



The future of cities

KPMG in Belgium

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Introduction

Cities worldwide are turning to the power of modern technology as municipal leaders and governments look to play a more pivotal role in combating both the environmental and systemic challenges that the COVID-19 pandemic has brought sharply into focus.

The long-held 'one-size-fits-all' approach to planning and policies will likely no longer work to shape cities that are healthy, sustainable, efficient and prosperous for all. The future inevitably demands bold thinking to create smart cities featuring technologies, infrastructure and ecosystems that will seamlessly deliver exciting new ways of living, working and playing as local communities and urban life evolve.

The pandemic's impact has accelerated the pace of emerging changes that now hold unmistakable implications for the decline of the traditional 'centralized city' model. The pandemic has also served to highlight, amid rapid crisis-related changes, the systemic barriers to urban transformation that leaders need to overcome for a promising new future.

City leaders will need to pivot from traditional 'inside-out' thinking — a focus on how to optimize internal organizational processes — to an 'outside-in' mindset that requires an experience-centric approach to everyone they serve: the people, businesses and stakeholders of their communities.

Intentional adoption of smart, digital experience-centric solutions — knowing what stakeholders are expecting and meeting every expectation fully and consistently — will be critical in overcoming today's challenges and aligning city services to the needs and well-being of the public as never before. The strategic, informed, outcome-based use of digital technology will be a key to successfully shaping cities and their services for a new era.

Hearing the voice of the public in new ways

As today's city leaders explore and unlock new capabilities for modern services and efficiencies across their ecosystems, success will include their ability to maintain an 'ear to the ground' — using technology, data and ubiquitous online channels to hear unique individual needs, identify emerging issues, and respond to the array of signals emanating daily from the public. The future demands intentional service design that is micro-targeted to each citizen's specific and clearly identified needs. This change in the concept of service delivery requires an enhanced understanding of the citizen-customer in order to power truly modern urban services.

Forrester's Customer Experience Index research shows that governments, despite emerging technology and evolving public expectations, continue to trail the business sector in this crucial area, providing poorer



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customer experience than private-sector industries.¹ And fewer than half of the leaders surveyed are confident in their analytics technology and data-enrichment capabilities — capabilities that are indispensable in providing data-based insights that drive customer-centricity and ongoing innovation.

While continuing to trail the private sector, city leaders are quickly realizing that there is no time to lose on the need to transform as public expectations for services are being influenced by today's data-driven, consumer-centric era. Today's city stakeholders expect services that are consistently reliable, endlessly efficient, and truly targeted to their needs and expectations. The truth is that local transformation initiatives often remain slow, fragmented and misaligned with service and operational needs. The result tends to be a disconnect that leaves citizen-customers interacting far less efficiently or effectively with city services than when engaging with today's modern businesses and brands. City leaders will need to adopt a more strategic, outcome-focused approach and many are ambitiously pursuing smart new capabilities.

What kinds of innovative approaches are today's future-enabled cities implementing to achieve the required future state? One example is London's digital Smart London platform. The platform is encouraging citizens to provide public-service feedback that's proving instrumental in creating modern services, experiences and efficiencies. Timely public input and collaboration with City Hall is being actively encouraged, giving

citizens a strong new voice in solving local issues while helping to shape planning and policies. The city is thus gathering productive new public insights to drive improvements in areas that include crime, public transit, the environment and more.

In Barcelona, local residents are using the city's BCN Now platform to flag city problems, create petitions on issues and even vote on local budgeting programs. The program is giving citizens and businesses a powerful and unprecedented voice in shaping the city's future.

The Australian city of Ipswich, meanwhile, is lifting the lid on decision making by providing public access to the city's entire budget, while the Better Reykjavík initiative in Iceland is also giving citizens revolutionary new opportunities to present ideas and solutions that will help the city transform its local services and operations. Reykjavík's so-called Open Consultation and Participatory Budgeting programs are among modern initiatives being embraced by the public to enhance the delivery of local services. By bringing citizens into the political realm and giving them a voice in policy decisions, the Better Reykjavík platform is empowering citizens and aligning municipal services with public opinion, expectations, needs and priorities.²

Putting people at the center of city life

"Tomorrow's urban centers need to be reshaped to adapt to humans, not the other way around," suggests KPMG in Australia's Sarah Varghese, Partner,

Infrastructure, Assets and Places, noting that the future is about putting people at the center of urban transformation via convenient universal access to all of the local services needed to live, learn and thrive.

Sydney, as our report illustrates, is a noteworthy example of what can be done to localize city life as leaders there pursue an innovative 30-minute city concept for the future via multi-billion dollar investments in transit, road and rail infrastructure.

