ESI THOUGHTLAB

Press release

Contacts:

Lou Celi, CEO, ESI ThoughtLab
Mobile: 917-459-4614
Email: Lceli@esithoughtlab.com

Mike Daly, Communications Specialist, ESI ThoughtLab
Office: 215-717-2777
Email: Daly@econsultsolutions.com

Smart transformation triggers a robust cycle of economic growth in cities, according to ESI ThoughtLab research

Over five years, smart cities can raise GDP per capita by 21% and population growth by 13%

November 13, 2018 *(Philadelphia, PA)* **–** ESI ThoughtLab today released key findings from a worldwide benchmarking study of 136 cities that found that smart city investments trigger a robust cycle of economic growth by unlocking savings and attracting businesses, residents, and talent. The catalytic impacts associated with becoming a smarter city have the potential to increase GDP per capita by as much as 21% and population growth by 13% over the next five years for cities beginning their smart city journey.

As digitization, globalization, and demographic change redefine the urban landscape, becoming a smart city is vital for fostering economic growth and prosperity, while addressing the expectations of citizens and businesses. But the path to a smart city future is often unclear to urban leaders. To help them find their way, ESI teamed up with a coalition of leading organizations to explore the business case for urban transformation in a research program titled ***Smarter Cities 2025: Building a sustainable business and financing plan***.

The need for a clear roadmap and business case

The research found that to drive optimal results, cities need a well-thought-out roadmap and business case for smart city transformation. “Smart cities provide major economic, social, and productivity benefits to all stakeholders. But without the right vision, plans, talent, and funding in place, smart city programs will not reach their full potential,” said Lou Celi, CEO of ESI ThoughtLab and the project’s director.

In addition to the 136-city survey of government leaders, the research program included diagnostic surveys of 750 businesses and 2,000 citizens in 11 representative cities, along with economic impact models for cities in different stages of smart city maturity. The 136 cities, covering 55 countries, ranged in size from 35,000 to over 37 million residents and represented approximately 10% of the world’s population.

ESI ThoughtLab categorized cities into beginner, transitioning, and leader stages of smart city maturity by scoring their progress across 10 pillars of smart city development. These included five “foundational” pillars—smart governance, economy, infrastructure, talent, and funding—as well as five “tech-enabled” pillars—smart mobility, environment, public safety, public health, and payment systems. The study found that many beginner cities often jump into digital solutions before they lay down the foundational pillars, which are vital to long-term smart city success.

Other key findings from the research:

Data is the rocket fuel for smart city transformation. Since many smart solutions are dependent on data, it is crucial for cities to make data management an area of excellence. This includes gathering and analyzing an array of data, making it accessible to stakeholders, and monetizing its value. By 2021, almost all cities will draw on IoT and real-time data, and the use of AI-generated data will grow fourfold. Predictive data, which is already employed by about 40% of cities, will rise in usage by 63%. Similarly, the use of both geospatial and behavioral data will rise by 54%.

Keeping up with digital innovation is essential for smart city success. Cloud-based technology, mobile apps, citywide data platforms, IoT/sensors, biometrics recognition, and geospatial technology are now used by more than half of the surveyed cities. By 2021, these technologies will be table stakes for urban centers. While just 1 out of 10 cities now use more advanced technologies, these will skyrocket over the next three years: blockchain usage will grow by 752%, AI by 526%, drones/robots by 298%, Vehicles to Everything (V2X) by 257%, and VR/AR by 254%.

Spending on smart programs rises with smart city maturity. As cities move up the smart city maturity curve, so does their spending on smart city projects as a proportion of their operating and capital budgets. For example, beginner cities allocate 15% of their capital budget to smart programs, while leaders apportion about 20%. For some pillars (mobility, environment, governance, economy, payments), the level of investment increases as cities become more mature, while for others the level of investment decreases (infrastructure, public safety, talent).

The future of mobility will be multi-modal systems connected through smart technology. The study revealed that cities around the world are developing multiple modes of transportation to provide greater efficiencies for residents and businesses. As cities move to a tech-enabled, multi-modal mobility model, which includes ride and car sharing, smart traffic signals, mobile apps, and smart public transit systems, there can be large returns in time and money. For example, in beginner cities, mobile apps can save riders 10.3 hours annually per capita in waiting time and increase transit ridership, while smart traffic signals can offer per capita annual personal time savings of 9.7 hours and fuel savings of 3.3 gallons per capita.

City leaders see the environment as the top challenge to address through smart city programs, and improved public safety and health as the main benefits. For example, environment investments in smart grid technology generate annual per capita savings of $229.86 and reduce C02 emissions 223 pounds per person annually in beginner cities. Pollution reduction has positive effects on health, particularly for sufferers of chronic obstructive pulmonary disease (COPD), for whom treatment with smart public health technologies such as telemedicine can reduce annual healthcare costs per capita by $24.83. In public safety, technologies such as predictive policing reduce violent crimes by about 5% and property crimes by about 10%, leading to a potential savings of $420.33 per capita for beginner cities.

