

CHAPTER 3

SUSTAINABILITY AT THE CLEVELAND CLINIC: A NETWORK-BASED CAPABILITY DEVELOPMENT APPROACH

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ABSTRACT

Purpose

This chapter argues that organizations are not sustainable if they operate in unsustainable societal and ecological contexts, and that operating in a way that contributes to the health of the larger system requires organizations to develop new capabilities. It demonstrates the role that rich internal and external networks play in developing sustainability capability particularly in providing pathways to generate, import, apply, and disseminate knowledge about how to operate more sustainably.

Design/Methodology/Approach

The case study of the sustainability transition of Cleveland Clinic is based on four years of interviews and archival data collection examining the system's transformational change that began in 2007. The case focuses on the building of sustainability capability, including an internal infrastructure to focus the organization on this outcome, and building of rich networks for learning and action. The case is framed with capability and network theory.

Findings

Guided and catalyzed by a small central group called the Office for a Healthy Environment, Cleveland Clinic has achieved measurable progress in key strategic focuses including waste diversion, energy efficiency and increasing integration of local foods into its supply chain. To do so, it has developed strong internal networks to disseminate knowledge and accelerate innovation and adoption of sustainable practices. Strong, dynamic external networks have enabled Cleveland Clinic to import knowledge about sustainable practice from its environment, and have enabled it to help build the sustainability capability of its vendors, the community upon which it depends, and the healthcare industry.

Originality/Value

Starting with the perspective that the sustainability of an organization depends on the sustainability of the eco-systems in which it exists, this paper focuses not on the design of specific sustainability initiatives, but on the dynamic networks that underpin the capability to simultaneously improve the health of the organization and of the larger eco-system. This perspective provides insight into new organizing principles.

Key Words: Sustainability, capability, networks for knowledge and action, sustainable healthcare

This chapter examines capability development for sustainable effectiveness. Our underlying arguments are that organizations are not sustainable if they operate in unsustainable societal and ecological contexts, and that operating in a way that contributes to the health of the larger system requires organizations to develop new capabilities. Organizations depend on their natural and social contexts for sustenance, while they also directly and indirectly affect the health of both. Sustainable organizations have to manage their own viability but also contribute to the viability of the larger system on which they depend for human, economic, and natural resources.

The dependence of organizations on their contexts has become increasingly apparent during the past decades. The rapidly growing global economy that has produced thriving corporations and increased wealth and quality of life for large segments of the global population has at the same time left many behind and exploited others, and threatened natural ecologies through toxicity and pollution that harm human health and deplete the natural resources upon which humanity depends. Organizations have traditionally organized to manage their own resource stream for financial success, and have treated their other impacts as externalities -- factors for which they are not responsible and do not have to pay the costs, and that are not taken into account in the purpose of the organization, its governance, the way it operates, nor its criteria for and measurements of success. Explicitly managing impact on the natural ecology and human society rather than focusing solely on financial outcomes requires the development of new capabilities. To be sustainable requires embedding new ways of operating both internally and in interaction with the context (Mohrman & Worley, 2010).

In this chapter, we examine the approaches used by Cleveland Clinic to steadily enhance its capabilities to positively affect the environment and the communities in which it operates, and to influence and contribute to the sustainability of the healthcare industry. In 2007, Dr. Delos Cosgrove (CEO and President of Cleveland Clinic) made a decision to become an industry leader in addressing the negative impact of healthcare systems on the natural environment and, by implication, on the health of employees, patients, and people in the communities in which they operate.

Cleveland Clinic is the largest healthcare delivery system and employer in Cleveland, Ohio and as such its operations have a large impact on the community. It has a close relationship with the Case Western Reserve Medical School, and through its research is an important contributor to the knowledge and practice of healthcare globally. Given its identity as a not-for-profit academic medical center, taking an explicit capabilities development approach and focusing on knowledge development have been culturally natural strategies to employ in aggressively pursuing the building of a “Healthy Environment.” This approach has entailed the development of rich networks to import, generate, apply, and disseminate knowledge about how to operate more sustainably. Rich networks involving many stakeholders have been built to influence the overall capabilities and sustainability of Cleveland Clinic and of its community, supply chains, and the larger healthcare industry.

Although we primarily examine the “Healthy Environment” activities of Cleveland Clinic, the tight interconnectedness of financial, ecological and societal dimensions of performance has been addressed throughout the transition activities. This case illustrates how an organization that is among the most successful in its industry in achieving its core mission of treating patients is broadening its focus to include an expanded definition of success.

CAPABILITY DEVELOPMENT AND NETWORKS

Organizational capabilities are the know-how that enables the achievement of intended outcomes (Dosi, Nelson, & Winter, 2000). Becoming a sustainable organization involves broadening the domain of intended outcomes beyond the financial to include ecological and social outcomes, and expanding the time horizon to consider long term impact on the health of the earth and of society. Attaining these expanded outcomes may not be achievable given the organization’s current know-how: its technical or managerial expertise and the way it is set up to operate. Organizations setting out to become more sustainable may not have the knowledge to design zero-emissions and zero-landfill products or facilities, to design and manage supply chains that do no ecological harm and that foster positive human rights and community development, to design services and products that simultaneously meet business, social and

ecological needs, or to lead and manage organization change to foster new decision criteria and change behavior.

Developing new capabilities and embedding them in how the organization operates are slow, difficult, and costly processes with uncertain outcomes (Henderson & Cockburn, 1994). This is particularly true when the new capability challenges existing ones that are deeply engrained in how the organization operates. Taking a long term stewardship view of the outcomes of the organization and accepting responsibility for contributing positively to humanity's future may appear to conflict with short term profit maximization and to require investment without a payback. Or, in the case of Cleveland Clinic, which is rated among the top four healthcare systems in the U.S. (Comarow, 2012) and most certainly measures itself in terms of outcomes critical to humanity, there may be reluctance to add other focuses such as ecological impact for fear this could divert attention from its extraordinary healthcare delivery capability. Tension between new sustainability capabilities and existing ones may be especially strong if the organization does not yet have the knowledge and skills to make decisions and carry out work differently to foster sustainability.

Capabilities are not discrete skills. Rather, they are composite bundles of competencies--general and specialized skills, technologies, work and managerial processes (Hamel, 1991; Tell, 2000; Pavitt, 2003). Current performance in any organization is defined by existing capabilities that are deeply embedded, including its processes and organizational frameworks (Daft & Weick, 1984; Galbraith, 1973; Nelson & Winter, 1982), its communication and collaboration channels, and its problem-solving strategies and decision criteria (Henderson & Clark, 1990). Together these reflect a dominant logic or design (Abernathy & Utterback; 1978; Prahalad & Bettis, 1986; Nelson & Winter, 1982) that evolves through a series of incremental changes that build on and reinforce that logic. New capabilities that are not extensions of the dominant logic require the building of new bundles of competencies (knowledge and skills), new organizing approaches and frameworks, and the rationalization of these with other organizational capabilities to create an overall coherence. For healthcare systems such as Cleveland Clinic, for example, building awareness of the causal loop between negative environmental impact and

the health of patients and citizens, and expanding focus to include wellness and community well-being, represent an expansion of their capabilities, albeit in areas that can be understood in terms of their core mission.

