

## ESI ThoughtLab Study Reveals Measurable ROI on Smart City Investments

**Improved public safety, health, business productivity, and economic growth are just some of the benefits**

**October 1, 2019 (Philadelphia, PA)** – Today, ESI ThoughtLab unveiled preliminary findings from its 2019 Smart City Research Initiative, ***Building a Hyperconnected City***. The study of 100 worldwide metro centers found that most cities are seeing major economic, financial, and social benefits from their investments in smart technologies, but also greater cyber-risks, if digital innovation is not managed properly.

According to the study, 38% of cities deploying smart mobility solutions are bolstering customer satisfaction and 32% are improving productivity and delivery times for business. Likewise, 45% of cities deploying smart environmental and energy initiatives are improving citizen health, 44% are reducing pollution, and 43% are stabilizing energy prices.

The speed of technological change has been brisk. Public Wi-Fi, Internet of Things, cloud, and mobile technology are now pervasive across cities, used by more than 9 out of 10 them in our study. Other commonly used technologies include biometrics (83% of cities), AI (82%), and Blockchain (66%). Robots and drones, 5G, augmented reality, and distributed computing are promising new technologies, which are still in earlier stages of investment.

By using these technologies to transform and interconnect their urban ecosystem, government leaders aim to deliver a myriad of benefits to their stakeholders. These include creating new business opportunities, filling talent gaps, improving public health, reducing crime, boosting productivity and addressing income inequality. These benefits work together to deliver a virtuous circle of economic prosperity, business growth, and social well-being

### **The ROI on smart initiatives**

These same smart programs also generate economic and financial gains that not only cover the cost of investment, but also provide tangible returns. Except for predictive policing, all 62 smart city initiatives studied showed positive investment returns. The smart city dimensions providing the largest gains include:

- **Mobility and transportation:** curb management (4.5%), congestion charging (4.3%)
- **Energy and water:** dynamic electricity pricing (4.8%), renewable energy (4.3%)
- **Environment:** optimizing waste collection (4.1%), real-time water quality monitoring (3.9%)
- **Public safety:** first aid alerts (5.6%), gunshot sensors (4.8%), real-time crime mapping (4.7%)
- **Governance:** digital business licensing (5%), digital payments (4.6%)

However, if not managed effectively, these smart initiatives can also expose urban areas to higher cyber risks. For cities in our survey, the total cost of cyber loss events over the last year averaged \$3.4 million, with 10% suffering losses between \$10m and \$20m. Over half of the cities said that they were not well prepared for cyberattacks. The biggest vulnerabilities cited were financial and payment systems (54% of cities), IT infrastructure and telecoms (51%), and mobility and transportation (40%). To cope with rising cyber risks, 82% of cities plan to increase their cybersecurity budgets next year, 39% by more than 10%.

The study is based on a rigorous benchmarking survey conducted over the summer of 2019 by ESI ThoughtLab and a cross-industry coalition of sponsors, including Deloitte, Oracle, Stantec, Pennoni, Eaton Lighting, NTT Group, Nokia, Cognizant, Visa, and Microsoft. The sample consisted of 100 worldwide cities engaged in smart city initiatives. Cities varied in size from 123,000 to over 24 million residents and represented a range of income levels, regions, and stages of economic development.

“Our research shows that hyperconnected cities—ones that use technology to transform and interconnect their urban assets—generate demonstrable ROI for their economies, while providing enormous improvements in living and business conditions,” said Lou Celi, CEO of ESI ThoughtLab and director of the study.

Full findings from the study will be released in November at the Smart City Expo World Congress in Barcelona. More information can be found by visiting: <https://econsultsolutions.com/esi-thoughtlab/hyperconnected-city/>

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### About the research coalition

**ESI ThoughtLab** is an innovative research firm providing fresh ideas and actionable insights through rigorous data analysis. We specialize in assessing the impact of technological, economic, and demographic shifts on companies, industries, and cities. ESI ThoughtLab’s team of seasoned economists and thought leaders have many years of experience in conducting urban analysis.

**Cognizant** is a 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.

**Deloitte** provides industry-leading audit, consulting, tax, and advisory services to many of the world’s most admired brands, including nearly 90% of the Fortune 500 and more than 5,000 private and middle

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**Nokia** creates the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises, and consumers, with the industry's most complete, end-to-end portfolio of products, services, and licensing. We adhere to the highest ethical business standards as we create technology with social purpose, quality, and integrity. Nokia is enabling the infrastructure for 5G and the Internet of Things to transform the human experience.

**NTT** is a global technology and business solutions provider helping clients grow their business and improve their competitive market position by delivering fully integrated services, including global networks, cybersecurity, managed IT and applications, cloud and datacenter services combined with business consulting and deep industry expertise. As a top five global technology and business services provider, NTT works with over 80 of the Global Fortune 100 companies and many thousands of other clients and communities to achieve their goals and contribute to a sustainable future. To learn more

about NTT's Smart Platform and how the company is accelerating Smart Cities globally, visit NTT's website (<http://www.ntt.co.jp/news2018/1805e/180502a.html>) and watch the case study on YouTube (<https://www.youtube.com/watch?v=wVpX57OvWE8&feature=youtu.be>).

**Oracle** offers a complete suite of integrated applications plus highly automated and secure generation 2 infrastructure featuring the Oracle Autonomous Database. With Oracle, customers can modernize their operations and take advantage of emerging technologies to better engage citizens and serve their communities.

**Pennoni** is a consulting engineering firm providing services that help communities and private sector clients alike navigate the ever-changing technological advancements available and learn how best to integrate “smart” solutions into 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.”

**Stantec** designs with community in mind. We care about the communities we serve—because they’re our communities too. This allows us to assess what’s needed and connect our expertise, to appreciate nuances, and envision what’s never been considered, to bring together diverse perspectives so we can collaborate toward a shared success. We’re designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

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