Funding smart city solutions remains a key challenge for most cities. Urban leaders need to be creative and resourceful in finding ways to fund their future. In three years, public-private partnerships (65%) will be the dominant financing technique, followed by concession financing (60%), revenue share financing (60%), and department budgets (59%), which will all grow in use over current levels. Federal and state support will grow the most in use over the next three years, by 71% and 58%, respectively.

For more information please visit: https://econsultsolutions.com/esi-thoughtlab/smarter-cities-2025

About our research team

ESI ThoughtLab: ESI ThoughtLab is the thought leadership arm of Econsult Solutions Inc., a leading economic consultancy. The innovative think tank offers fresh ideas and evidence-based analysis to help business and government leaders understand and respond to economic, industry, and technological shifts around the world. Its team of top economists and thought leaders excel at creating valuable decision support that combines visionary thinking, analytical excellence, and multi-format content.

About our sponsors

Accenture: Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology, and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With approximately 442,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives.

CBRE: CBRE Group, Inc. (NYSE: CBRE), a Fortune 500 and S&P 500 company headquartered in Los Angeles, is the world's largest commercial real estate services and investment firm (based on 2017 revenue). The company has more than 80,000 employees (excluding affiliates), and serves real estate investors and occupiers through approximately 450 offices (excluding affiliates) worldwide. CBRE offers a broad range of integrated services, including facilities, transaction and project management; property management; investment management; appraisal and valuation; property leasing; strategic consulting; property sales; mortgage services and development services. ESI ThoughtLab has no affiliation with CBRE ESI. Please visit our website at www.cbre.com.

Cognizant: Cognizant is multinational corporation that provides IT and business services, including digital, technology, consulting, and operations services. Cognizant's industry-based, consultative approach helps clients envision, build, and run more innovative and efficient businesses. Cognizant is a member of the NASDAQ-100 and is ranked 205 in the Fortune 500.

Exelon: Exelon Corporation (NYSE: EXC) is a Fortune 100 energy company with the largest number of electricity and natural gas customers in the US. Exelon does business in 48 states, the District of Columbia and Canada and had 2017 revenue of $33.5 billion. Exelon serves approximately 10 million customers in Delaware, the District of Columbia, Illinois, Maryland, New Jersey and Pennsylvania through its Atlantic City Electric, BGE, ComEd, Delmarva Power, PECO, and Pepco subsidiaries. Exelon is one of the largest competitive U.S. power generators, with more than 32,000 megawatts of nuclear, gas, wind, solar and hydroelectric generating capacity comprising one of the nation's cleanest and lowest-cost power generation fleets. The company's Constellation business unit provides energy products and services to approximately 2 million residential, public sector and business customers, including more than two-thirds of the Fortune 100. Follow Exelon on Twitter @Exelon.

Ferrovial Services: Ferrovial Services is an international benchmark in the design and provision of solutions that improve the efficiency, functionality and sustainability of infrastructure and cities. Its Centre of Excellence for Cities develops and implements innovative service delivery programmes, solutions and models in cooperation with cities and other key stakeholders. Ferrovial Services seeks to pioneer a new generation of citizen-centred service models, in line with cities' need for constant improvements in efficiency and citizen experience.

GM: GM is a global company delivering safer, better and more sustainable ways for people to get around. General Motors, its subsidiaries and its joint venture entities sell vehicles under the Cadillac, Chevrolet, Buick, GMC, Holden, Baojun, Jiefang and Wuling brands. More information on the company and its subsidiaries, including OnStar, a global leader in vehicle safety and security services, and Maven, its personal mobility brand, can be found at www.gm.com.

Mastercard: Mastercard is a technology company in the global payments industry. Its global payments processing network connects consumers, financial institutions, merchants, governments and businesses in more than 210 countries and territories. Mastercard products and solutions make everyday commerce activities— such as shopping, traveling, running a business and managing finances—easier, more secure and more efficient for everyone. Mastercard is committed to helping cities become more inclusive, more sustainable and more efficient by applying technology, data and partnerships to the challenges of an increasingly urban world.

Oracle: The Oracle Cloud offers complete SaaS application suites for ERP, HCM and CX, plus best-in-class database Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) from data centers throughout the Americas, Europe, and Asia. For more information about Oracle (NYSE:ORCL), please visit us at www.oracle.com.

Pennoni: Pennoni is a consulting firm of engineers, scientists, surveyors, planners, and technical specialists, providing services that improve today's built environment. As part of their involvement in the smart city initiative, they utilize and continue to discover new and innovative methods in the delivery of services for smart, sustainable, and resilient solutions for projects across the globe. Across all market sectors, Pennoni works with project owners, end users, stakeholders, and teaming partners to develop solutions that truly make Pennoni "Partners for What's Possible."

###