Much of the literature on organizational capabilities rests on the assumption that knowledge is strategically the most important resource of the firm, and that acquiring and advancing new capabilities rest on the ability of the organization to generate, learn, and incorporate new knowledge (Dosi et al., 2000). An organization striving to become sustainable must learn how to operate differently. The knowledge currently embedded in the organization will have limited applicability toward the new intended outcomes. Knowledge grows through two generic processes: 1) disseminating and exchanging knowledge between actors; and 2) combining previously unconnected knowledge to generate new knowledge and novel solutions (Ghoshal & Moran, 1996; Kogut, 2000; Shumpeter, 1934). Both sharing knowledge and combining it to generate organizational solutions are inherently social processes, and occur within a network of internal and external connections that allow individuals to call upon others for knowledge and access to contacts of contacts (Adler & Kwon, 2002; Brown & Duguid 2000; Liebeskind, 1996; Murray, 2002; Wenger, 1998; Nahapiet & Ghoshal, 1998; Burt, 2010). In many industries and professions, rich external network structures have been shown to facilitate the creation of new knowledge and to accelerate the development of new products and services. (Kogut & Zander, 1992; Tsai, 2002; Tsai & Ghoshal, 1998; Powell, 1998; Powell, Koput, & Smith-Doerr, 1996).

The ability of an organization to import knowledge from the outside and to alter and improve its practice has been called “absorptive capacity” (Cohen & Levinthal, 1990). It rests on the availability within the firm of knowledge that can connect to the knowledge being accessed from outside. For example, do people in a healthcare delivery system know enough about plastic materials to be able to apply emerging scientific knowledge about materials and recyclability to divert plastics away from landfills? Do the procurement people have sufficient knowledge of chemicals and materials and of the demands of healthcare settings for sterility and other features to apply the burgeoning knowledge about chemical toxicity and emerging bio-based materials?

Absorptive capacity does not simply depend on the organization's direct interface with the external environment, but also on transfers of knowledge across and within subunits. The challenge is to turn learning accessed through external network links into organizational learning that is used to guide action and becomes embedded in organizational practice (Powell, 1998). As a large complex organization houses many projects simultaneously, many of which require similar knowledge, linkages across the organization can greatly accelerate the application and combination of knowledge in the context of multiple projects (Cross & Thomas, 2009). Hansen (1998; 1999) found that complex projects benefit from strong, collaborative ties that allow knowledge combination. Weaker linkages defined by awareness and familiarity may be sufficient in order for people to know who has expertise so that they can activate the connection to secure knowledge as needed.

Professional practice communities house the internal knowledge of the organization, and can create a vital link to knowledge originating outside the organization. They are significant repositories for the development, maintenance, and reproduction of knowledge, and they are the source of social identity (Coleman, 1988; Brown & Duguid, 2000). Learning by individuals is not merely the acquisition of information; it also involves learning new ways of acting that are recognized and accepted by communities of belonging (Fleck, 1979; Giddens, 1984; Schon, 1983). Communities of practice are particularly salient in industries like healthcare that have many professions, each with its own frameworks, value systems, work processes, and knowledge bases. Each community of practice will have to incorporate relevant knowledge to become more capable of sustainable practice, both within their own practices and in interaction with others.

Industries are also characterized by knowledge networks. Institutionalized practice and connections among the actors in the industry affect their capacity to operate more sustainably. The level of sustainability found in an industry relates to the incentive structures that are inherent in its regulation, market characteristics, supply chain capabilities, research focuses, professional societies, and customer demands (Hoffman, 2006). Knowledge flows through the various industry and professional societies and associations of the industry, as well as between suppliers and customers. Different industries have

varying levels of focus on issues of sustainability as well as different levels and rates of generation and exchange of sustainability-related knowledge. In the healthcare industry, a number of associations and consortia, such as Practice Greenhealth and Healthcare Without Harm, have emerged to promote an industry-wide focus and concern, and to enable collective learning and progress.

The challenge facing healthcare is formidable, and the journey is just beginning. The healthcare industry creates a large amount of toxicity and waste. Hospitals in the U.S. alone generate about 6 million tons of waste annually (Practice Greenhealth, 2012), 20% of which is hazardous and may be infectious, toxic or radioactive (WHO, 2011). Healthcare's waste and pollution pose a real threat to the environment, as well as to patients and healthcare workers themselves. Adverse impacts include greenhouse gases, waste, toxic chemicals, wasteful water use, air pollutants, and non-sustainable land use patterns (Turley et al., 2011). Pharmaceuticals are detectable in surface water, drinking water, sewage, and soil (Dussault, Balakrishnan, Sverko, Solomon, & Sibley, 2007; Kolpin et al., 2002; Ternes, 1998). Healthcare is a contributor to the ills it is tasked with treating.

As we describe the various approaches taken by Cleveland Clinic to promote a healthy environment, we will focus on the strong internal and external relationships that have been developed to embed sustainability capability in the way it operates. These relationships allow knowledge to be shared and developed to increase the sustainability outcomes both for Cleveland Clinic and for the various organizations in its contexts. We will focus on:

- 1) internal knowledge networks to develop a more sustainable way of operating;
- 2) inter-organizational linkages and partnerships that leverage supplier and community relationships and knowledge to enhance and institutionalize sustainability;
- 3) community-based networks that increase the sustainability of the local context in which Cleveland Clinic operates; and
- 4) industry-based forums that enable the industry as a whole to aggressively generate and disseminate knowledge about sustainable approaches.

The case demonstrates the mutually reinforcing nature of the network linkages, knowledge flows, and collaboration at all of these levels (Figure 1), and the orchestration of these connections to enable Cleveland Clinic to aggressively pursue healthy environment outcomes.

Although there are many potential network connections, organizations and individuals selectively activate them in order to accomplish purposes and achieve outcomes. Whether actors access the resources available in the network depends on their awareness and opportunity, motivation, and ability (Adler & Kwon, 2002). Cleveland Clinic is building an organizational infrastructure to increase awareness and opportunities for more sustainable performance, and to motivate individuals and groups to focus on sustainability, and to connect and learn about it. The infrastructure includes and reflects the role of the Office for a Healthy Environment (OHE), a unit that develops knowledge and activity linkages internal and external to Cleveland Clinic, and catalyzes many more. Since 2007, OHE has been building a framework for learning, measurement, goal-setting, communication, and project/program management and support. The goal has been to develop a broad sustainability focus and motivation throughout the organization, and the capability to continually introduce new knowledge and practices.

[Figure 1 About Here]

BUILDING THE CAPACITY TO OPERATE SUSTAINABLY: CLEVELAND CLINIC

This chapter is based on three waves of longitudinal interviews (2008-2011) with members of the OHE, collaborating entities, and managers at Cleveland Clinic. It also draws on archival records, reports, including information about the organization, various initiatives involved in this sustainability transition, and partner organizations. The data gathering was facilitated by a research partnership between the authors of this chapter. Christina Vernon provided much of the historical perspective, and access to archival information and to interview respondents. She was centrally involved in crafting Cleveland Clinic's healthy environment strategy and the philosophy of collaboration that has underpinned it. The case reflects her framing of the transition through time.

The Context

Cleveland Clinic was founded in 1921 and in 2011 saw 4.6 million patient visits. Based in Northeast Ohio, Cleveland Clinic consists of a large main campus with more than 20 buildings, plus eight community hospitals, family health centers and specialty centers throughout the region. It also has facilities in Florida and Nevada in the U.S., and in Toronto, Canada, and Abu Dhabi. It is a not-for-profit academic medical center with an integrated healthcare delivery system and a group practice model of medicine. It is organized into 18 organ system and disease focused institutes, such as the Heart and Vascular Institute and the Cancer Institute, which use multidisciplinary teams to achieve an integrated, patient-focused approach to medical care. Cleveland Clinic employs 2,800 physicians and scientists, 40,000 employees, and has 65 accredited residency training programs. Since 1994, Cleveland Clinic has ranked as #1 in cardiac care in the U.S. by *U.S. News and World Report*. Additionally, 12 other clinic specialty areas rank in the Top 10. Overall, Cleveland Clinic is rated fourth in the U.S.