Future-enabled cities are also dedicating significant resources and funding to enhance public health, safety and sustainability, including projects to reduce speed limits, convert roadways into pedestrian thoroughfares, develop bike lane networks and expand parks and civic spaces. In Berlin, for example, a citizens' initiative now underway calls for a ban on private car use in the city core, ultimately giving the city the largest car-free urban area in the world.³

Like today's high-performing businesses, forward-looking city leaders need to shape each experience they deliver based on what each citizen is trying to achieve during every interaction. Success on the transformation journey demands breaking down traditional silos and becoming fully connected in ways that put every citizen, business and stakeholder at the center of everything a modern local city does. Clearly setting primary objectives and priorities will be a differentiating factor in building cities that are citizen- and experience-centric.



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That being said — you cannot begin the journey without a clear destination. Smart technology adoption should support and deliver on clear objectives, priorities and operational challenges in a timely manner to help optimize future service delivery and efficiency. This report provides revealing and instructive examples of initiatives that some cities are pursuing to move closer to tomorrow's reality. However, there are cities that continue to lack the digital tools, platforms, mindset and skills needed to deliver modern, personalized, data-driven interactions, relying instead on town halls, paper-based surveys, poorly executed online surveys and the like. The shift from mass-production to mass-customization has begun for those at the forefront of citizen-customer centricity, with services such as healthcare becoming more universally accessible via digital telehealth capabilities that replace the need for costly and time-consuming hospital visits.

City leaders should act today for a sustainable tomorrow

Collaboration among global cities and their leaders to work in partnership with each other and with private industry will be critical to future progress. 'Dare to share' should be a guiding principle. As collaboration and partnerships emerge, sharing of timely data and insights among local governments and businesses can go far to support strategy development and visions for a future that is agile and responsive.

As you will read in our report, the Sustainable Development Goals (SDG) Impact Fund warns that "humanity must now transition into an economic order that is regenerative, adaptable and inclusive." The fund is

contributing financial resources to support important new urban projects that align across the full spectrum of the United Nations (UN) goals for a green future.⁴ Our report also looks at an important global alliance between KPMG in Norway and United Cities that is helping cities and municipalities become more inclusive, safe, resilient and sustainable, enabling a better future for all.⁵

As the pandemic has made clear, the future demands innovative new partnerships and collaboration — city leaders, municipal governments, businesses and citizens cannot live and function in their own individual silos of needs and actions. Amid growing and ever-increasing environmental pressures, sustainability challenges and changing global value chains, partnerships are central to the success of any system, including city services delivered by municipalities and businesses alike.

Cities pursuing modern and sustainable urban environments and the means to pay for them are taking advantage of innovative partnerships with the private sector, as well as tapping into significant new resources like the SDG Impact Fund.

Cities ultimately cannot ignore the need to focus on creating a sustainable future for all — and we mean sustainable in the broadest possible sense. As global experts continue to warn, there is clearly no time to lose in putting sustainable cities on the map. The numbers are telling, if not alarming. More than 80 percent of global gross domestic product (GDP) is being generated today by the world's cities, which are responsible for up to 80 percent of global energy use and more than 60 percent of the world's greenhouse gas emissions, according to the UN.⁶ The World Bank estimates that about 55 percent

of the world's population resides in cities today and predicts that by 2050, the world's urban population will more than double, with nearly seven in 10 people living in an urban center.⁷

Navigating a perfect storm of fiscal challenges

Change is costly of course, as city leaders continue to discover, making the need for new solutions and partnerships crucial. As our report notes, global cities and their leaders now face a storm of fiscal challenges as they look to simultaneously revolutionize public services, manage financial constraints and drive economic growth. Massive local stimulus programs and emergency funding for struggling citizens and businesses impacted by the global pandemic have raised fiscal challenges to critical new heights. But we wish to correct an all too common misconception — sustainable solutions are not, by definition, more expensive. We challenge municipal leaders to find new ways to solve problems that are both better and cheaper.

Local leaders are also grappling with the reality that many national and regional governments have decentralized decision making during the pandemic, empowering local leaders to assume broader responsibilities as they address pressing public needs and the attendant soaring costs. The challenge involves balancing 'top-down' directives with 'bottom-up' citizen-customer requests. These competing inputs can require a new way of organizing and coalescing all stakeholders around service needs, issues and solutions. Intergovernmental boundaries are significant impediments to progress.

As they find themselves on the front lines to manage local services, fiscal challenges and economic growth, city leaders have an immediate need to pursue new economic strategies and solutions. This includes forging innovative private-sector partnerships that can help re-distribute costs and enhance the use of resources to meet service requirements.

Some cities are pursuing initiatives that can help them adopt a corporate approach to budget management, replacing traditional approaches to cost-cutting and budget-restraint strategies with innovative approaches that include partnerships with private enterprises and technology startups. They are also finding new ways to generate much-needed revenue and boost city finances, capitalizing on game-changing capabilities such as 5G, sensors, GPS, social media and the Internet of Things (IoT) to create a modern, income-generating urban model that holds significant potential for future prosperity and sustainability.



