

The Role of Business in Shaping the City of Tomorrow



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How Business Is Shaping the City of Tomorrow

By Hanna Felleke and Stephen Jordan,
U.S. Chamber of Commerce Business Civic Leadership Center

The Business Civic Leadership Center (BCLC) is undertaking a series of reports on how business intersects with key social and environmental issues. This report on the role of business in shaping the city of tomorrow reflects a baseline of BCLC's research on business practices in this space. This report focuses on seven topics related to reimagining urban environments: mobility, built environment, energy, sanitation, housing, poverty, and working with public and nonprofit partners. Throughout the report you will read business case studies on these indicators.

The City of Tomorrow

Cities are rapidly evolving. According to the United Nations, between 1900 and 2008, the proportion of urban residents increased from a mere 13% to more than 50% around the globe. Also according to the United Nations, 92% of the world's urban growth in the next two decades will be absorbed by cities of the developing world. In Africa and Asia, the urban



population will double between 2000 and 2030.

These rapid changes are going to continue. Consider some of the ways the world will be different in our near future:

- By 2025—Access to primary education among youth is projected to be nearly universal in the major developing countries of Latin America, most of Asia, and well over half of the countries in Africa.
- By 2025—One hundred thirty-six new cities are expected to enter the top 600 gross domestic product-producing urban centers, all of them from the developing world, and overwhelmingly—100 new cities—from China.
- By 2030—The number of overweight and obese adults globally is projected to be 1.35 billion and 573 million, respectively.
- By 2030—China and India's demand for energy is projected to nearly double, while demand in the rest of the world will increase by 30%.
- By 2030—Air freight might triple, and port handling of maritime containers worldwide might quadruple.

These are just some of the changes we can expect. Urban environments are likely going to be larger, more diverse, and more stressed by above-average demographic shifts and migrations. Rome, Paris, London, New York, and Chicago are examples of cities that have adapted to urban dynamism



over the years. Many of these changes are due to public sector decisions, but an often overlooked factor is the significant role that businesses play in helping cities adapt to their changing circumstances.

Businesses are contributing to adaptation through their operating activities and investments, and in particular through commercializing innovations and technology. Here is just a sample of how business may shape our urban communities:

- Traditional modes of transportation will be joined by hybrid solutions like zipcars, car2go, self-driving cars, and more customized mass transit solutions.
- Highways will become smarter, while traffic congestion will be priced more efficiently.
- Buildings will be interactive, modulating ambient temperatures in different rooms in a more customized fashion and conserving energy more efficiently.
- There are a number of companies working on solutions to bridge the “digital divide,” expanding internet access globally.

- Cities will develop multiple layers of commerce by supporting a “buy local” sentiment while hosting many national brands; examples include Atlanta, New Orleans, and San Francisco.
- The virtual office will become more omnipresent, with home office solutions becoming widespread.
- Cities like Abu Dhabi, Kuala Lumpur, Jakarta, Shanghai, and Hong Kong are investing in vertical development, with new building materials and engineering solutions enabling urban designs that were not feasible even a decade ago.

Overview

Imagining the urban future, businesses are driven to design products and services that work on a human scale and that are easy to adopt and maintain. Some cities are already integrating technology into every aspect of the community to meet the needs of their residents and workers. Examples include Songdo, South Korea (which you will read about in this report) and Masdar City, UAE.

INTRODUCTION AND OVERVIEW



This report shows that the impact of business on the future of cities will be rich and varied. It includes—

- The products and solutions that Siemens is offering as a technology pioneer and how mayors and urban planners partner with the company.
- How Air Products and Chemicals, Inc., is demonstrating a low-cost hydrogen fueling delivery/station concept that reduces the capital and operating cost at the point of use of the fuel

and provides hydrogen at pricing that is attractive for a number of fuel cell-based transportation applications, starting with light-duty vehicles.

- How Veolia Water has developed a tool to help city decision makers evaluate the relative water resource impacts of their decisions.
- PNC's philanthropic focus on education, a key driver to maintaining a competitive economy.
- A program developed by The Ritz-Carlton Hotel Company to develop skilled workers to fill essential roles in manufacturing and other industries.

Urbanization is an unstoppable phenomenon. Globally, communities will need to prepare for the challenges and opportunities that it generates. We hope that you will come away from this report, as we have, with a much richer understanding of the complex interaction between business and environmental factors, and an appreciation for the thousands of business-driven professionals who are at the leading edge of win-win solutions.



Creating a Global Model for Urban Transformation

By Tom Murcott, Executive Vice President,
Global Foreign Investment, Gale International



Introduction

In 2010 the United Nations' World Urbanization Prospects Report stated that the earth's population was officially more urban than rural. In the past few decades, an unprecedented number of people have relocated to urban areas in search of opportunity and economic advancement. The phenomenon of the world's growing cities has potential downside effects, such as overcrowded living spaces and overburdened infrastructure as a result of the demands of rapid urbanization. To accommodate burgeoning urban populations and in an effort to address the resulting challenges in the areas of transport, housing, and infrastructure, countries around the world have embarked on ambitious development projects. Many of these projects are headed by municipal or regional governments, often in partnership with private development companies.

Gale International: Master Planner and City-Builder

Gale International is a real estate development and investment company that has led the way for large-scale city development. A pioneer in greenfield master-planned development, New York-based Gale International serves as the principal developer behind the \$35 billion city-scale project known as Songdo International Business District (IBD), situated on the western coast of South Korea. Together with its domestic partner, POSCO Engineering and Construction (E&C), and its public sector partner, Incheon Metropolitan City, Gale International is leading the largest Korea-U.S. joint real estate venture in history. This unique public-private sector partnership has created thousands of jobs on the Korean peninsula and infused vitality into the local Incheon Metropolitan City economy.



Master-Planned Cities and Their Advantages

The benefits of the master-planned city are manifold. Although much urban renewal involves retrofitting existing cities to meet the needs of swelling urban populations, the cost savings created by constructing and operating greenfield cities cannot be ignored. Moreover, Gale International's master-planning process takes into account not only efficient resource monitoring and cost-saving measures in construction and operations, but also the needs of the future city. A well-executed master plan, as evidenced in Songdo IBD, can ably address the city's present realities and prepare it to meet future demands. This must be done while fostering true vitality by leveraging and incorporating the unique aspects of local culture.