When it began its healthy environment focus in 2007, it was already a world leader in patient-centered care and in wellness and prevention, trends that are profoundly changing the face of healthcare (Murphy, 2011; Weisz, Mohrman, & McCracken, 2013). Environmental stewardship was seen as an area of opportunity to reduce or mitigate negative impact from healthcare delivery. This focus received strong support from CEO Cosgrove as well as from the COO, the Executive Administrator to the CEO and Board of Governors, and the Chief Wellness Officer. The responsibility to promote healthy buildings was initially housed in the Office of Construction, but quickly the mission broadened, and the Office for a Healthy Environment was established in 2007. Christina Vernon, an architect with a passion for sustainable development, was selected to lead it and to guide Cleveland Clinic in this area.

Cleveland Clinic's commitment to a healthy environment has been furthered by its substantial engagement in the Mayor of Cleveland's Sustainable Cleveland 2019 initiative, including service on its Stewardship Council. This is a highly participative, ten-year, city-wide, multi-sector focus on reinvigorating Greater Cleveland, which had seen decline as its industrial base eroded over the past several decades. The goal is to rebuild a robust "green" city with a sustainable economy. In 2008,

Cleveland Clinic joined the City of Cleveland, Cuyahoga County, and Case Western Reserve University in a public signing of the United National Global Compact, which puts forth 10 principles relating to human rights, environment, labor, and anti-corruption, and requires annual reporting. Cleveland Clinic was the first U.S. healthcare provider to sign this.

The Office for a Healthy Environment

The OHE works within the enterprise level strategy and focuses on the elements of sustainability targeted by Cleveland Clinic's executive team. The overarching focuses have been: 1) the building and maintenance of safe and healthy buildings (since 2009 all major clinic construction has followed Leadership in Energy and Environmental Design (LEED) standards); 2) healthier operations (i.e., waste, transportation, water, climate, toxic materials, food, and energy), 3) responsible purchasing; and 4) building the capacity of people throughout the organization to act as champions and innovators.

The OHE gradually grew to six employees. They work to embed the focus on sustainability and to catalyze change across the entire clinic system—a system comprised of many professional groups, departments, institutes, and locations, each with its own culture, worldview, and deeply engrained practices. To do this, the OHE set out to address three challenges: catalyzing and enabling meaningful and continuing change in the way the various elements of the complex system function; transforming expressed interest and support into action and results; and developing standard bearers and leaders throughout the system. The OHE has no authority over line operations, yet it is accountable to lead the enterprise and its many sub-units toward more sustainable practice.

OHE includes a mix of knowledge to consult to the business about sustainability, to design and lead initiatives, to build and support networks and teams to accelerate change, to develop metrics and goals, and to craft the communication, education, and change processes required to continually increase organizational awareness and capability. In addition to its leader, who is an architect, medical planner and LEED Accredited Professional, the office grew to include a public health professional who leads employee engagement and education; a project manager with a background in biological research and an

MBA with a focus on strategy and sustainability; a regional program coordinator with experience in hospital materials handling and logistics who works closely with the “green teams” in place at each facility; an executive assistant; and a healthcare communications specialist. This interdisciplinary knowledge mix enables the team to engage with technical and business issues while dealing with the complex social challenges of helping employees expand their focus to consider their environmental impact. Team members establish external connections to bring needed knowledge into the organization, and work collaboratively with external entities.

Metrics and Goals

From the beginning, OHE started developing metrics to monitor key performance indicators and drive change, and has gradually been developing the software support to provide comparative data and to make it easier to measure progress. As part of a broader Cleveland Clinic effort to better integrate and leverage its capabilities system-wide, in 2010 the OHE was tasked with integrating sustainability activities across the enterprise. This gave the OHE a degree of positional authority to set sustainability agendas, develop a baseline set of expectations, and to set formal performance objectives for individual facilities. Baseline practices are chosen by a system-wide green team and formally become part of the performance dashboard for all facilities when at least 70% of facilities have adopted the practice.

This strategy to use agreed-to metrics, targets and feedback to drive local performance accountability has continued to grow in sophistication and depth. The Office for a Healthy Environment currently uses three measurement tools to evaluate effectiveness. It started with an Excel-based tracking tool, and migrated to the Greenhealth tracker for waste. Cleveland Clinic served as an alpha site for its development with Practice Greenhealth because there were no suitable off-the-shelf tools that enabled multi-site benchmarking. It is now transitioning to SoFi software, a more comprehensive and more fully automated tool that will produce one-click comparative and benchmarking data, based on hard measures of building performance, such as waste, energy, and water consumption, and is able to automate the collection of sustainability data from vendors. SoFi will also be able to track metrics that are proxies for

cultural adoption such as web traffic, event attendance and participation in educational and community activities. Measures such as costs incurred relative to participation by stakeholder groups and measurable financial and quality outcomes will allow the Office to evaluate its own effectiveness in reaching audiences and leveraging its limited talent and financial resources.

The second component is Cleveland Clinic's Enterprise Business Intelligence toolkit, which hosts real time business data and has drill-down capabilities for leaders throughout the organization. The Business Review Process provides a monthly business review dashboard tool for the OHE to monitor its own performance as a team and monitor top projects. Key metrics from departmental business review dashboards roll upward through department reporting structures. For OHE itself, two metrics move up through the Division of Operations business review to the COO and CEO: Enterprise Landfill Diversion Rate (% of total waste diverted from landfill) and Enterprise Energy Utilization Index (kBtu/SF).

The third measurement tool is the Global Reporting Initiative (GRI) G3 guidelines, which provide structure to inform transparent annual reporting and stakeholder engagement. Including both qualitative and quantitative measures, the GRI guidelines assist the OHE in shaping the use of all of the other tools to ensure quality and intra-sector comparability.

As a suite, these metric tools allow teams to track, manage, and place accomplishments in the perspective of institutional performance tied to enterprise goals. Rigorous metrics also allow the OHE to show that the sustainability activities have also had a consistent, positive financial return, reinforcing the key sustainability principle to yield simultaneous benefit to economic, ecological and social outcomes.

Networks Supporting Capability Development

While developing its own capabilities to lead Cleveland Clinic's sustainability transition and developing the data capabilities to measure baseline outcomes, set goals, and track progress, the OHE's primary focus was to catalyze change. The sustainability focus had not previously been on the organization's agenda, and there was very little awareness of its importance or knowledge beyond early grass roots efforts at one of its smaller care sites. The OHE quickly built connections across the organization to foster learning

about how to become more sustainable and to start to develop a shared understanding and commitment. It also developed external connections and started bringing in knowledge from the outside to inform initiatives and solutions. And, it facilitated the creation of action networks in which individuals from different parts of the organization and from external entities combined their knowledge and perspectives to develop and implement new processes and ways of operating that reached across the organization and into its broader eco-system.

Internal Networks

The evolution of facility green teams. In 2007, each facility set up a green team, tasked with learning about sustainability, examining opportunities to improve environmental outcomes, and sponsoring local approaches to environmental health. The leaders of these teams met periodically to learn from each other and from the OHE, and to share best practices. Several facilities had stepped out ahead, sent leaders to sustainability workshops, and achieved momentum. These became knowledge resources for the others. During the first year, each of the facilities was asked to generate and commit to local goals and initiatives that fit their needs, interests and opportunities.

The network of green teams gradually became more formal. The initial loose structure with self-determined local goals and objectives was effective for the first year when awareness was being built and the facilities were focused on low hanging fruit, but did not drive ownership for continuous progress. The chairs of the facility green teams began to meet virtually as a system-wide green team via a web-based meeting platform, with a clearer charter to give input to and obtain updates on the work of the OHE team, to share and leverage practices and programming, and to work toward consistent system-wide progress in achieving the enterprise goals.

Reaching diverse communities of practice. OHE quickly realized that to achieve lasting change, initiatives must mesh with the diverse energies, interests, capabilities and incentives of the individuals whose behavior requires modification to achieve goals. Sustainability must become a component of standard operating procedure, not be seen as a competing priority or externalized priority.

