeholders, external stakeholders and school based stakeholders. Through the working groups’ introduction to Design Thinking / Creative Thinking Exercises was initiated. Design Thinking is the ability to apply creativity to the formulation and resolution of the problems and challenges. It helps create incremental changes by bringing together participatory, human-centered and integrated design approaches to help play a pivotal role in transforming individuals and collective attitudes and behaviors (Chick & Micklethwaite 2011). The concept of ‘Design Thinking’ became a portal for the whole design area to contribute to innovation, and design thinking enabled innovation to supersede strategic management as a way to deal with a complex reality (Johansson-Skoldberg, Woodilla & Centinkaya, 2013). In 1984 the first mention of design as a strategic tool was made by Kotler & Rath (1984), but it took 20 years for the concept to come to mainstream environments and have any sustained discussion (cf., Fraser, 2007; Junginger, 2007; Martin, 2007a) with ‘wicked problems’ (Camillus, 2008) and design thinking (Brown, 2009; Holloway, 2009).

It has taken 20 years for the concept to come to mainstream, and brought about many sustained discussions about “wicked problems” and design thinking.

3.2. Branding

Some strategies of the branding part of the framework are as follows:

- To internal stakeholders
- To external stakeholders
- Development of transparency / reporting

Other research leads to claims that creating alignment in an organization is one of the most important work leaders need to develop. They conclude that companies that
enjoy enduring success have core values and core purpose that remain fixed while their business strategies and practices endlessly adapt to a changing world. Strategies to build brand image and company reputation can enhance business customers’ perception of product and service quality, and value thereby increasing customer loyalty (Cretu and Brodie, 2007). It is advised that the first step for an organization is to recast their vision and mission into effective context for building a sustainable visionary future. One strategy would be to install performance measures and reward structures tied to both internal and external goals. This would help teams build a sense of local responsibility, camaraderie and ensure the proper collaboration of internal operations in line with the corporate mission. Senior management must establish a hands-on presence; create opportunities for collaboration between all organizational members to encourage them to have a ‘big picture’, more holistic thinking. (Collins and Porras 1996, Levy 2001)

Branding and communication connections are a necessity when developing this strategy. Brand image and vision need to be connected to the definition of what all involved would understand and identify with. Branding is a technique to build a sustainable organization, that’s takes on a differential advantage by playing on the nature of human beings. Essentially, the purpose of branding is to build the product’s image among the consumers (Cleary, 1981). For the DOE’s sustainable team, branding a new image was all about getting the internal customers on board, as well as the external customers, the schools. They created a department motto and new brand image as part of the communication strategies. Working with internal staff a tag line of “The Power in Your Hands” was developed to give the schools, to include every student, teacher and individual the understanding that they have the power to make positive change in their environments. This was adapted to also work with the larger organization where another tag line was designed “One DSF = One Team = One Unit.”

Figure 4 illustrates some examples of the marketing that was used:

Figure 4: Brand and Message Development Examples

Further strategies were being developed with the Communications and Training Coordinator to come up with ways in which the logo could be marketed to schools that have become sustainable. For example, creating a certification program that the

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10 This logo is associated with suggested DOE Framework for Sustainable Schools, as there are 8 doorways or topics that define sustainable schools and there are 8 colors the hand, each will represent a topic – the fingers and the movable parts and the palm is the solid foundations, such as inclusion, community and global community.
schools can go through. Each year the schools must become recertified in order to be able to use the logo on their letterhead and market that they are a sustainable school.

3.3. Communication Development

Some strategies of the communication part of the framework are as follows:

- Opening communication channels both internally and externally.
- Developing standards to convey same message.
- Develop accountability.

This phase establishes communications development that helps build moral and open communication and collaboration within the organization. Creative thinking workshops were developed for the leadership of the organization, external third party stockholders and school based stakeholders. As leadership in sustainability positions attempt to execute and modify systems they will need to understand the stresses of everyone involved in their organization and beyond. Sustainability leaders need to be able to communicate the ways they will:

- Assist each level of the organization with their tasks
- How these sustainability strategies will improve their work?
- How they will assist them with their desired outcomes?

Sustainability leadership will have to understand empathy and how to use it as a strategy in their work. Having the perception of how sociocultural factors have shaped others experiences and understanding of the world, will helps leaders develop better strategies that are crucial in building a working alliance (Neukrug, E., Bayne, H., Dean-Nganga, L. & Pusateri, C., 2013). The quality of empathy is suggested to be the greatest contributor in strengthening social interaction through its ability to motivate individuals to cooperate, to share resources and to help others (de Vignemont and Singer 2006; Hosking and Fineman 1990; Van Lange 2008).