Two features of master-planned city-scale development, as envisioned by Gale International, are especially crucial: the functioning of a technology-enabled society and the creation of an environmentally sustainable city. Unlike older cities where

updated technologies need to be retrofitted at great cost to the municipal government and citizens, Songdo IBD's technology platform is being designed and implemented by U.Life Solutions, a joint venture with Cisco Systems, Gale International, POSCO E&C, and LGCNS. As a result of this partnership, the technology backbone is being integrated from the planning and construction phase. The U.Life platform provides citizen services including government, health care, education, social networking, and leisure. For example, Songdo citizens will be able to remotely monitor and control their home's daily energy use. Smart health care networks will ensure prompt and secure access to medical records and on-demand health care services. On a citywide scale, Cisco's integrated operations centers will utilize sensors built-in throughout the city to monitor transportation, utilities, telecommunications, safety and security, and emergency response.

Environmental sustainability serves as the second building block for a master-planned city. For the municipality and its residents, this preserves precious water supplies, increases energy efficiency, improves citizens' health, and decreases traffic congestion, ultimately providing a better quality of life. In Songdo, all buildings are built to or above ASHRAE standards, an internationally recognized benchmark of design quality. A built-in centralized pneumatic waste system collects wet and dry waste, eliminating the need for waste removal vehicles (and their carbon emissions). The Songdo Central Park canal uses seawater instead of freshwater, saving thousands of liters of potable water per day. Reclaimed storm water and treated gray water are reused for irrigation and other purposes, and vegetated green roofs mitigate the heat island effect that plagues other cities. The original Songdo IBD master plan called for 40% of total area to be reserved for green space, and today the city's 60,000 residents enjoy the 100-acre Central Park and numerous pocket parks that dot the landscape. Twenty-five kilometers

of bicycle lanes make it possible to easily access both school and work, and to traverse the whole city within a matter of minutes. The city is one of the first in the world to apply U.S. green building standards to a project of this scale, and to date it boasts more than 13 million square feet of green space, as certified by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Certification System.

In all of the city-scale projects that the company has undertaken, Gale International and its development partners hold both technology-enabled planning and environmentally sustainable design as core principles. The team has applied many of the lessons learned from the Songdo IBD project to other city-scale projects around the world. In 2010, Gale International was engaged to create the master plan for a 140 million sq. ft. business district in Hunan Province, China. This project is proceeding under the leadership of the Changsha municipal government.

Conclusion

The 21st century has been called the "age of the city." Cities create opportunities for their residents and workers. They serve as drivers of economic growth, incubators for innovation, and concentrated centers of political, cultural, and societal influence. Gale International is proud to be at the forefront of city-scale development, creating award-winning cities and urban areas that transform the human experience and provide economic vitality to the region. The company is building on the strong master-plan platform that affords a superior quality of life, enabled by technology and enhanced by an environmentally responsible sustainability program. Gale International is committed to planning and executing cities that will stand the test of time, for the true measure of any metropolis's legacy is gauged not in decades, but in generations.



Case Study

Gale International

Best Practice

Gale International and POSCO E&C serve as the co-developers of the \$35 billion city-scale project called Songdo International Business District (Songdo IBD) in the Republic of Korea. With an expected completion date of 2016, Songdo IBD currently has more than 22,000 residents housed within its 1,500 acres and more than 25,000 people who work in Songdo on a daily basis.

Outcomes

Technology-enabled society: Powered by Cisco's Smart + Connected Communities system and enabled by U.Life Solutions (a joint venture company formed with Cisco in 2011), the built-in technology infrastructure will allow Songdo residents to monitor daily energy use and control home and office systems remotely. Songdo IBD will serve as a "living lab" where technology is constantly changing and evolving to meet the needs of end-users—the city's residents and workers.

Sustainable society: Songdo IBD has established itself as a world leader in USGBC LEED-certified development, the foremost international program for the design, construction, and operation of green buildings. As of July 2012, Songdo IBD has more than 13 million square feet of LEED-certified space, including the first LEED-certified exhibit hall in Asia (the Convensia Convention Center), as well as the Republic of Korea's first LEED-certified residential tower (Central Park I), hotel (Incheon Sheraton Hotel), and school (Chadwick International School Songdo). By the project's completion, 80% of all buildings will be LEED-certified.

Lessons Learned

Songdo IBD is proof that in order to design, plan, and build a new "smart, sustainable" city, both public sector and private sector commitment and contributions are required. Gale International, together with its domestic partner POSCO Engineering and Construction, and its public sector partner, Incheon Metropolitan City, is building a city that will serve as the Northeast Asia region's innovation center and hub of commerce. For more than 10 years this successful public-private partnership has led the largest joint Korea-U.S. real estate endeavor in history, and it remains firmly committed to seeing the Songdo IBD project through to its successful completion.



Cities Are the Engines of Progress

By Daryl Dulaney, CEO,
Siemens Industry, Inc.



Cities are a hallmark of human progress. From the Greek polis to contemporary megacities like Mexico City, Shanghai, and New York, cities have traditionally been centers of art and culture, trade and industry, science and technology. Approximately 50% of global economic output is generated in the world's 600 biggest cities alone. Yet the negative effects of progress have also been most evident in cities: noise, overcrowding, environmental pollution, and traffic congestion.

Two hundred years ago, only 3% of the world's population lived in cities. Today the total has grown to more than half, and as the trend continues to accelerate, urban problems have kept pace. Cities now produce 80% of the world's greenhouse gas emissions and consume 75% of its energy.

People already consume more resources than our planet can provide over the long term. In light of the growing world population—by 2050, more than 9 billion people are expected to inhabit the earth—achieving sustainable development is crucial. To ensure our collective future, we must substantially reduce consumption of energy and resources. And we must begin these efforts in cities, as they hold the key to the future.

Many major cities around the globe have acknowledged this fact and have responded by setting goals to protect the climate. London, for example, aims to slash its carbon emissions nearly 60% by 2025. Denmark's capital Copenhagen plans to cut its carbon emissions to zero by 2025. Munich wants to produce enough green power in its own power plants to ensure that it can meet all of its citizens' household needs with renewable sources by 2014 and the city's total energy needs by 2025.