OHE established strong collaborative ties to subject matter experts, leaders and stakeholders with positional authority or influence within the system in order to align healthy environment goals with local and department goals and activities. This quickly yielded a broad variety of sustainability goals for diverse departments such as procurement (packaging, waste, toxicity, recyclability, local content) food service (healthy foods, recycling, waste, local content), facilities (water, waste, and energy), ORs (recycling, energy efficiency, waste minimization), and transportation (fleet management, vehicle procurement, parking, alternative transportation, or idling), among others.

For example, Cleveland Clinic Supply Chain Management (SCM) and the OHE have worked in concert to reduce waste and increase efficiency, introducing formal preferences for reusable or recyclable materials and adding energy efficiency requirements into contracting processes. They work with teams of key stakeholders in different parts of the organization, such as physician leaders, nursing or outpatient management to get input and agreement about the purchasing areas with the most potential to drive progress against goals such as mercury reduction. The first zero-waste contract (for photocopier equipment) was approved in 2011, and included provisions about the management of packaging disposal, energy efficiency, paper reduction, and toner recycling. Scores of these kinds of initiatives are going on at any one time, resulting in measurable environmental progress across the system.

The OHE partnered with the Facilities department in setting up and leading an Enterprise Energy Committee that links Facilities Management leaders, physicians, nursing and SCM as well as stakeholders from other departments. The technical energy management decisions are the purview of the Facilities Management, who has taken on a national leadership role in outside groups working on sustainable energy solutions, as part of the Department of Energy's Hospital Energy Alliance. The goal of the Energy Committee is to fund and promote the technical and behavioral changes required to radically reduce energy consumption and emissions. What began as a team sponsoring a series of initiatives has led to the cross-functional generation of a system-wide energy plan.

An important change strategy is to have many individuals throughout the organization become knowledgeable sustainability advocates and change agents, while managing risk of misinformation or

divergent practice. The intellectual and emotional passion that many feel for sustainability is an asset, but unto itself not sufficient. The OHE must connect passion with knowledge and provide practical guidance to employees throughout the organization. Advocates must become independent extensions of the OHE if sustainability is to become engrained in the way the system works. Energy conservation, recycling, or toxicity reduction has to be embedded in the context of daily activities, work processes, decisions, and goals. The OHE developed a process different units are using to analyze their step by step work activities, using a format of “Three R’s”: Roles, Reasons and Results. Using this approach, for example, OHE worked with the janitorial service to analyze how its activities affect electrical use and levels of waste. Janitorial staff members from across the system developed a clear definition of their role in conserving energy, reducing waste and recycling, and were provided with an explanation of why these energy and waste goals are important to the organization, patients and communities. Individuals and teams review workflows and causal loops, and change work processes, followed by an update on results and a celebration of progress to spur further gains. This approach engages individuals at all levels, and across the system, to start redesigning their work with triple bottom line outcomes in mind.

Targeted communication connections. The OHE has developed an organization-wide communication system about sustainability and the organization’s activities and accomplishments in this area, and providing tools for action. It quickly discovered the need to tailor communication to different constituencies because of their different knowledge bases and job responsibilities, worldviews and values, and ways of processing information. For example, OHE had launched an in-person training course for clinicians called “Sustainability and Human Health” that pointed out many areas in which clinicians play a significant role. However, this popular course drew mostly non-clinicians and administrators, rather than the intended audience: physicians. To reach physicians, the Office then created a report called “First Responder” aimed at awareness of the big picture and intended to create a pull for more knowledge. It described three environmental meta-trends -- climate change, toxicity, resource scarcity--and what pressures these trends place on healthcare, Cleveland Clinic and Northeast Ohio. Physicians responded positively to the print-format report content, but asked that it be put on the web for navigation and

convenience, resulting in the right tool for their use. Many physicians are in the early stages of becoming aware and developing a sense of how environmental issues fit with their practices-- not yet at the stage of wanting specific information about how they might change their behavior. Nurses, on the whole, have been responsive to information and education that they can translate into action. They have taken the lead in many initiatives, including recycling in the ORs. In response to this active segment of the caregiver population, a section of the OHE website is being developed that provides actionable information and knowledge to address their particular needs and opportunities.

A network of experts. To accelerate progress, the OHE has conceived the EcoCaregiver™ program to develop deeper expertise throughout the organization. EcoCaregivers self-select to become informed and empowered sustainability advocates, and to develop the skills to help design and implement local change. Participants take part in an online platform combining access to extensive sustainability information with social networking and project-based learning. EcoCaregiver™ participants will play roles both inside the hospital system and in the larger community.

In healthcare, a high premium is placed on expertise, certification and licensing, which become points of pride and a component of professional identity. Leveraging this interest in certification and achievement, EcoCaregivers will receive recognition, badges, and incentives as they learn more and master additional sustainability topic areas and demonstrate additional levels of proficiency and achievement. This program defines the knowledge base and core competencies required to build sustainability. It also identifies and rewards levels of competencies and achievement, providing a powerful individual incentive. It builds sustainability improvement not only as an individual set of competencies, but also as an organizational capability. A common language is being created that enables learning and connection across the system, and a dispersed network of individuals will be able to initiate and lead change in the way the system operates.

External Networks

Healthcare delivery systems exist in a complex healthcare eco-system, and progress toward greater sustainability is constrained by eco-system attributes such as vendor capabilities, limitations in basic knowledge and availability of green technologies and materials, regulation, and competitive norms that may work against collaboration and synergy. Cleveland Clinic depends on a diverse set of vendors. Many of its opportunities to reduce negative impact on the environment and on the community lie in sourced materials and services. Addressing the full supply chain and advancing the sustainability of the eco-system requires problem-solving and knowledge generation that cuts across varied organizations.

Existing relationships and new relationships forged by the OHE can be leveraged internally for learning, for co-designing and implementing sustainable approaches, and for innovation. Through these network connections, sustainability capability has been advanced not only within Cleveland Clinic and its many communities of practice, but also among vendors, the surrounding community, and the larger healthcare eco-system. Several examples are described below.

The landfill diversion network. Network linkages are often complex and multi-directional as is illustrated by the initiatives to continuously increase the rate of landfill diversion. Limited infrastructure and knowledge about medical plastics recycling exists within the traditional waste services sector, forcing Cleveland Clinic to move beyond simply negotiating standards with vendors. In 2008, the OHE, SCM and Environmental Services (EVS) worked to identify recyclers who could address the technical difficulties involved in recycling plastics, and to connect them with the waste hauling infrastructure. The waste reduction activities demonstrate the “test and learn” approach to develop new capabilities in a complex eco-system. Having learned from early small scale forays, in 2011 Cleveland Clinic negotiated a new contract for standardized solid waste and conventional recycling services (including commingled, cardboard bale, mixed clinical plastics, and composting services) across its Northeast Ohio facilities. A regional network was created that connected a hauler with various local recycling entities to make material move more efficiently. The approach leveraged the enterprise’s size to achieve cost reduction, included revenue sharing on the sale of recyclable material, and provided a foundation to continue to

make progress against enterprise diversion targets and to promote program consistency across facilities. The revenue generated from recycling streams returns to the OHE for funding investment in additional recycling infrastructure, process improvement and new landfill diversion programs.

In 2011, Cleveland Clinic main campus finished the year with a landfill diversion rate of over 30%, up from 10% in 2007. Annual waste audits incorporated into the enterprise waste services contract continue to uncover additional opportunity. Making further substantial reductions in the amount of material sent to landfill requires continued innovation to find ways to put byproducts to better reuse, and to stop waste generation at its source. For example, because of its strong connections in the community, the OHE was able to identify and broker a solution to the problem of sorting the many grades of plastics used in healthcare. This is a major barrier as multiple grades cannot be commingled for recycling without degrading financial value beyond the cost of handling. The plastics are now transferred to a newly created, centrally located Cuyahoga County Sheltered Workplace site, where developmentally disadvantaged employees are trained, supervised, and paid to sort them. For many workers, this is the first time they've earned their own paycheck, a source of great pride. This solution exemplifies OHE's tripartite focus on strengthening the community environmentally, economically, and socially.