From these initial interviews, findings show that proper internal communication strategies will have to be designed and implemented. Understanding of these barriers will be essential to the success of any cultural shift attempted. Several forms of barriers can impede the communication process. Longest, Rakich, and Darr (2000) classify these internal barriers into two categories: environmental and personal. Environmental barriers are characteristic of the organization and its internal environmental setting. Examples of this can be connected to workplace, mission, vision and goals. Personal barriers arise from the nature of individuals and their interaction with others. Both barriers can block, filter, or distort the message as it is encoded and sent, as well as when it is decoded and received. Strategic internal communication is simply a step towards helping the organization achieve its aims more effectively. A good team should evaluate the outcomes of the internal communication strategy and ensure that continuous improvements are being made (Stegaroiu, I. & Talal, M., 2014).
3.4 Community Building

Some strategies of the community building part of the framework are as follows:

• Stakeholder Engagement Internal.
• Stakeholder Engagement external.
• Education development and advocacy.

By identifying and considering a range of stakeholders, firms can gain competitive advantage by engaging with customers and other partners and encouraging inter-group engagement (Brodie, et al., 2006; Luschet, et al., 2007). The initial findings showed that all internal staff worked in silos. There was limited communication and information sharing between departments or teams. For any change initiative to be able to happen there needs to be collaborative efforts within the organization. Each stakeholder in the network confers a particular knowledge set to its relationship with the principal firm and an increase of interest and collaboration (Antanacopoulou and Méric, 2005).

The classification of community concerns particular features (Putnam, 2000; Harting, et al., 2006; Podnar and Janc, 2006), such as the place of community affiliation; the country where a community develops; the group of people with whom one carries out some activity and shares interests with; and the virtual community one takes part in. To create a sense of community and collaboration within organizations proper communication channels need to be developed. For example, part of the research with the Sustainability team was to help develop the advisory council and see if there could be strategies for implementation of cultural shifts with this larger group of stakeholders. The Council was composed of about 52 people all from diverse backgrounds and groups. The council had representatives from City Agencies, City Unions, Sustainability Coordinators, Principals, Parents, Facility Managers and non-profit Partners, and universities

The first community based advisory meeting was in March 2015. This consisted of two working sessions, one with internal organization members and the second session with external stakeholders. The sustainable community group is based on elements of interaction (face-to-face or electronic) that consists of people developing social relationships, whether they are living in the same place or not (Godwin, 1997).

3.5 Speaking the same language

Some strategies of the speaking the same language part of the framework are as follows:

• Defining Sustainability for the organization.
• Connecting all stakeholders to the message (Internal & External).
• Developing tools and messages to promote and spread the vision.

One of the biggest disconnects that exists in the case study organization and similarly other public and private sector organizations, is the lack of communication and connections to a defined sustainability vision. To address this the researcher designed and developed multiple strategies that addressed this issue on a multi-level approach. The initial workshop introduced design thinking ideas, innovation and looked for a definition to what sustainability is to NYC public schools.
3.5A Universal Definition of Sustainable Schools
Research finding disclosed that there was no true universal definition of sustainable schools in NYC public schools and that this is creating major communication barriers between agencies. For the channels to open a true definition of what sustainable schools are and what resources are needed to be developed and adopted by all associated with the schools. A suggested definition based on the UK’s Sustainable Schools Framework was established to align with both our Mayor's and School Chancellors visions. Figure 5 Sample of drafted Sustainable Schools Framework.

![Figure 5: Draft of suggested definition of Sustainable Schools NYC](image)

3.5B Unified Pledge for all Public Agencies and Unions involved in schools to work together under the proposed definition.
A pledge was developed to open communication channels and understanding of what needs to be done on all levels. This was modeled after District of Columbia’s (DC) Mayor’s College and Universities Sustainability Pledge.¹¹

3.5C Unified Pledge for all Stockholders involved in schools to work together under the proposed definition.
Following the same concepts, as above, a pledge was also developed to be administered at the School level. This was designed to help teachers, principals and students develop a culture of sustainability.

¹¹ Sample of this pledge can be found at http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/publication/attachments/CUSP.signatures.pdf
Conclusion

Figure 6: Integral Design Thinking Framework

Sustainability leaders are put to the task of making sustainability part of their organizations strategic plan. Government agencies and businesses are all already starting to analyze how they should become more sustainable, or how they might stimulate and progress sustainability initiatives in their practices and communities. The purpose of this study was to understand in detail what measures or strategies are essential for sustainability leaders to utilize in creating cultural shifts towards sustainability in their organization. The research developed a framework based on “Integral Design Thinking” that consists of five strategic categories that were undertaken by this study, they are as follows: Design Thinking, Branding, Community Building, Communication Development and Speaking the Same Language. As seen in figure 6 above.

This research reflected on strategies to help organizations understand the need for a cultural metamorphosis when talking about sustainability and understanding the tools and environment necessary to achieve success. As in most cases, organizations tend to implement sustainability initiatives in a singular and isolated manner. This research aspires to provide another option in the field, a more holistic approach, where true culture change is necessary for the longevity of sustainability in an organization. The researcher continues to analyze the suggested Integral Design Thinking Framework on other case study organizations. As well as, continued research in organizational sustainable best practices.


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