And none of these goals are out of reach. Energy consumption and CO₂ emissions can already be drastically reduced using today's technologies. Buildings, for example, use roughly 40% of the world's energy. By intelligently integrating their lighting, data, climate, and security systems, we can reduce this consumption by up to 40%.

However, moving cities toward more sustainable practices will come at a cost. Consultants estimate that worldwide investments by communities in the development and expansion of streets and rail links, communication networks, water, and power supplies will amount to around \$40 trillion over the next 20 years. How can cities afford this?

Offering tailored solutions means not only exploring new technical paths, but also providing innovative and flexible financing options. Let's stay for a moment with the example of optimized energy consumption for buildings. For many cities and communities, this is a major lever for reducing energy consumption and carbon emissions. Although municipal

funds are in short supply, today cities can modernize buildings and manage operational performance with little to no upfront capital investment.

With an energy performance contracting plan, city planners can finance equipment and automation upgrades without capital outlay and have system performance guaranteed by a company like Siemens. To date, we have already improved the performance of more than 6,500 buildings worldwide using this business model. The result: savings of \$3 billion and a CO₂ abatement of more than 9 million tons, which equals the annual CO₂ emissions of a city like Munich.

In the U.S., Bay City, Texas, is using an energy performance contract with Siemens to reduce electricity consumption by nearly 30% and water use by more than 70% over 15 years.

This is just the beginning. In the coming years, Masdar City in the desert of Abu Dhabi will demonstrate what is already technologically possible. It will be the first CO₂-neutral city in the world and use so little energy that all its needs can be locally produced without net emissions—for around 40,000 residents and up to 50,000 commuters.

These efforts are not just about the application and optimized integration of existing technologies, but also about developing visionary ideas for the future of cities. Here, there are no limits to the creativity of researchers. Multistory greenhouses in cities could help supply the growing world population with food and also slow global warming. New facade coatings could use the principle of photosynthesis and in the future directly extract carbon dioxide from the atmosphere and convert it to other organic carbon compounds like methanol. Ceilings and walls in houses could be lined with illuminating synthetic materials to provide an innovative lighting experience while consuming only one-fifth of the electricity required by conventional light bulbs.

These examples show that today's technologies can set many levers in motion to move cities toward eliminating their CO₂ emissions. If urban developers rigorously adopt environmental technologies, they could achieve a viable balance between growth and the sparing use of resources. And this isn't necessarily linked with higher costs, but in fact can help save costs over the long term.

One thing is clear: As evidenced in the past and made clear in the present, progress is being defined and shaped by and in cities around the world. The transition to a culture of sustainability will be the great challenge in the coming decades. This doesn't mean that we must do without, but rather that we must be prepared to think of new possibilities and remain open to new ideas. This transition can succeed only in and with cities. Siemens has always seen itself as a technology pioneer. And we see the mayors and urban planners of cities around the world as our partners and pioneers of the future.



Reimagining Mobility in the City of Tomorrow

By Andreas Leo, Corporate Communications, car2go GmbH

Cities are rapidly changing due to multiple factors and the business community is contributing to this evolution through a variety of means. Looking ahead, the city of tomorrow will have more concurrent infrastructures than ever before where improved transportation systems will have a significant impact on lifestyle. Neither cars nor trains nor buses will become obsolete, but they will be joined by newly customized transit solutions.

Urbanization patterns differ in the developed and developing world. For example, in the United States as the industrial economy emerged, large migration movements and motorization occurred in urban areas. Suburban sprawl developed as a response to population density and access to goods and services. In developing economies, urbanization has developed without a rapid rate of motorization. Therefore the transit systems available in that city are supporting a large population.

Intelligent Transport Systems (ITS) is currently driving innovations in vehicular, rail and air traffic management. ITS systems have been driven by increased population and rapid rates of urbanization. As more people move to cities, modes of transportation become congested which leads to traffic, pollution, increased fuel consumption, and an inefficient transportation infrastructure.

Car2go, a wholly-owned subsidiary of Daimler AG, promotes a strong sense of sustainability and responsibility to its products, operations, people, business partners, and society in general. As the inventor of the automobile, sustainable mobility is of top priority for Daimler.



Through new technologies we are continually reducing the fuel consumption and emissions of our car2go vehicle network. Our success is due in large part to the fact that we have never focused on the short term but set our sights on the big picture and a futuristic view of mobility.

Daimler's focus on sustainability and the long term needs of mobility influenced the development of car2go. Car2go is a completely personal, flexible type of mobility option first introduced in Ulm, Germany and Austin, TX in 2009. The idea has been called point-to-point car sharing, but in reality, it's as personal and flexible as owning your own car, minus the hassle and expense. car2go's fuel-efficient non-



hybrid or electric vehicles are an intelligent response to the environmental concerns and traffic and parking congestion challenges of a fast-growing urban area.

The idea is quickly redefining transportation for cities and their residents while providing a practical solution to such problems as traffic congestion. The car2go car sharing model works as a complement to other transportation solutions, and when used alongside existing public transportation--specifically bus, rail, and rideshare alternatives--serves to tackle some of the issues in dense urban environments.

An efficient transportation system is imperative to the economic development of cities. It enables a systems approach to moving goods and people. In cities today, there is a disparity between the location of jobs and where people

live causing long stressful commutes. Tight budgets causing transit service cuts, poor land use decisions, and continued suburban sprawl has affected both housing and employment locations putting workers and employers farther apart. For an employer this means that they are unable to attract the best talent, since many potential candidates live too far from the potential employer. For an employee, it means long commuting times which can affect time spent on other personal activities.

Urbanization rates will continue to grow and it is through innovative products and services that the business community can offer which will help ease the strains of dense cities. Providing an efficient and flexible lifestyle for urban dwellers will result in a more vibrant, attractive, and sustainable community for current and future residents.