Lorraine Mackin

Global Head of Government
KPMG International

✉ lorraine.mackin@kpmg.co.uk



Stephen Beatty

Global Chairman (Non-Exec), Infrastructure
Head, Global Center of Excellence for
Cities and Local Government
KPMG International
✉ sbeatty@kpmg.ca

The exodus from offices and workplaces to residential workspaces, and the movement of many employees to smaller, more-affordable communities post-pandemic can also help financially constrained cities eliminate significant overhead costs by capitalizing on the opportunity to downsize from large, centralized workplaces.

The journey ahead is putting city leaders to the test amid fast-changing public needs and expectations, intense fiscal challenges, the costs and complexities of transformational change and the overarching need for a clear vision of what urban living will look like tomorrow. But cities everywhere are poised to shape an exciting future using modern technology and data-driven approaches to create robust, agile, highly efficient organizations that put people at the center of tomorrow's urban settings. Much is possible, but there will be a need to shift mindsets and embrace new and sometimes frightening approaches to deliver the types of services citizens and stakeholders deserve.



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**Creating an experience-centric
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It has become easy in our hyperconnected, fast-moving consumer world to view citizens and customers through the same lens, when in today's reality, customers and citizens differ in terms of their specific behaviors, needs and expectations. Cities have a responsibility today to identify, understand and respond to the diverse needs of all stakeholders they serve. Creating a true experience-centric ecosystem will help define the look, feel and function of tomorrow's cities.

Simply put, citizens have similar but often deeper expectations, requirements and rights than the typical everyday customers, residents or visitors engaged in a transaction-based relationship that provides products and services. In essence, a citizen has the right to expect and receive timely, precise, citizen-focused services and experiences that effectively and consistently cater to their unique personal needs as well as those of the common good.

This translates into a significantly more complex relationship between citizens and cities, and the inevitable need for municipal governments to evolve accordingly — particularly as the modern, personalized, experience-centric services being provided by today's businesses continue to influence and heighten the service expectations of citizens.

We view this as the 'citizen-customer' paradigm. Citizens — individuals and business constituents alike — increasingly view themselves as 'citizen-customers' with growing expectations of municipal services and the experience provided. In turn, future-focused cities need to model their services and processes after the best of today's customer-centric companies, effectively meeting the community-wide needs of all constituents in today's new reality.

Modernizing services, accelerating responses and optimizing the end-to-end citizen-customer journey should become the new norm for cities and their

services. Strategic and intentional digital adoption and connectivity is an inevitable way forward. But successful transformation should also look beyond new technology to include a precise understanding of exactly how modern digital capabilities and services will benefit every citizen-customer being served.

As today's city administrators explore and unlock new capabilities, they should also have an 'ear to the ground,' using technology and new channels to hear their communities in new ways and ultimately respond effectively to the array of signals emanating daily from those they are responsible to serve. The future involves creating an experience-centric ecosystem of services and information sharing, and forward-looking cities are increasingly embracing the game-changing power of digital technology to become more attuned and responsive to public needs.

Administrators can increasingly listen to the weak signals emitted by those referred to as the 'silent majority' to optimize planning, development, service delivery and ultimately sustainability. However, getting better at listening can sound like 'spying' and care must be taken at every junction to protect and even enhance citizens' rights to the privacy of their personal information.

Consider, for example, the typical '311' municipal information and call-in systems serving many North American cities today. Designed to accelerate service and meet specific public needs, they generally remain simplistic, transactional and increasingly obsolete in nature. In the usual scenario, a citizen or business will report the need for a public service — such as a neighborhood road repair — and the appropriate city service provider will eventually respond, usually with no given timeline provided. Those seeking help are left with no communication or insight into when — or indeed if — the requested work might be done. Transaction complete?



To compare, more advanced '311' call-in systems are now serving some major cities like Boston in new ways. A citizen can transmit a mobile phone image of a local roadway in need of repair. Their message to the city automatically includes the repair site location via GPS, and a work order is automatically created and issued. Work is quickly completed and the person making the original request receives a cell phone image of the repaired site. Transaction complete.

Service experience as a new battleground

From an experiential perspective, there is no doubt that citizens' expectations of government are being influenced continuously. They are being influenced by every interaction and transaction that people experience when engaging as valued customers with today's data-driven, consumer-centric businesses.

In the age of the customer, make no mistake — 'experience' is poised to be the battleground for businesses and municipal governments alike. Cities should therefore recognize the impact of modern customer experiences on those they are serving each day across the broad spectrum of public service. Promoting service optimization, responsive delivery and end-to-end citizen-customer journeys should be the new norm for cities and their services. At the same time, cities should continue to provide bricks-and-mortar infrastructure and facilities to consistently meet the needs of those who are not fully digitally enabled.

Like today's high-performing, market-leading businesses, forward-looking city leaders should view the experience they are delivering, and its purpose, in terms of what each citizen-customer is trying to achieve during every interaction.

Considering the precise experience that is required to meet the expectations and needs of each can help create the right alignment of services that governments should provide going forward.