Network connections go well beyond the local supply chain and community. In solving the challenge of safely collecting recyclable packaging from the operating room, new opportunities and challenges were identified. To take the program to the next level, more packaging must be designed with recyclability in mind. The OHE engaged its hauler, Waste Management Corporation, in this discussion early in the process, and it in turn brought expertise to the investigation from its own healthcare sustainability working group. Influencing the design of healthcare packaging for recyclability requires a much broader stakeholder group, including manufacturers, hospitals, haulers, regulatory agencies and recyclers. This need inspired the birth of the Healthcare Plastics Recycling Council (HPRC) a private technical coalition. Cleveland Clinic hosted the first meeting of HPRC and used a tour of its successful program to convey the challenges, needs and opportunities. An early HPRC deliverable was a white paper capturing and disseminating the knowledge gained from Cleveland Clinic's OR plastics recycling

initiative. HPRC, now well-established, convenes the FDA and device and pharmaceutical manufacturers to find approaches to reduce the variation in packaging materials.

Figure 2 shows a simplified network map of the activity associated with Cleveland Clinic's landfill diversion focus. A cluster of network connections defines the interactions among Cleveland Clinic employees, local vendors, and community agencies that are involved in solving problems and implementing solutions to enable an ongoing increase in diversion rate. A second set of network connections involve the eco-system level activity, in which Cleveland Clinic learns from and contributes to the learning of a consortia of healthcare companies and other organizations involved in generating standards, knowledge, and solutions for the larger healthcare eco-system. Extremely important is that there is an internal network that consists of the Office for a Healthy Environment, Buildings and Properties, Environmental Services, and representatives/subject matter experts from facilities and departments that are impacted by the solutions that are implemented and knowledgeable about requirements and constraints.

[Figure 2 About Here]

Addressing the triple bottom line: Focus on local foods. Building a vibrant, local, food economy is a key element of Sustainable Cleveland 2019, affecting economic, health and ecological outcomes for the region that are critical to Cleveland Clinic's continued success. In fact, Sustainable Cleveland 2019 designated 2012 as the "year of local food." A healthy food system is particularly relevant to healthcare, as it affects the health of patients, employees, and the neighborhoods Cleveland Clinic serves. Its approach to tackling local food procurement is embedded in a rich network of internal and external partners acting synergistically through many different initiatives. OHE has been a catalyst for knowledge generation and initiative development and connecting internal decision makers with this rich network of external relationships.

Cleveland Clinic's embrace of farmers' markets and locally grown food is a clear sign of its desire to benefit the community and region. Cleveland Clinic's Community Farmers Market program, which began with a flagship weekly market at its main campus and a kitchen garden at a regional hospital, has grown to include a Community Supported Agriculture (CSA)¹ program, diversified single farm stands, several kitchen gardens, sponsorships for existing markets and satellite markets in Ohio and at Cleveland Clinic Florida. These diversified delivery models bring healthy, fresh foods into urban and suburban communities, and economically support rural communities. Emphasizing the connection between human and environmental health is core to the messaging approaches, and the program is a joint project of the OHE, the Wellness Institute and Community Outreach Department. The program is overseen by a multi-stakeholder steering committee that is co-chaired by the OHE and Community Outreach, and decisions are made with input from many internal and external stakeholders via its vetting and approval processes.

OHE has focused on evolving the model for hosting such markets, which are intricate partnerships between several organizations. The North Union Farmers Market Association runs the on-site markets, leasing the designated areas for the duration of the markets and addressing all the operating requirements such as securing insurance, managing the supplier base, arranging for live music and other entertainment, and controlling for bees and ants. Government collaboration is critical to ensure proper permitting, market registration, traffic issues, and access for those on food subsidy programs. Cleveland Clinic's operational teams such as parking, police, facilities, grounds keeping, marketing, employee communications, government relations, legal, and foodservice functions all play a role in making the markets function smoothly and safely. Cleveland Clinic also sponsors the North Union Farmers' Market and other area markets, and actively partners with The Ohio State University Extension, Cuyahoga County Food Action Council, Sustainable Cleveland 2019, and many other organizations to foster greater capability in the local farms movement. It works with government to modernize regulations to enable the

¹ Generally a subscription service for individuals to receive weekly boxes of fruits and vegetables directly from a local grower.

markets and access to food subsidy programs at the markets across the region. Leveraging its core competencies, Cleveland Clinic provides on-site health promotion information and free health screenings at the markets. The flagship market continues to grow and thrive, completing its fifth season in 2012.

Another network vector involves increasing the local food content in Cleveland Clinic's various food services. Through tracking and emphasizing this goal with vendors, local food content grew from 6% in 2008 to 11.6 % in 2011. Vendors achieved this through establishing direct-to-farm relationships, coops, and local distribution networks, and use of the Localcrop.com website, which connects restaurants, foodservice operators, and other institutions to farmers within 250 miles. To prepare for a new foodservice contract to be awarded in 2012, the OHE took part in developing a clinic-wide Foodservice and Nutrition Charter, a comprehensive document with the guiding goal to improve the patient food experience. The committee included clinical dietetics representatives, the Wellness Institute, Facilities, Environmental Services, Patient Experience, Finance, SCM, OHE and Hospitality Management. It was established to author the charter, and to review it annually. The Charter, and the subsequent contract based on it, includes local food mandates for the contracted foodservice vendor, as well as energy efficiency, safer chemicals, and reporting requirements for all food service operations including for vending machines and office coffee programs.

The contract sets hard targets for annual incremental increases to the percentage of local food that can only be achieved if the capability of the local foods industry increases, particularly the capacity of small local farmers to deal with the organizational and regulatory aspects of selling to institutions. Toward that end Cleveland Clinic has members on various Sustainable Cleveland 2019 task forces and initiatives. It supports governmental measures to simplify the burden on small farmers, and strives to create demand for and awareness of healthy foods in the community.

The local food focus has complex triple bottom line implications —both for Cleveland Clinic and for its communities. The initiative stimulates the local farming economy and reduces the pollution entailed in transporting food. Healthier, fresher food is provided to patients and is available to employees, families and the surrounding community. The patient experience, the health of the community

and underlying diet-related causes of healthcare costs, the health of employees, and the local economy should all be affected through this initiative.

Figure 3 illustrates the network of connections involved in the healthy foods focus. Here we see two cross organizational sub-networks, one relating to the farmers market activities and another for the internal adoption of local foods. These both connect to the Cleveland 2019 initiative, which in turn involves hundreds of participants and scores of projects throughout the city. Activation of this network for learning, accessing resources, and collaborating is essential both to the organization's ability to accomplish its healthy foods goals and to contribute to Cleveland's revitalization. Moving this focus forward requires a strong internal network with many external network connections.

[Figure 3 About Here]

Multi-organizational community transformation: Participation in the Evergreen Initiative.

Designed to leverage the strengths of anchor institutions in the urban core, the Cleveland Foundation's Greater University Circle Initiative takes a multi-faceted approach to urban revitalization, including physical development, infrastructure, and wealth creation. University Circle is a major center for economic activity on Cleveland's east side, but is surrounded by residential neighborhoods with alarming rates of poverty and disinvestment. Cleveland Clinic, and other education, medical and community institutions in this area, as well as the City of Cleveland itself, committed to becoming "anchor institutions" at the outset of the initiative in 2006. Numerous land development projects, transit system improvements and community-wealth-building projects have resulted from this collaborative approach to identify opportunities and leverage network strengths. One example is the launch of the Evergreen Cooperative Initiative.