Transitioning to an Alternative Energy Source

By Edward F. Kiczek, Global Business Director—Hydrogen Energy Systems, Air Products



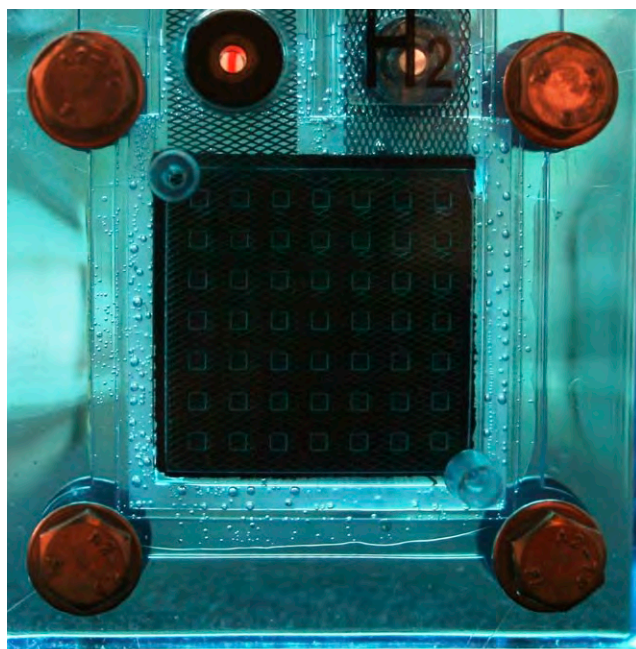
As world energy demand grows, urban areas continue to see ever more environmentally deteriorating conditions caused by transportation emissions. Contemporaneously, the reliance on foreign oil to meet demand continues to drive the price upward, making alternative sources a matter of sustainability. While petroleum-based fuels have served us well, petroleum is a finite resource, which by definition will someday be exhausted. Any alternative fuel should be driven by an independent domestic source, be renewable, be indefinitely sustainable, and represent sound environmental stewardship from an efficiency and emissions standpoint.

Hydrogen fuel cells are one solution. Major automobile manufacturers are demonstrating fuel cell vehicles in the marketplace today and aim at commercial introduction in 2015. Hydrogen is produced at costs that can meet the needs

of the transportation market, especially with the low cost and abundant supply of domestic natural gas. It is also a zero emissions point source fuel when used in conjunction with a fuel cell. Fuel cell vehicles can change the urban environment and improve the quality of life.

We know how to build cost-effective large fueling stations; however, the ramp-up in vehicles will be slow and methodical, likely to follow the path of hybrid gasoline vehicles. The challenge has been the hydrogen distribution and dispensing infrastructure has not yet been perfected to the corner station. A transition strategy must therefore be instituted to grow fueling supply systems commensurate with vehicle demand. Air Products and Chemicals, Inc. (Air Products) has developed new delivery systems that can meet commercial targets for fueling station capital and operating costs through the development of new delivery systems. These systems have been developed and proven in a variety of applications, including material-handling vehicles, submarines, unmanned aerial vehicles, transit buses, mining locomotives, and cell tower backup power. The initial retail fueling systems have been deployed in the Los Angeles basin. As fuel cell vehicles are beginning to be deployed in significant numbers, we are demonstrating that the entire supply chain from production to dispensing of hydrogen that meets consumer pricing targets for hydrogen as a transportation fuel can be installed, starting in high non-attainment areas. The individual components along the supply chain are operating in the aforementioned complementary markets.

Air Products is demonstrating in the LA Basin an innovative, low-cost hydrogen fueling delivery/station concept that reduces the capital and operating cost at the point of use of the fuel



and provides hydrogen at pricing that is attractive for a number of fuel cell-based transportation applications, starting with light-duty vehicles. This concept is broadly deployable as an infrastructure transition onto existing forecourt fueling stations and answers the widely mentioned rollout difficulties of the hydrogen fueling, namely cost and citing. The stations can dispense hydrogen to fuel as many as 75 cars per day and are expandable up to 300 cars per day.

The station configuration is a unique value delivery system that combines operations of high-capacity, high-pressure gaseous delivery and storage into a single-unit operation with minimal onsite ground equipment. This proprietary system promotes high utilization of hydrogen from a unique delivery trailer and supply system. The system is also modular and therefore easily expandable with increases in station volume. The footprint of this configuration is compact, allowing it to be placed on most existing gasoline forecourts. With dual fuel capability at a station, the revenue for the small business owner can be greatly enhanced. The increased foot traffic will also provide for additional convenience store purchases.

Air Products will initially build nine stations of this configuration with independent station owners, working with a team of locally based suppliers, site contractors, and station operators. Air Products has a list of more than 50 stations interested in establishing hydrogen fueling on their property. We formulated this list in consultation with auto manufacturers, which recommended general locations that would best serve their



infrastructure needs for existing and new vehicles placements in the region. These stations will mainly be owned by small, independent owners and located in urban areas.

The goal of this program is to demonstrate that hydrogen fueling infrastructure can be deployed today at costs that will be attractive in the commercial marketplace and provide hydrogen for light-duty vehicles at consumer pricing that the station owner can sustain. This model is translatable to other major cities and connector stations as vehicle come to the marketplace.



Case Study

Air Products

Best Practice

These efforts position the transportation industry to transition to alternative fuels and meet the four main drivers of domestic energy, a sustainable fuel, environmental improvements, and efficiency gains. This has occurred through systemically developing products in complementary markets that have applications for the larger transportation market.

Outcomes

We developed enabling equipment for the larger market while proving its capabilities in smaller complementary markets. Commercializing these markets is a means of reaching successive confirmation of the value proposition and capabilities.

We minimized capital and research investment compared to a straight-line development of the larger transportation market.

Ultimately, the quality of life will be enhanced through improved air quality and local employment.

Lessons Learned

We quickly learned that traditional products would not suffice nor be competitive in the market unless we jumped immediately to the endgame at significant investment. We therefore needed to develop a transition strategy and develop products that would meet the short-term need and could grow with the customer life cycle.

When approaching a larger market with significant barriers, consider a strategy to commercialize complementary markets while keeping a focus on developing the larger markets.

Cox Enterprises Celebrates Fifth Anniversary of Cox Conserves

By Jami Buck-Vance, Senior Manager of Corporate Responsibility, Cox Enterprises



National Sustainability Program Focuses on Operations, Employees, and Community

Cox Enterprises has a long-standing history of finding ways to lessen its impact on the environment. It was one of the first media companies to adopt publishing on recycled newsprint in the 1970s. Additionally, Cox's Energy Management Department implemented energy-savings measures at several company sites prior to 2007, eliminating 118,000 tons of greenhouse gases.

Based on the success of these efforts, Cox Conserves, Cox Enterprises' national sustainability program, was launched in 2007. This year marks the fifth anniversary of the Cox Conserves program, created to further reduce the company's

energy consumption by embracing renewable forms of energy, conserving natural resources, and inspiring eco-friendly behavior.