In recent years, there has been a monumental pivot from 'inside-out' thinking — a focus on how organizations can optimize their internal processes — to an 'outside-in' approach that begins with a comprehensive view of the customer perspective to maximize efficiency. The organization thus becomes much more attuned to the stakeholders they are serving.

While businesses have boldly set the pace on this front, local governments generally still need to pivot to a new mindset that replaces age-old 'inside-out' perspectives and approaches with intentional digital adoption and experiences that optimize services and outcomes.

Providing an appropriate modern experience can be crucial to the success of every interaction with the public, whether for an occasional transaction, such as a vehicle license renewal, or as part of a long-term relationship consisting of ongoing transactions and interactions, such as monthly property taxes, utility payments, health services, education and beyond.

One example of a modern, integrated digital experience was launched in Saudi Arabia during the peak of the pandemic, initially just to facilitate the issuance of movement permits during the curfew period. As movement restrictions were eased, the Tawakkalna app had already integrated a wide range of data points and linked many government entities with new services.⁸ At first, this focused on pandemic-related functionalities — including booking vaccine appointments and carrying a virtual healthcare passport. Tawakkalna now holds digital documents such as resident IDs, driver's licenses and vehicle registrations that users no longer need to carry physically.⁹

Understanding constituents and designing modern experiences from the 'outside-in' can help align government services to meet the needs of all citizen-customers.

Success demands insights into what citizens do, say and share

While cities pursue modern services for a new era, it is crucial to understand that the totality of municipal services and experiences can ultimately impact public and individual perceptions and overall satisfaction regarding the services provided. Beyond listening and hearing public signals in new ways, the challenge also involves the need to connect and align typically siloed and disconnected local services, departments and databases.

Modern, fully connected digital infrastructure can help unlock powerful new capabilities for cities to enhance their understanding of public needs and experience expectations. This has become particularly important amid the global pandemic's far-reaching disruption and the resulting critical need for health services, emergency support spending and subsidies, unemployment benefits and more for affected individuals, businesses and communities.

Meeting the challenge of hearing and understanding public needs and experience expectations is hard work that demands, as previously noted, a clear and consistent focus on what *all* stakeholders are saying — both the soft and the loud signals emanating from those being served. Social media channels, online reviews, satisfaction e-surveys and the like are but a few examples of how cities can tap into public thinking and calibrate services, as is the smart use of data and analytics for timely insights that drive appropriate and satisfying services.



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The consumer behavior concepts of stated preference ('what I say I will do') and revealed preference ('what I *actually* do') have long been a source of error in product and service planning. In an increasingly digital world, this gap should eventually close.

Ultimately, like businesses, the innovative opportunities for municipal governments to hear the voices of every stakeholder, citizen and customer alike in today's experience-centric consumer culture have never been greater. Ideally, cities are 'triangulating' their efforts on this front — listening and observing behaviors related to what people are *doing*, *saying* and *telling* others as part of their daily customer journeys and experiences.

To drive progress, some local leaders are pursuing innovative initiatives at the ground level, 'taking it to the streets' to gain firsthand insights into what people are doing, saying and expecting. These local leaders are thus forging closer relationships and greater personal familiarity with their communities, ultimately taking their local services — and public satisfaction — to exciting new levels.



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Can Dubai become the world's happiest city?

How do you measure happiness today? A 'Happiness Meter' can certainly help — and that's just what the city of Dubai has created to capture a timely city-wide view of customer happiness based on every service touchpoint. The interface lets users assess and rank their experience with both government and business services based on three ratings: *Satisfied*, *Neutral* or *Dissatisfied*.¹⁰

The Happiness Meter, among Dubai's first smart city initiatives, also provides a consolidated dashboard of all experience feedback, allowing government services and the private sector to evaluate customer experiences and satisfaction and drive ongoing

improvement. The dashboard also ranks customer experiences within various industry sectors and geographic areas, as well as differentiating between direct and web-based interactions — ultimately allowing leaders to continually assess, refine and enhance services provided to residents, businesses and visitors to the city.¹¹

The initiative is heralded as being among the first of its kind in the world to gauge experiences across an entire range of local services and it is taking Dubai ever closer to its stated mission: "Making Dubai the happiest city on earth."¹²

Hong Kong is putting people first

Hong Kong is turning to technology in new ways as it shapes public policy that is increasingly citizen-customer centric. Last year, the statutory maternity leave for employees under the Employment Ordinance was extended from 10 weeks to 14 weeks to provide increased benefits to working mothers and their families. Employers, who have extended the additional 4 weeks' maternity leave pay (MLP) to eligible employees may apply to the Reimbursement of Maternity Leave Pay (RMLP) Scheme for. The RMLP Scheme is an example of how governments are implementing a citizen-centric approach to delivering government services, putting people at the forefront when it comes to the design and implementation of key policies.