Anchor institutions' buying power was notably ineffective in providing employment and wealth-building opportunities in their immediate community. Evergreen Cooperatives are for-profit, environmentally, socially and economically sustainable, employee-owned cooperative businesses that are

designed in response to specific anchor needs. Each cooperative is designed to fulfill the vision of generating place-based, living-wage, equity-building employment to begin to break the cycle of poverty in these low-income neighborhoods.

Evergreen's vision and blueprint were generated through multi-stakeholder leadership roundtables with extensive input from many stakeholders across the city. The initiative was sponsored by three local foundations, the Cleveland Foundation, the Gund Foundation, and Sisters of Charity, and has been strongly supported by the City of Cleveland. The initial roundtables and the generation of the business and development models drew on expertise from a myriad of sectors, organizations, and individuals. Extensive organizing help from the Democracy Coalition of the University of Maryland, which led the initial feasibility investigations, helped develop the model to link anchor organizations' supply chains to these new businesses. Specialty organizations became involved to provide financial, legal and grant-writing expertise and support, and domain support for the new businesses. Anchors provided seed funding at the outset of the initiative and provide ongoing support and expertise for the creation of Evergreen Cooperative businesses. They are asked to identify gaps in their supply chain that can be met locally, to co-design the business model and processes, and commit to purchase goods and services from proposed cooperative businesses prior to launching the business.

Three Evergreen Cooperative businesses are now up and running, with several more under development. Each is expected to grow to provide more than 50 safe, clean and stable jobs for the area, as well as an employee ownership interest. The **Evergreen Cooperative Laundry** provides a green laundry service primarily for long term care facilities and nursing homes—one that uses two-thirds fewer gallons of water per pound of laundry compared to other industrial strength laundries in the region, with competitive prices. **Evergreen Energy Solutions**, conceived of by Cleveland Clinic, provides home weatherization services and installs, owns, and maintains large-scale solar panels on the roofs of large education and healthcare buildings. As originator of this cooperative concept, Cleveland Clinic was its first customer. Starting in the spring of 2013, **Green City Grocers** will provide hydroponically grown

lettuce and 300,000 herbs to local foodservices from a 230,000 square-foot greenhouse. Evergreen's goal is to produce ten companies and 500 jobs in the first five years, and up to 5,000 jobs in the first decade.

Cleveland Clinic's involvement in Evergreen is a future-oriented investment in a robust community eco-system, an investment that recognizes its tight interdependency with the community in which its flagship health delivery and research campus is located. Evergreen is the most experimental of the approaches described in this chapter, and there are many unknowns that will be confronted. The participants will have to continually learn in order to incubate and sustainably embed many cooperative, local, employee-owned green businesses into the supply chains of the local highly knowledge-based economy.

Cleveland Clinic is also leading a community development initiative that builds on its preeminent position in cardiac medicine and research, and its history as a technology innovator in this field. The Global Cardiovascular Innovation Center (GCIC) is a product development consortium of clinical, academic and neighborhood economic development institutions whose mission is to develop, incubate and commercialize cardiovascular technology. This 501c3 (tax exempt) organization, funded by a grant from the State of Ohio's Third Frontier program, was established in 2007. Its goal is to attract, develop, incubate and retain 40 new companies. To date 17 companies have been attracted and have brought 525 new professional and skilled jobs to the state. Facilities include a new, LEED® Gold Certified incubator facility adjacent to, and a pre-clinical research facility located directly on, Cleveland Clinic's main campus. This is another example where Cleveland Clinic has collaborated with—in this case, pulled together -- many stakeholders to have a major positive economic and social impact on the City of Cleveland, while simultaneously addressing its own strategic challenges and social, economic and environmental sustainability.

SUMMARY

The initiatives described above illustrate the wide variety of approaches being used at Cleveland Clinic to simultaneously focus on its ecological, social, and financial viability, and on the health of the context in

which it operates. By building strong internal information and action connections , a network of actors has emerged who are gaining knowledge about sustainability and can serve as champions, designers, implementers and supporters of new approaches. Cleveland Clinic’s capability to change internal operating processes has also grown, fostering innovation and flexibility.

The robust internal network provides natural connection points to external knowledge that can be incorporated into Cleveland Clinic’s practices. Through participation in external networks, it also contributes knowledge to help build the capabilities of its supply chain, the healthcare sector, and its community. For example, when members of Cleveland Clinic’s Facilities Team participate in the Department of Energy Hospital Energy Alliance and its national task teams pursuing advanced energy solutions for healthcare, they are developing and disseminating knowledge for the sector. When the OHE partnered with and acted as an alpha site for Practice Greenhealth to develop its initial waste tracking and metrics system, this knowledge in turn became available to be incorporated into other healthcare organizations’ measurement systems via Practice Greenhealth’s established network.

The OHE encourages people throughout the organization to connect with externally generated knowledge. For example, all facilities participate in Practice Greenhealth’s annual Environmental Excellence Awards program. This process keeps them focused on what is going on in the broader environment, challenges them to maintain local internal sustainability networks, and embeds accountability for making progress.

Table 1 depicts three stages of sustainability capability development, with particular focus on the connections that have been built and the purposes they have served. Although recently becoming more intent on leveraging resources and knowledge across the organization, Cleveland Clinic is operationally quite decentralized, and the OHE has faced the task of catalyzing change without formal authority. Initially, the focus of the OHE was on building an infrastructure to: 1) promote awareness of baseline performance and of opportunities to improve ecological outcomes; 2) connect with the external environment for knowledge of how to proceed; and 3) build connections across the organization to foster the flow of knowledge and to stimulate local activity.

[Table 1 about here]

As the OHE built its own expertise, it strengthened its network connections and moved into a second stage when it began to catalyze and support initiatives that involved increasingly complex teams of contributors, and multiple sources of expertise. It focused on initiatives that would have enterprise – wide and triple-bottom line impact, and that entailed changes to operating practices. Making significant progress in areas like landfill diversion entailed reaching into the external environment and catalyzing and participating in coordinated activity and knowledge generation across multiple organizations.

In the third stage, the focus on a healthy environment has become more fully integrated, with enterprise-wide goals and ongoing reporting of progress against them. An enterprise level green team has worked with the OHE to promote system-wide coherency, and the OHE has worked aggressively to build an expanded network of internal experts who can effect change in the system. Simultaneously, the organization has engaged in community wide and industry wide consortia and partnerships to increase the capacity for sustainability at these broader levels—and simultaneously enable its own sustainability.

Progress and Accomplishments

Cleveland Clinic has made steady progress against its healthy environment targets. In the period between 2007 and 2012, it has achieved:

- 30% landfill diversion rate at main campus in 2011, up from less than 10% in 2007
- 11.6% of retail food procured locally in 2011, up from 6% in 2008
- 10% improvement in overall fuel efficiency of internal vehicle fleet in 2011
- 13 LEED certified projects (10 New Construction; 3 Commercial Interiors)
- 11 ENERGY STAR certified buildings

In addition, Cleveland Clinic has been recognized as an Environmental Leader, for its Partnership activities, and for its capability development and accomplishments:

- EPA ENERGY STAR Partner of the Year 2011, 2012, 2013
- A Partner in the Better Buildings Challenge with a goal of 20% reduction in portfolio energy intensity (energy consumption per square foot) by 2020
- Practice Greenhealth Environmental Excellence Award winners in 2012:
 - Environmental Leadership Award (highest honor), Cleveland Clinic Main Campus
 - System for Change Award, Cleveland Clinic
 - 28 additional individual facility awards

In May 2012, Cleveland Clinic released its first GRI report, ushering in a new era of transparency around its corporate social responsibility programs and approach. The report addresses component elements with both measurements and qualitative descriptions of initiatives, and of the processes in place to continue to make progress against the environmental and social outcomes that are inherent in the reporting system.