"At Cox, we have always prided ourselves on being good corporate citizens," said Cox Enterprises Chairman Jim Kennedy. "We have a long tradition of giving back to the communities where we do business. Being an environmental leader is an important way for us to continue this tradition. We've found that doing what's right for the environment is also good for our business, good for our employees, and good for the community."

Cox Conserves is a multifaceted program. Below are examples of initiatives completed to date:

Alternative Energy

Cox actively identifies opportunities to harness solar energy and employ fuel cell technology. To date, these alternative energy projects have saved 17,600 tons of carbon—equivalent to removing the pollution created by more than 3,000 cars. Twenty-five percent of Cox Communications' electricity in California is generated through alternative energy.

Eco-Friendly Fleet

With more than 12,000 vehicles, Cox Enterprises has one of the nation's largest fleets. Cox embraces eco-friendly vehicles and uses technology such as GPS Fleet Management Solutions to lessen its impact on the environment. Ninety percent of Cox Communications' bucket trucks are zero emission vehicles when the bucket is in operation.





Energy Conservation

Across the nation, Cox has identified multiple ways to conserve energy, including lighting; heating, ventilation, and air conditioning; building designs; and more. To date, these projects have prevented more than 14,000 tons of carbon from entering the environment.

Water Conservation

Cox's Manheim subsidiary uses water in its car-detailing process, so it developed Water Conservation Centers at two of its larger locations. Combined, the two centers treat 57,000 gallons of wastewater per day, remove 92 tons of contaminants annually, and return cleaner water to the system than what was originally used. Cox also uses water conservation features such as motion-sensored faucets in many of its locations. Overall, Cox is conserving 20 million gallons of water—annually—enough to fill 30 Olympic-sized swimming pools.

Waste Management

Through its waste management program, Cox Enterprises annually recycles 60,000 cubic yards of material. Many Cox companies also host employee and customer electronics recycling events, which have collected more than 250 tons of recyclable e-waste.

Community Engagement

The Cox Conserves Heroes program, created in partnership with The Trust for Public Land, recognizes local environmental volunteers. Since 2008, the program has honored 20 volunteers and donated a total of \$215,000 in grants to their environmental nonprofits of choice. Through the company's partnership with American Rivers, Cox employees have collected more than seven tons of trash during river cleanups. Across the nation, Cox companies support countless local environmental nonprofits.

Cox Conserves engages each of the company's major subsidiaries (Cox Communications, Manheim, AutoTrader.com, and Cox Media Group) and encourages Cox Enterprises' 50,000 employees and their families to engage in eco-friendly practices.

To learn more, visit CoxConserves.com.

A Sustainable Water Solution for the City of Tomorrow

By Edwin Piñero, Executive Vice President and Chief Sustainability Officer,
Veolia Water North America



Americans are generally unaware of the looming water infrastructure failures right beneath their feet and have yet to put water resources high on their list of concerns. They are more concerned about the recovery of the economy, job stability, and providing for their families—and rightly so. But make no mistake: The declining state of the U.S. water infrastructure directly affects cities' ability to grow and prosper.

Research shows that there is a need for greater investment in our deteriorating water infrastructure. A study by the American Water Works Association (AWWA) estimates that the cost of repairing and expanding buried U.S. drinking water infrastructure will top \$1 trillion in the next 25 years, an expense AWWA predicts will be met primarily through higher water bills and local fees. And that is just for underground water infrastructure such as water pipes—not for drinking water facilities or wastewater collection systems and facilities. In its most recent infrastructure report card, the American Society of Civil Engineers gave both water and wastewater infrastructure in the U.S. a D-minus and estimated a combined five-year spending gap of \$108 billion.

The U.S. Geological Survey has noted that leaky pipes account for the loss of 6 billion gallons of clean drinking water each day—enough to supply approximately 60 million people with their daily needs. Despite the dire picture painted by these studies, city and water managers are struggling to convince lawmakers and the general public that these investments are necessary. Without billions of dollars readily available for projects, many cities are being forced to make difficult budgetary decisions.

But there is good news. There are approaches that cities can take to better manage their water systems now and smartly

invest in their communities. These approaches include leveraging the link between water and economic vitality, sharing best practices, and using public-private partnerships. As many local and regional water managers operate in relative isolation, they value opportunities to tap into the experiences of others to make better informed decisions.

In recent years, the strain on budgets has resulted in infrastructure that is less than ideal in terms of integrity, resilience, and efficiency. Although all realize that something needs to be done to secure and improve aging systems, there is just not enough funding to cover the assessments, let alone the actual improvements.

Veolia Water, the largest and most experienced water technology and services company on the planet, birthed the water services industry more than 150 years ago. Drawing on this experience, Veolia has developed its new Peer Performance Solutions model, which preserves a public workforce and public governance but infuses private sector expertise. The two parties work together to evaluate the infrastructure—in this case, water systems—to identify opportunities for efficiency improvements. The partnership works because it brings together the public entity's depth of knowledge of its own system with Veolia's experience as the water industry's global leader. As an operator and not a consultant, Veolia can offer municipalities a unique perspective of how systems can be enhanced.

Veolia offers a series of tools to help city decision makers evaluate the relative water resource impacts of their decisions. Through the Water Impact Index (WIIX), for example, a municipality or authority can evaluate impacts on the local water resource in terms of quantity, quality, and local availability stress factors. By applying the WIIX analysis to multiple scenarios,

the leadership can evaluate decisions on the basis of not only carbon and energy footprints, but also the water footprint.

Another resource for cities to use in their decision-making process is the Growing Blue website (www.growingblue.com). Growing Blue provides both raw data and interpretive insight on how water and growth are inextricably linked. Decision makers can use this water-growth nexus information and analysis to inform actions that will shape their city's future.

While Veolia Water was the main underwriter of the site, we collaborated with Global Water Intelligence and consulted with industry colleagues, scientists, academia, and nongovernmental

organizations, such as Clean Water America Alliance and the International Food Policy Research Institute. The result is that the information in Growing Blue is informed by the perspectives of many sectors and stakeholders relevant to the city's future.