KPMG in China was engaged by the Labour Department of the Government of the Hong Kong Special Administrative Region of the People's Republic of China to help with the design and implementation of applicant processing, building and maintaining a bespoke portal and Disbursement Information System for the RMLP Scheme, setting up a service center to ensure public enquiries are addressed, and developing and executing a publicity plan to promote awareness of the RMLP Scheme in the community. The RMLP Scheme was launched on 1 April 2021 and had received over 3,800 applications as at end-September 2021.



Key takeaways

Creating intention-based, experience-centric services is poised to be the new battleground for cities.

Cities pursuing enhanced outcomes that will meet their vision for the future will also need to become more data-driven, while also breaking down existing silos and sharing data organization wide.

With the knowledge and understanding of what stakeholders need, and what is required to achieve appropriate new services and capabilities, it becomes critical to enable, execute and sustain the right experience. Smart cities are tapping into public opinion via social media, online reviews, satisfaction e-surveys and the like, as well as embracing the smart use of data and analytics for timely insights that can help drive appropriate responses and experiences.



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Digital City of Heilbronn 2030 plan

The German city of Heilbronn is using modern technology to establish new connections throughout the community as it works to shape the future for its over 125,000 inhabitants. The city's comprehensive strategy for success as a fully connected smart city is its Digital City of Heilbronn 2030 plan. It encourages the public to tap into local digital channels and provide timely input on local issues such as mobility in the city, education and the ongoing enhancement of administration and technology infrastructure to better serve all citizens and businesses.¹³

Heilbronn's guiding principle in developing its Digital City plan, with help from KPMG in Germany, states that technical solutions must not be an end in themselves, but used to solve problems, improve the quality of life of citizens and encourage active participation in urban life and its design."¹⁴



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**Smart technology adoption requires
clear objectives and timely data**



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Forward-looking cities are pursuing game-changing technologies that position them for an exciting new future as digitally enabled, data-driven, customer-centric ecosystems that are designed to consistently put each citizen-customer first. The pandemic has accelerated the urgency for innovative capabilities, approaches and services that can cater to quickly changing public demands and expectations. It has been an accelerant to the already burning flame of change.

Focusing on the capabilities that will truly enable citizen-customer-centric services will be a crucial component to success. A key lies in the ability of cities and their leaders to shift their approach to implementing modern technology. Rather than focusing on rapid implementation, it is important to first recognize the impact technology will have on

those it is being implemented to serve. People's mindset may be the greatest barrier to inevitable change.

The rapid and ongoing emergence of fully connected smart cities reveals promising and highly productive new ways technology can be put in the service of people. Digital technologies are often embraced for their potential to unlock effective urban solutions, but they are only valuable when they allow city authorities to deliver services that appropriately meet public needs.

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service delivery and efficiency. City leaders should adapt and respond to a variety of challenges by clearly understanding the nature of diverse issues and their potential solutions. Aligning precise and efficient solutions to each emerging challenge will be crucial to putting technology in the service of people. Despite its speed, the change is not expected to happen overnight and traditional models of citizen access will likely need to be maintained for a material period.

It is often the case that cities and local governments ambitiously undertake initiatives without a well-developed vision regarding which of today's powerful technologies will enable them to fully meet their goals and public needs. In addition to producing sub-optimal results, these initiatives can also risk costly delays and can be a waste of invested resources.



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The journey begins with a clear destination

Transformational digital technology and smart data use can enable cities to bring experience-centric service to exciting new levels of responsiveness and efficiency. But the journey forward cannot begin without a clear destination. City leaders will need new capabilities to accelerate the delivery of solutions toward today's complicated challenges, while also embracing technology and data-driven insights to accurately assess each emerging new challenge and its potential solutions.

While there are revealing examples of what smart cities are accomplishing with strategic approaches and initiatives, KPMG professionals are also seeing examples in their own work with clients. KPMG in Australia is currently working with the Land Transport Authority to implement new digital capabilities and payment processes that are designed to help enhance the efficiency and cost management of public transportation.

There are growing global players taking strategic transformation approaches aimed at generating outcomes and efficiencies to deliver customer-centric services. In southeast Asia, for example, so-called super-app Grab, which started out as an Uber-like driving service, is now delivering an array of other services.

Recognizing that the region's cities were increasingly congested, that public infrastructure was limited and that widening income inequality was leaving the less-privileged underserved, Singapore-based Grab has helped serve millions of consumers, merchants, drivers and delivery partners.

Grab's consumers get fast product and food delivery, safety assurance and value, merchant partners enjoy broad reach, efficiency and tools to drive growth, and driver/delivery partners are receiving technology to enhance and grow their operations. Grab's services include digital-wallet payment processes as well as financial and insurance products.¹⁵

At the same time, KPMG in Singapore's work with KrisPay, the digital wallet and customer reward-points app that Singapore Airlines offers, is delivering new capabilities for customers to use earned airline points for purchases with dozens of other businesses — from groceries, meals and bubble tea to hotels, auto fuel, apparel and sports gear. The customer data being generated 24/7 by this ecosystem positions the airline to continually personalize and customize its services and offerings based on its understanding of each customer's specific preferences and buying behaviors.¹⁶

These examples illustrate the potential of digital technology and smart data use to enable and continually enhance personalized customer service — and they emphasize the critical importance of a

well-defined roadmap that optimizes the prospects for success. In many cases, collaborative partnerships with service providers are advancing progress as the pace of change gains momentum and public expectations continue to evolve.