This report can be accessed at <http://www.clevelandclinic.org/unglobalcompact>.

DISCUSSION

Discussions of organizational sustainability often focus on large, visible initiatives that result in dramatic improvements in organizations' ecological and/or social footprints. Yet there is also a need to build system-wide capability to operate in new ways to foster sustainable outcomes and to work synergistically with other organizations to create sustainable eco-systems and communities. The Cleveland Clinic case has provided the opportunity to examine the role that network connections play in developing sustainability capability.

The OHE knew that capability had to be built throughout the 40,000 person organization. Like most organizations setting out to become sustainable, Cleveland Clinic did not have all the knowledge necessary to make fundamental changes to how it manages its various resource streams of energy, food,

and water, or to reduce waste, pollution and toxicity inherent in its supply chain and its operating practices. It set out on a journey to pull knowledge from advocacy organizations and other healthcare systems and companies outside the healthcare sector already making progress in this area to develop internal expertise and then to apply gained knowledge and develop solutions that are material to and tailored for healthcare. It also set about embedding the focus on and accountability for sustainability outcomes in the organization and in its relationship with the community.

The case illustrates stages of capability building. The initial stage of the journey was aimed at establishing awareness, and creating a network of facility green teams that started to work on local initiatives. This initial stage also entailed infrastructure development, including building the talent and knowledge of the OHE itself, developing connections to rapidly learn from external groups, and beginning to build organizational systems for measurement, communication, and education. During the subsequent years the OHE partnered with various leaders in the organization and the community to develop and implement initiatives to make significant headway in targeted areas such as landfill diversion. Gradually sustainability became more deeply embedded in the organization's management system, and in partnerships with the community and with industry consortia to make progress toward sustainability not only of Cleveland Clinic itself, but also in its contexts.

The OHE realized that system-wide change could not be achieved by relying mainly on the energies, knowledge, and orchestration from a small central staff group. From the outset, it charted a course to get the organization to the point where it took advantage of energy in the system and partnered with, coached, and supported others—a course that entailed building expertise and connections throughout the organization and with the external environment. This strategy has recently been augmented by the EcoCaregiver™ program that formalizes sustainability knowledge and creates a network of experts. The network infrastructure of green teams and the increasing number of initiatives that cut across the divisions of Cleveland Clinic allow the parts of the organization to come together to learn from each other, develop common understandings and coordinated action, and to link dispersed activities to the enterprise strategy. This supports Coleman's (1990) notion that linkages not only allow

social exchange, but also promote social cohesion around common purposes. This would seem to be particularly important in a transition that entails expansion of the purposes of the organization.

Cleveland Clinic's experience demonstrates the interdependence of external and internal networks in the capability development process so that internal knowledge can be combined with the external knowledge to generate solutions that fit the system (Cohen & Levinthal, 1990). Successfully integrating local foods procurement, for example, required combining new knowledge about local farming and farmers' markets with its deep knowledge of food procurement regulations for healthcare settings and of dietary and food consumption patterns and restrictions and preferences for patients and employees. Knowledge flows in many directions. Local farmers need to learn about institutional practices and constraints of healthcare institutions in order to develop the capability to supply them. They also have to develop new business capabilities, aided by the knowledge and tools provided by the Farmer's Market Association. Cleveland Clinic's impact in the arena of local foods depends on the knowledge and learning that emerges through interaction and exchange among a complex network of participants.

An implication of this case is that developing and drawing on rich networks for knowledge exchange and action is in itself a sustainability capability. The ongoing quest for sustainable organizations, communities and industries will require continual innovation and knowledge development, and will play out through the combination of knowledge from many stakeholders. The network connections are dynamic and multi-purposed, and vary in their level of intensity and formality. Fitting with Hansen's (1998) findings, for a period of time when new approaches are being developed, there are tight working connections between various network actors. Other connections such as between green teams that assemble to learn from each other or share information through shared web sites, or connections made through attendance at conferences, may be looser and characterized by periodic sharing of knowledge rather than close working relationships. Many network connections may be latent, available to be called on should the need arise.

Given the amount of knowledge and solution development required to become more sustainable, the transition cannot be understood as a set of straightforward one-off contractual processes between Cleveland Clinic and its suppliers and partners; rather, it entails mutual exchange of knowledge and solution generation, and often a gradual unfolding of new approaches and shifting of the nature of the relationships between actors in the network. Advances often occur through co-development processes with suppliers or sets of suppliers, and/or among consortia of stakeholders. New knowledge often unfolds through time, as solutions are tested and improved. As solutions are developed, new practices do become embodied in contracts and formal expectations between the actors, as in the waste management and foods contracts, but the informal mutual exploration that occurs at the onset lays the foundation for this formalization.

The interdependence of the sustainability of an organization and its context, and the need for organizations to approach sustainability in relationship to the eco-systems in which they operate were quite evident in the case. After facing decades of economic, social, and ecological challenges, the City of Cleveland was putting great emphasis on shaping a vibrant, sustainable region--a Green City on a Blue Lake. It was apparent that helping address the city's challenges was part of Cleveland Clinic's own challenges for a sustainably effective future. And vice versa: the city's vision of transformation will not be possible without the partnership and leadership of the region's stakeholders, including its largest employer. On a larger scale, sector change will be required to achieve momentum in healthcare's supply chain and environmental regulations, and co-learning and innovation will be required to accelerate the transition in this sector that is currently seen as contributing to the very health problems it exists to treat and cure. Promoting wellness rather than focusing exclusively on treating illness requires that the organization step out of its comfort domain and address issues well beyond its traditional boundaries. The demographic and fiscal crisis currently facing healthcare in developed nations has made it clear that the sustainability of healthcare organizations is integrally related to the economic and social health of the communities in which they operate and of society and the industry as a whole (Mohrman & Shani, 2012).

Healthcare organizations striving to be more sustainable in today's shifting environment should recognize that this constitutes a new purpose for the organization and a new capability. The journey will never be complete, as knowledge will continue to grow and the eco-system will continue to evolve. Sustainability expertise, including network building and change leadership capacity, must be explicitly defined and developed across the organization, and become added to the traditional set of managerial and technical competencies in the organization. This transition requires the goal-setting, measurement, and accountability infrastructure to make sustainability improvement an expected part of the way the organization operates, and not a set of special initiatives.

Intentionally building rich, dynamic internal and external networks provides the pathways and connections for various actors to combine their knowledge to generate and implement sustainability solutions. Networks also contribute to social cohesion with respect to the expanded purpose of the organization. A center of excellence, such as the OHE, can orchestrate the development of this new capability, but responsibility for outcomes and involvement in designing and implementing sustainable approaches must be pervasive.

The organization will have to develop ways to resource, motivate, and govern activities that do not fall neatly into its functional and business unit delineations, and that extend beyond the boundaries of the organization. It will have to become facile at setting up cross enterprise governance bodies such as Cleveland Clinic's energy team, the enterprise-wide green team, and the local foods team that encourage change from within while aligning various functions and facilities around coherent approaches. It will have to prioritize and operate effectively in multi-stakeholder forums and multi-organizational initiatives. Achieving sustainable functioning requires organizational leaders to focus the organization not only on its short-term operating and financial outcomes, but also on building a sustainable organization and contributing to the social and ecological sustainability of the world.