Veolia is constantly working to stay a step ahead, by answering questions of the future: Namely, which technologies and partnership models will be needed to meet the challenges of a planet occupied by eight billion human beings, half of them living in urban environments? Most people don't spend their days thinking about people, water, and wastewater. But we do. We are proud to help the communities we serve address the challenges of the 21st century.

Case Study

Veolia Water North America

Best Practice

The Water Impact Index (WIIX) provides a quantitative evaluation of the impact of a project or action on the local water resources in terms of quantity, quality, and stress factor. It allows decision makers to assess options in terms of their relative impacts on water resources.

Outcomes

Using the WIIX results, the Milwaukee Metropolitan Sewage District (MMSD) can now integrate water with other factors such as carbon, energy, cost, and risk to make more informed decisions on a variety of projects.

WIIX results can be independently validated. The calculation method is transparent and publicly available so public sector decision makers can use the results to rationalize choices regarding water.

Lessons Learned

The WIIX MMSD project is an example of the importance of strong partnerships between Veolia and the sewer authority when it came to making informed decisions regarding water-related projects. MMSD was an enthusiastic partner with an environmentally innovative approach to water management. The relationship is mutually beneficial, with streamlined decision making and operations. A good partner results in an effective evaluation. For more information, see <http://growingblue.com/footprint-tools/water-impact-index/>.

Improving Prospects for Children in Underserved Communities

By Eva Blum, Director of Community Affairs for PNC Bank and Chair and President of The PNC Foundation



The United States is competing in an economy that is increasingly transforming into one based on knowledge and skills. The foundation for these fundamental skills is found in the early school years. Yet, across the nation, tens of thousands of children in kindergarten are 18 months behind their classmates in academic skills. Few of them ever catch up, which can lead to disruptive behaviors, high dropout rates, poverty, and even crime—some of the most pressing and costly issues cities face.

A significant body of research over the past 40 years supports the critical importance of quality early education—starting with preschool—to reduce dropout rates, poverty, and crime and also improve skills and the U.S. workforce. In 2004, PNC initiated Grow Up Great, its \$350 million, multiyear, bilingual initiative, to help address many of the issues surrounding school readiness. The return on investment of high-quality early education initiatives is long lasting—effecting a child's future societal contributions and contributing to the future health of America's cities.

PNC focuses its philanthropic mission on early childhood education (ECE) and community and economic development, which includes the arts and culture. Its commitment to school readiness is an investment to improve access to and quality of early education. Its goals include achieving a significant improvement in the future workforce and helping turn around distressed communities. To date, the program has served more than 1.5 million children.

There is a correlation between ECE and community development and evidence of its impact on the health of communities.



James J. Heckman, Ph.D., Nobel laureate and professor of economics at the University of Chicago, has done extensive research on the economics of ECE and its impact on economic development. On purely economic grounds, the case for early childhood intervention is strong. Early interventions partially remediate the effects of adverse environments on children, can reverse some of the harm of being disadvantaged, and have a high economic return.

These interventions benefit not only the children themselves, but also their children, as well as society at large. It's not just cognitive development that is affected by early experiences—it's also social-emotional behaviors and physical health, important factors in community development. A principal benefit of early childhood intervention is in shaping the non-cognitive skills—behavior, motivation, and self control—that influence a child's success.

PNC has collaborated with cultural institutions essential to the health and vitality of a number of cities by introducing arts initiatives in Cleveland, Detroit, Philadelphia, and most recently

Raleigh, N.C. Research has shown that the arts play a vital role in children's education. They help children develop cognitive skills important to long-term learning and improve social skills. Also, just like anything else, children who learn about the arts early on are more likely to remain involved and connected to them later in life.

Through arts programming, PNC leverages the experience of its partners to create new initiatives in preschool teacher training and arts activities designed to reach more children in metropolitan areas. These programs place artists in preschool classrooms, where they can teach and share their passion for the arts. The programs also engage families in their children's education by affording them several opportunities to visit cultural institutions throughout the year—experiences they might not otherwise have.

Arts programming is just one area in which PNC invests in children and the communities where they live. More than \$46 million in grants have been distributed to Head Start and other organizations to establish innovative school readiness programs in math, science, the arts, and financial education. In addition, PNC leverages its influence with the corporate community, policymakers, and other key influencers to elevate discussions about the importance of access to quality ECE. PNC Chairman and CEO James E. Rohr serves as honorary chair of the Pennsylvania Early Learning Investment Commission, along with Pennsylvania Governor Tom Corbett. PNC regional presidents advocate at the regional and state levels, taking the issue of school readiness center stage, and stimulating discussions among the corporate community and policymakers who have the power to effect change.

PNC builds awareness for ECE through exhibits and activities that are delivered into communities. These include a series of bilingual, multimedia school readiness kits created by Sesame Workshop for PNC as part of a continuing partnership. To date, more than 2,000,000 free kits have been distributed. Traveling exhibits showcase the value of ECE through the Mobile Learning Adventure and provide a cross-cultural exploration of the stars

and moon via the mobile planetarium show, *Growing Up Great Together Under One Big Sky*.

To help bring its ECE programs to fruition, PNC encourages employee involvement through a progressive policy that permits 40 hours a year of paid time off for volunteerism. In addition, employees and teams of employees who volunteer may qualify to earn grants of \$1,000–\$3,000 payable to the preschool in the employee's name. Over the past eight years, approximately 25,000 PNC employees have volunteered, and more than 250,000 volunteer hours have been logged at ECE centers.

Today's preschoolers are tomorrow's consumers—customers for businesses of all types, purchasing goods and services, investing in their communities, and driving the economy. For every \$1 spent on quality early education, society reaps as much as \$16 in long-term savings, according to a cost-benefit analysis of the Perry Preschool Study, a research project that spanned 40 years.

Grow Up Great is about investing in the future, to help ensure that children get off to the right start. PNC recognizes the value of being a part of the community and a catalyst for positive change. An investment in children now makes good economic sense and plants the seeds for the dynamic workforce of tomorrow.



Nurture Positive Change in Your Own Backyard: The Importance of Small Businesses in the City of Tomorrow



By Patty Huber, Manager, Groupon Grassroots, Groupon

Groupon's roots are in social change. The company began as a The Point, an online collective action platform designed to make it easier for people to work together to support social movements. In 2008 when The Point pivoted to collective buying, Groupon was born and soon became known as the fastest-growing company of all-time. When Groupon developed G-Team in 2010, recently rebranded as Groupon Grassroots, it wasn't a stretch because the concept of collective action to advance social causes is in the company's DNA.