Cities need to put every customer first

The global pandemic has served to accelerate digital innovation and transform services among cities and all levels of government amid emergency conditions. While the journey continues, however, research reveals that there is still significant ground to cover in terms of effectively implementing modern technology in ways that provide true customer centrality for a new era.

Forrester's Customer Experience Index research shows that governments, despite emerging technology and evolving public expectations, continue to trail the private sector in providing a modern, customer-centric experience. Research shows that they provide poorer customer experience than any private-sector industry and that most government customer experience has stagnated for years while private-sector customer experiences continually improve.¹⁷ Fewer than half are confident in their analytics technology and data-enrichment capabilities — capabilities that are indispensable in providing data-based insights that enable citizen-customer-centric services and ongoing innovation.¹⁸



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The research also indicates, however, that many of today's city leaders unfortunately appear overconfident about their customer-centricity focus and capabilities. More than one-third, 37 percent, rate themselves as more customer-centric than comparable organizations. In our view, there appears to be a lack of awareness regarding what these

leaders believe they are accomplishing and what they are achieving to transform capabilities and services for a new era of needs and expectations.¹⁹

Ultimately, while there are remarkable examples of what the future holds, progress on a widening scale will demand that cities go beyond the rapid pursuit of

modern technology — focusing first on how digital capabilities can enable personalized customer-centric services that meet the diverse and ever-evolving needs of those being served.



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Kuala Lumpur aims to be a world-leading smart city

With a bold vision to solve urban and environmental challenges in ways that will help it meet both national objectives and the UN Sustainable Development Goals (SDGs), Kuala Lumpur is embarking on a five-year journey to transform itself into a leading smart city.

With a population of about 1.75 million and as the cultural, financial and economic center of Malaysia, Kuala Lumpur's transformation goal under its Smart City Master Plan 2021–2025 is to become a world leader as a smart, fully connected, citizen-centric city.

City leaders have developed a comprehensive five-year plan to implement new digital capabilities that will connect the city to residents, businesses and visitors as never before — ultimately positioning the city to become responsive to public needs as a truly data-driven organization. Along the way, city leaders will reach out to the community for public input on how to meet the city's future vision. The city's master plan is based on implementing what it considers seven key 'Smart City Components' for success:

— **Smart Economy** — A city encouraging connected, enabled communities.

— **Smart Living** — A city enriched by vibrant, liveable places.

— **Smart Environment** — A city with low carbon emissions and a clean environment.

— **Smart People** — A city developing talented, intellectual communities.

— **Smart Government** — A city encouraging integrated, open data culture.

— **Smart Mobility** — A city providing people-centric, efficient mobility.

— **Smart Digital Infrastructure** — A city advancing a modern, reliable network.

Planned initiatives for smart city applications include smart mobility and smart enforcements. Other initiatives include new capabilities that will capitalize on the connectivity and power of the Internet of Things to enhance the city's environmental, safety and disaster management. An urban observatory will be developed to assist local authorities and other stakeholders to generate information on social and economic issues and challenges requiring immediate solutions. Big data analytics will be implemented to enhance the city's ability to identify and rapidly respond to emerging public needs.



Key takeaways

Cities and their leaders looking to provide a new world of experience-centric digital services should shift their typical focus from rapid technology implementation and first understand how the application of technology can impact those it is being implemented to serve.

With objectives and needs precisely defined, it becomes essential to understand which technologies, capabilities and expertise can best deliver the required outcomes.

Dedicating the time and costs needed for smart and thorough planning is critical to success. Partnering with the right solution provider can enable rapid and efficient transformation toward the desired future state.



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Data analytics agency expects to revolutionize services in Bogotá

The Colombian city of Bogotá has launched a data analytics agency that is being seen by local leaders as a breakthrough in how the city will use data to revolutionize its public-service capabilities while enhancing public safety and crime prevention.

A new agency named AGATA is responsible for delivering analytics technology that will provide a 360-view of citizens and enhance the management of all public services. The city will provide automated responses to service requests it receives from social media, as well as analyze smart-sensor data city-wide to reduce energy consumption, manage traffic and street parking, and assess environmental risks related to floods, landslides or forest fires.