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Table 1

**The Healthy Environment Focus:
Stages of Capability Development at Cleveland Clinic**

	<i>Early awareness and Initial infrastructure in a decentralized system</i>	<i>Expanding and deepening knowledge and focus , and expanding the network of connections</i>	<i>Increasing the internal and external integration of Cleveland Clinic’s Healthy Environment focus</i>
Office of Healthy Environment (OHE)	<p>OHE established to chart a course forward to become a healthcare sustainability leader</p> <p>Begins as a one-person office</p> <p>Starts building connections across a decentralized system</p>	<p>OHE expands to include technical, business and social expertise</p> <p>Builds internal and external linkages for projects/action and learning</p> <p>Active in professional associations and consortia</p>	<p>System-wide accountability to achieve enterprise goals</p> <p>Develops deep linkages to the Sustainable Cleveland 2019 Initiatives</p> <p>Cleveland Clinic signs the UN Global Compact</p>
Communication and Measurement	<p>Communication systems established for sharing of knowledge, information, and news about sustainability activities</p> <p>Begins baseline and ongoing measurement to focus attention on sustainability</p>	<p>Tailoring communication systems to different stakeholders</p> <p>Evolving the measurement system and adding reporting elements</p>	<p>Enterprise goals established</p> <p>Tracking metrics to all units</p> <p>Reporting integrated into enterprise dashboard</p> <p>Alignment with external standards through GRI reporting</p>
Building Internal Network Linkages	<p>Facility Green Teams established- convene for knowledge sharing and best practice awareness</p> <p>Decentralized initiatives aimed at “low hanging fruit”—bottoms up goal setting</p> <p>OHE partners with internal stakeholders around specific initiatives</p>	<p>Increased cross-unit and cross-functional project linkages—project teams going beyond the low hanging fruit: e.g.,</p> <ul style="list-style-type: none"> • Farmer’s market team • Energy team • Transportation emissions reduction <p>OHE partners with internal stakeholders around system-wide initiatives</p>	<p>System-wide Green Team provides input about priorities and seeks coherency and synergy across the system</p> <p>System-wide team develops Food Service and Nutrition Charter</p> <p>Expanded Energy Team develops a master plan for the organization</p> <p>3 R’s process for redesigning work processes for sustainability</p>

			EcoCaregiver™ : Building an expansive network of sustainability experts across the organization
Building External Network Linkages	<p>Attending conferences</p> <p>Membership in consortia and professional societies</p> <p>Linkages to community resources</p>	<p>Connections with and among vendors to develop capability for a sustainable supply chain</p> <p>Participation in Sustainable Cleveland 2019 activities</p> <p>Leadership roles in industry initiatives such as plastics recycling</p>	<p>Many departments involved in the complex networks of inter-organizational initiatives: e.g.,</p> <ul style="list-style-type: none"> • Cleveland’s local foods focus • Evergreen initiative working with foundations, government, other healthcare organizations, universities, and other stakeholders to develop sustainable employee-owned local businesses in declining neighborhoods.

Figure 1

The Web of Connections

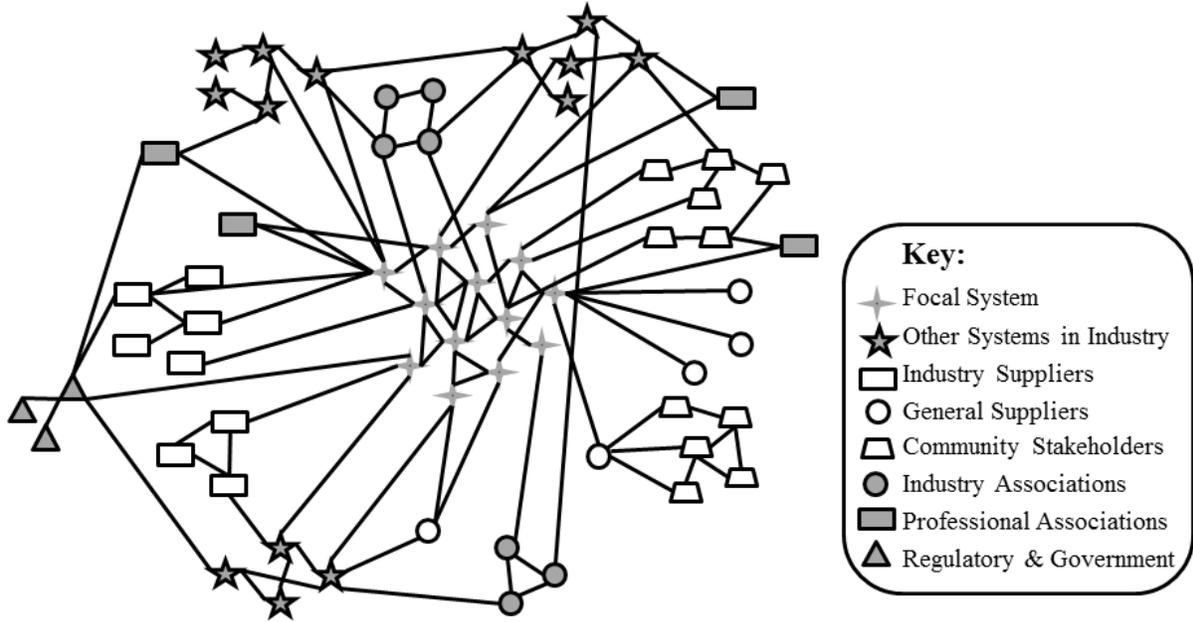


Figure 2

Simplified Landfill Diversion Network

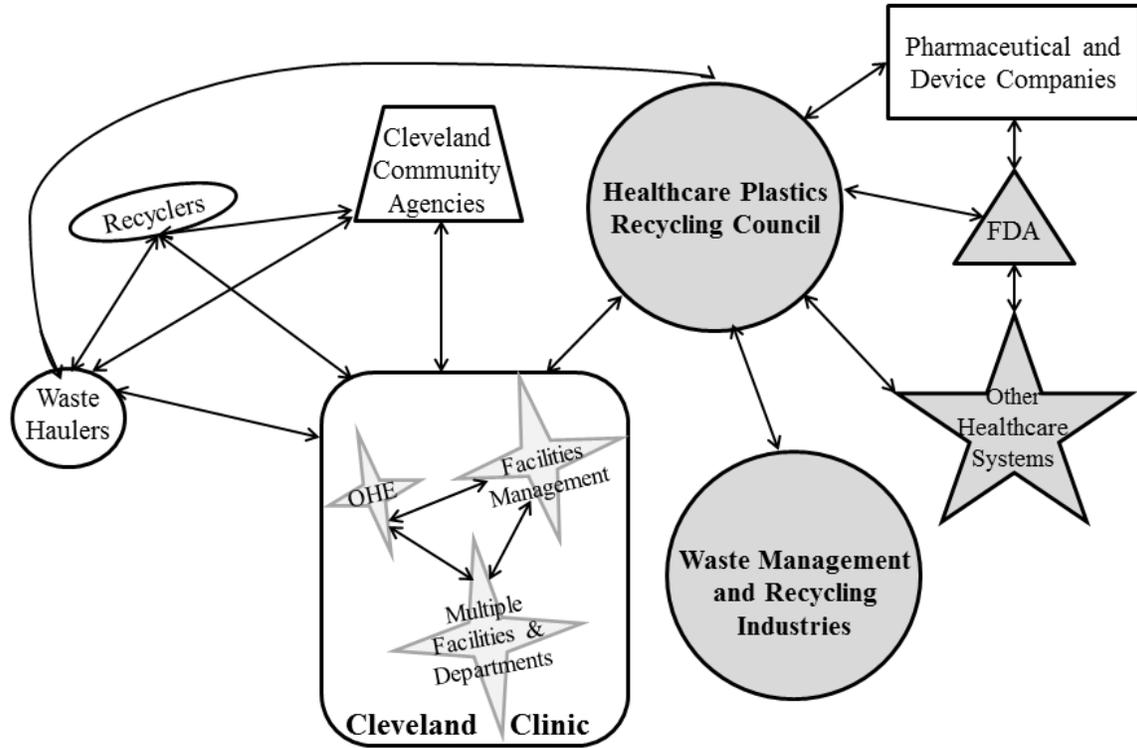


Figure 3

Simplified Healthy Food Network