Groupon activates local participation and strengthens the resilience of neighborhoods and communities. As consumers look to Groupon in order to discover their cities with offers from local merchants, Groupon Grassroots offers them opportunities to discover and support local causes that have a meaningful impact.

Groupon Grassroots has raised more than \$3.7 million to fund over 800 projects for local community groups around the world since its inception. These campaigns can be found on www.groupon.com alongside with their fundraising 'deals.'

Groupon Grassroots campaigns use the power of the Groupon platform to activate supports for local causes:

- **Discovery**—Each week Groupon features an average of 15 cause campaigns on a variety of issues. Each campaign tells a specific story about a community group and what their campaign attempts to achieve.

- **Collaboration**—All Grassroots campaigns are activated by a collective tipping point. Campaigns are only funded if they meet the minimum amount required to activate the project, making it safe for people to give because they know their donations will produce tangible results.
- **Local Impact**—Groupon Grassroots campaigns allow consumers to have an impact locally, where they can see the change happen and get more involved to support the cause after the campaign is funded.

However, Groupon's impact story does not end there.

Groupon levels the playing field for the best independent small businesses and offers strong incentives for consumers to buy local. Small businesses are vital to the economic



viability of our communities. According to the U.S. Small Business Association, small businesses have contributed 65% of net new jobs over the past 17 years. The Institute for Local Self-Reliance also points out that small businesses are often more dedicated to providing better wages, benefits, and job security than nationally owned chains because primary decision-makers live locally alongside the employees that they hire. Civic Economics states that for every dollar spent with a locally owned small business, independent merchants return 68 cents back to the local economy (compared to 43 cents from a nationally owned chain).

It is clear that locally-owned, small, independent businesses are the hearts of our communities. Who doesn't love that Main Street feel when you visit your favorite shop that could only exist in this one neighborhood, in this one part of the world, and the owner knows your name? Small businesses pump money through the veins of the community, keeping it healthy, growing, and unique. From the skate shop in San Carlos that runs community programs for youth, to the café in Chicago that has been family-owned and run since the 1980's, small businesses provide genuine character.

Groupon creates thousands of connections everyday between consumers and merchants—many just around the corner from each other. The greatest value that Groupon gives to its local merchant partners, however, is an opportunity to create new regulars: 91% of daily deal customers say that they have already or plan to return to the merchant again. Through its daily deals, Groupon showcases the hidden gems you might not have found or tried otherwise.

But the vision is even grander. In Groupon's view of the future, small, local, independent businesses can compete on a level playing field with large chain stores. We hope to be the partner that addresses merchants' most difficult challenges so well, that business owners can focus their time and passion on perfecting their craft.



The company has already rolled out a suite of products to help business owners operate more effectively. The Merchant Center features an intuitive display of demographics of the purchasers of each Groupon deal, including age, gender, and location information. It also privately shows merchants customer feedback that Groupon has collected following deal redemption, so that merchants can fix customers' most pressing issues in real time. Groupon Now! helps local merchants advertise discounted excess perishable inventory, essentially allowing small business owners access to dynamic price differentiation and marketing that otherwise would not be available. What's more, Groupon Scheduler provides an online self-serve system so that staff can concentrate on providing excellent services instead of worrying about logistics.

When local businesses, the heart and soul of our communities, thrive, we all do. Local merchants humanize business relationships and transform communities to make them better places to live. Local leadership, local stakeholders, and local governance give these businesses an incentive to look out for the wellbeing of their consumers and the community at large—because it's their community too. The future of local commerce is more than keeping dollars circulating locally—it's about making communities and cities places you want to be for the long-term.

Community Centers and ARAMARK Putting People to Work

By Bev Dribin, Vice President Community Relations, ARAMARK



As a single mother of three unable to find employment in Orlando, Fla., Amanda struggled to make ends meet. Lacking employable skills, Amanda could not find meaningful work. After a relative brought her to the Community Food and Outreach Center (CFOC), Amanda enrolled in the center's Passport Out of Poverty Program, a 24-week educational program that helps low-income families regain hope and achieve self-sufficiency. As part of the curriculum, she participated in ARAMARK Building Community (ABC) workforce readiness workshops and learned valuable skills to help her secure employment. After completing the program, Amanda was hired by ARAMARK as a grill cook and was quickly promoted to a full-time supervisor position.

At a time when many Americans, like Amanda, are struggling with unemployment, rising living costs, and health disparities,

it is critical for individuals and families to be able to access vital resources and solutions to live healthy and productive lives. In addition, the rapid rate of urbanization is putting a strain on many communities, and especially on jobs. The current social and economic crisis will continue if the need to build a strong workforce is not effectively addressed. Across the nation—in large urban environments and smaller local neighborhoods—community centers like CFOC have been working hard to provide these resources and fill the service gaps left by government budget cuts.

Since 2008, ARAMARK has been working alongside local community centers in more than 50 cities through ABC, the company's signature philanthropic and volunteer program. To date, ARAMARK has invested more than \$7 million in volunteer expertise, cash, and in-kind resources to strengthen the capacity of community centers in four countries, helping close to 3 million people. The program also offers ARAMARK employees with an opportunity for development and training by applying their professional expertise in nutrition and wellness, job readiness, and facilities management to help strengthen communities. Since the program was established, more than 15,000 ARAMARK employees have participated in nearly 500 volunteer activities.

The current economic crisis brings new urgency to addressing the needs of lower-income families, particularly of low-skilled individuals competing for a shrinking number of jobs. Community centers' workforce programs help remove the barriers that limit underserved individuals' ability to get and keep jobs by providing essential job training and wraparound support services, including child care, transportation, tuition subsidies, and more. By bringing together essential stakeholders

involved in job creation—educators, community members, and employers—community centers have become hubs for neighborhood revitalization in urban centers.

Susan Dreyfus, president and CEO of Families International, emphasizes that community centers will play a central and ongoing role in meeting growing local needs: “Community centers are some of the strongest advocates for vulnerable populations and are continuously looking at not just providing quality programs and services but working more collaboratively to integrate services to have a greater impact on the lives of people and their neighborhoods.”