"Without connectivity, there is no inclusion in the 21st century, and that is why we want

to make Bogotá a smart, safe and more transparent city for all its citizens," says Bogotá Mayor Claudia López. "Bogotá needs to transform information into data so that citizens can make better decisions and that is what analytics are for."²⁰

AGATA involves a strategic alliance between the city and Bogotá Telecommunications Co., Bogotá Energy Group, and the Bogotá Aqueduct and Sewerage Company, all of which will provide data that will drive analysis and timely responses. Using analytics for crime prevention is also a priority. AGATA will have new capabilities to monitor the city's security cameras and develop predictive data-based models aimed at reducing crime, including the use of emerging technologies such as blockchain.²¹



Managing benefits with an easy self-service app

More than 250,000 District of Columbia (DC) residents in the US depend on the District for vital cash, food and health benefits. The DC Department of Health Care Finance (DHCF), in collaboration with the Department of Human Services (DHS), was in the middle of a system modernization effort with KPMG in the US when COVID-19 hit. Until then, residents had to go in person to service centers or phone into a call center to manage benefits. With service centers closing and the need for benefits surging, call volumes skyrocketed. DC DHS leaders and KPMG professionals changed the focus overnight: mobile-first.

KPMG professionals helped the client develop a new mobile platform that provides an easy, self-service way for DC residents to apply for, recertify and update their human services benefits. They used an agile

approach to develop the mobile solution, which allowed DC to monitor progress and reduce functional and design gaps, especially important to avoid benefits interruptions and keep residents safer during the pandemic. KPMG's human-centric design and change management approach has created a smooth digital experience for caseworkers and residents. The platform integrates with the case management system so caseworkers have fewer manual processes and can more efficiently and effectively serve residents.

Residents quickly adopted the mobile app, with more than 50,000 downloads to date, consistent 4.6 to 4.7 ratings in the Apple and Google Play stores, and effusive reviews online. The benefits of the digital transformation of services continue to be felt by the residents of DC and the government agencies.



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City living is going local in exciting new ways



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A 'one-size-fits-all' approach — think mass production — has been the prevailing mindset of the world's urban planners for the last 100 years. But unprecedented trends that are already revolutionizing the look, feel and function of today's cities are rapidly rendering this mindset obsolete. Health and well-being are taking center stage among cities looking to create a new and reimagined future for urban life.

The global pandemic's profound impact has accelerated the pace of emerging changes that today hold unmistakable implications for the decline of the traditional 'centralized city' model and the future of cities. Long-embraced key assumptions of traditional urban planning are being challenged, prompting cities and their leaders to take a hard look at how they will rethink the future.

Cities are now at a historic inflection point as health, sustainability and community well-being gain new prominence in the public eye. And this new environment should demand a new mindset and strategic planning toward smart, sustainable, innovative cities featuring technologies and enabling infrastructures that support exciting new ways of living, working and playing while respecting local conditions and cultural norms.

The message to city leaders should be clear. A future of economic, social, environmental and cultural well-being and progress calls for services, capabilities and choices that cater to the evolving needs of people and communities as citizen-customers look to maximize the utility of city life based on their own terms and personal preferences.



City life is going local as never before

With the pandemic-induced shift in work models from city-centered workplaces to residential settings, people everywhere are typically eliminating the time, effort and cost needed for the daily commute to work. Many are also avoiding travel or exposure to crowds in an effort to safeguard their health. As a result, fewer employees are occupying once busy offices and facilities, public transit use has declined and urban thoroughfares in many cities are experiencing less congestion and, in some cases, different types of congestion.

While the decline of the central business district model has been underway for some time, the pandemic has sparked a new level of urgency and activity that continues to reshape global workforces as employees enthusiastically adopt the work-from-home and hybrid models. Beyond the rapid transformation of their work lives, people are increasingly embracing a localized approach to life and leisure as more activities shift to local communities and convenient online services in the wake of the pandemic.

Health and well-being have also gained greater prominence on the public agenda. As a result, there is a dramatic new focus worldwide on open spaces and green infrastructure to enhance local living and community well-being, including more parks, health and fitness amenities and bike paths.

While localized lifestyles gain popularity, however, people are not about to abandon city centers and the civic spaces that, beyond being economically productive, contribute to the vibrance and excitement of urban life. They will continue to embrace urban amenities as the focus of community activities such as cultural, sporting and special mega-events. City centers will remain vibrant and there is already much



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activity resuming as solutions to the pandemic and new public-health safeguards continue to emerge.

But amid the fast-evolving urban landscape, there should be less dependence on — and need for — traditional transportation infrastructure in the form of local and inter-city public transit, major highways, high-speed rail systems and sprawling airports. We expect that cities will also be rethinking the need for massive and costly skyscrapers as workforces and the use of space by businesses continue to evolve.

Has the 15-minute city's time arrived?

French scientist and urban planning expert Carlos Moreno makes the case for what he calls the '15-minute city', noting that living in cities means "accepting a certain level of dysfunction today: long commutes, noisy streets, underutilized spaces."²²

The future is about putting people at the center of urban transformation to provide convenient and reliable access to all of the services needed to live, learn and thrive within their immediate vicinity.