ARAMARK partners with community centers to help prepare people for and place them in jobs. Company employees lend their workforce-related skills training expertise to the centers’ job readiness programs, and the centers provide the support services vital to getting and keeping meaningful jobs. ARAMARK and community centers work in partnership to create or enhance job and career resource spaces in centers, develop job readiness training materials, host career fairs and job readiness events, and connect individuals to local ARAMARK jobs and internships.

Through these efforts, ARAMARK helps develop a skilled workforce the company needs to remain competitive and achieve its business goals in a tough economy as well as helps



individuals and families achieve economic independence. The company’s commitment to investing in neighboring communities and hiring locally is evident in Amanda’s case as well as in many other places. For example, as part of a four-year partnership with Community Links in London, ARAMARK recently hired 40 unemployed people involved with the center to become part of the ARAMARK team at the 2012 Games.

In another example, working with Queens Community House in Queens, N.Y., ARAMARK hired several participants at CitiField who were part of our workforce preparedness programs. In Philadelphia, in partnership with the Dixon House, through an ARAMARK-sponsored career fair, more than 800 individuals were exposed to 30 employers; many found employment with ARAMARK and the other participating companies.

Since 2011, through the ARAMARK Building Community Innovation Awards, ARAMARK has funded the scaling and execution of breakthrough workforce development models that are preparing people for and connecting them to jobs. In partnership with United Neighborhood Centers of America and the Alliance for Children and Families, the awards recognize innovative, transformational, and solution-driven programming that can be replicated elsewhere to improve lives and revitalize neighborhoods.

Winners of the 2012 ABC Innovation Awards for Workforce Readiness include the following:

WORKING WITH PUBLIC AND NONPROFIT PARTNERS



- **East End Community Services: Dayton Works Plus**—Dayton Works Plus creates green jobs for hard-to-employ individuals in Dayton, Ohio, through its nonprofit residential deconstruction firm, one of the largest in the nation. This innovative workforce model combines green job training and hands-on experience with neighborhood revitalization. As an East End Community Services' business venture, Dayton Works Plus salvages and sells materials from

the many vacant, foreclosed, and dilapidated homes in the region, turning a community deficit into an opportunity for job creation. Salvaged materials are sold globally, with profits supporting the costs of the program. The community center has deconstructed more than 100 homes and saved 75% of the materials from landfills. It has also provided more than 1,000 postsecondary certificates for various green job functions to disadvantaged persons. East End is currently exploring scaling the program to the Dayton area.

- **Casa Central: Certified Nursing Assistant Job Training Program (CNA)**—CNA prepares and places low-income and unemployed Hispanic individuals in Chicago's Humboldt Park and West Town neighborhoods into open, career-track jobs in the growing health care industry. Through a four-month curriculum including vocational instruction, hands-on training, career placement services, and personalized case management, Casa Central enables people to secure long-term careers in the health care industry. Helping students overcome social, financial, and emotional struggles, the program has placed more than 1,000 professionals in health care jobs and averages 85% job placement annually for all students who complete the program. The center is in the process of replicating its program to other Chicago neighborhoods.

ABC has become a powerful program for the company and communities. By bringing together people and organizations from all sectors of society, ARAMARK and its community center partners demonstrate how companies, nonprofits, government, and communities across the U.S. can collaborate to help fuel America's economic engine, ensuring that it has the workforce it needs and that all people are participating.



Succeed Through Service: The Ritz-Carlton Hotel Company's Pathway to Youth Engagement

By Sue Stephenson, Vice President, Community Footprints,
The Ritz-Carlton Hotel Company, LLC



Rapid urbanization is placing a great strain on many communities across the country, with a critical shortage in the availability of skilled workers to fill essential roles in manufacturing and other industries. For the city of tomorrow to thrive, be competitive, and develop a strong workforce, it is essential that we increase the number of students who graduate from high school and go on to acquire necessary skills through postsecondary education in the form of college, technical school, or apprenticeship programs.

Currently, one in four public school students drop out before they finish high school. For African-American and Hispanic students, the likelihood of graduating is closer to 50 percent. Many of these students don't have access to positive role

models, cannot envision a career, and don't feel connected to their communities. Tragically, young people who drop out are much more likely to be unemployed, incarcerated, or live in poverty.

The Ritz-Carlton Hotel Company launched Succeed Through Service, a pro bono skills-based volunteering program, to help prepare at-risk students for a successful future. The curriculum, which was developed in partnership with the children's advocacy organization America's Promise Alliance, pairs Ritz-Carlton employees with middle school students in low-income communities to teach them critical life and career skills while introducing them to the importance of giving back.

To support the creation of the systematic Succeed Through Service blueprint, The Ritz-Carlton leveraged the company's embedded focus on training through its multicultural service and life-skills training curriculum, along with America's Promise Alliance's research materials and resources. Research identified that the curriculum would have the most impact if efforts focused on middle school students in low-income communities. The program is now deployed at 38 schools across the U.S. and has been culturally adapted and introduced at an additional 42 schools and children's organizations around the world.

At the start of the school year, the students arrive at their Ritz-Carlton partner hotel, where they are welcomed by a "wall of applause" as they enter through the main lobby—reinforcing a message that the students are important and valued. The first phase of the program introduces the students to the critical aspects of workplace success with presentations that highlight the importance of hard work, commitment, and a positive attitude. Back in the classroom, Ritz-Carlton employees teach valuable life skills. For example, front desk and concierge employees engage the students on the importance of eye contact, a great smile, and a firm handshake; restaurant teams introduce dining etiquette; chefs teach the importance of healthy eating habits and how to safely handle food; and trainers coach students on effective collaboration and group presentation skills.

As we envision the city of tomorrow, it is key that its citizens are socially conscious and have the motivation to make a difference through civic responsibility. A key component of the Succeed Through Service curriculum introduces students to the importance of giving back.



Ritz-Carlton employees support students in planning community volunteer projects that tackle challenging issues such as homelessness, child literacy, and environmental conservation. As a result, students understand that their actions can benefit others and learn the value of giving back to their community.

Succeed Through Service has already benefited more than 9,000 students. To enable Succeed Through Service to reach more students, the curriculum is being made available on a nonproprietary basis to other companies. This action was designed to encourage other businesses to support at-risk youth in their own communities and help shape the city of tomorrow.



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