While it's an innovative aspiration for developing cities, the concept of a 15-minute city has limited potential for today's megacities, given the prohibitive cost of redesigning current infrastructures in ways that will truly transform city life as prescribed. At the same time, however, the concept is proving not just feasible but on the horizon for some ambitious cities in countries such as the Netherlands, for example.

Other cities, meanwhile, in a bid to evolve out of the traditional central business district model, are pursuing visions of a future that includes a '30-minute city.' Sydney is among those now working hard to implement an innovative 30-minute city concept via multi-billion dollar investments in transit, road and rail infrastructure across three urban fronts. Sydney has been developing its 'three-cities' model for some time and has two downsized business districts in place — Sydney City and North Sydney.

The Colombian city of Bogotá is also on track to significantly improve local life and reduce travel times and traffic congestion with the development of the first line of the Bogotá Metro rapid-transit service, which is now under construction and slated to be in operation by 2028.²³

The US\$5.16-billion, 24-kilometer project is seen as a major breakthrough in solving the city's traffic congestion and lack of sustainable public-transit services, as both local and national governments have been unsuccessful in launching such a project for more than 40 years. Bogotá currently has no rail service and its public-transit system relies on bus service. KPMG in Colombia has collaborated with the city and its partners to structure and launch the initiative. When complete, the new 16-station line will be the main transit line for the public, giving city residents, business and visitors an unprecedented level of mobility and convenience.²⁴

A city without cars in Saudi Arabia

Imagine a city with no cars, no streets and no carbon emissions. That's the vision for a futuristic city called The Line that is being planned as part of Saudi Arabia's ground-breaking US\$500-billion NEOM digital transformation megaproject. The Line is envisioned as a cross-border city in Tabuk Province that will incorporate smart city technologies for all. The city will cover a total area of 26,500 square kilometers (10,200 square miles), will extend 460 kilometers along the coast of the Red Sea, and will also serve as an exciting tourist destination.²⁵

With construction set to begin this year, The Line will be built as a belt of communities connected by high-speed transit and autonomous mobility solutions serving an estimated population of one million residents. It will contain no conventional cars or roads — a decision aimed at basing life in The Line around walkability and healthier lifestyles. As a result, daily needs like schools, medical clinics, leisure facilities and parks will be within a five-minute walk of anyone's place of residence. Beyond daily needs, it is expected that no journey on The Line will be longer than 20 minutes.²⁶



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An innovative framework for the future²⁷

The World Economic Forum's (WEF) April 2021 Framework for the Future of Real Estate report urges a future in which buildings and cities "provide comfort, are equipped for the most unprecedented events, support people's health and are affordable and accessible for all of society." The report emphasizes the need for tomorrow's cities to provide buildings and spaces that are liveable, sustainable, resilient and affordable for all.

Liveability: The WEF notes that in major cities around the world, people spend about 90 percent of their day indoors — making the liveability of buildings instrumental to well-being. This calls for the development of smart, digitally enabled buildings and communities that feature "inclusive, human-centric designs" that consistently meet the specific needs of all via data-informed services.

Sustainability: Noting that buildings currently account for 40 percent of global greenhouse gas emissions and 50 percent of the world's energy consumption, the WEF is calling for buildings to be optimized for zero carbon output "in every aspect — from construction to operations." The report also warns that to meet existing zero-carbon goals, cities worldwide must "accelerate action" to drive greater progress.

Resilience: The future demands a new focus on resilience, the WEF warns, making cities and properties capable of responding to potential future challenges that include "unforeseen natural and man-made events," such as climate, financial and health emergencies. Cities also need to ensure a future in which buildings are flexible enough to adapt to ever-evolving patterns of working and living.

Affordability: The need for affordable rents and low barriers to home ownership will be indispensable, along with making adequate transportation and essential

services available to all. "The provision of fair access to quality space to live and do business is essential to the overall health of society," the WEF suggests.

The WEF and other global organizations are providing compelling visions and insights for the future. The WEF calls its framework for change "a conceptual infrastructure onto which the whole apparatus of 21st-century development can be grafted, allowing it to flourish in a climate that — literally and figuratively — is changing at an alarming pace."

But activating local leaders and society at large to heighten their focus on the need for tangible change — and accessing public spending to support it — remains an immense challenge. And this is despite evidence of the pressing need for change as climate-related global catastrophes increase in frequency and impact.

At the same time, there is good reason for hope. The pandemic has demonstrated how profound change can

rapidly emerge in society when necessary and, as such, should be instructive to leaders and their communities on the potential to drive continued evolution toward cities that are truly liveable, sustainable, resilient and affordable. But the time to act is now.²⁸

Setting an example is France's La Rochelle Urban Community, a local authority of 28 municipalities and nearly 200,000 residents on the west coast of France. La Rochelle is ambitiously pursuing a ground-breaking digital initiative that will give it the capability to collect emissions-related data from all of the territory's citizens, businesses and organizations. The data-gathering digital platform has one objective: to explore and take strategic action in response to the global climate crisis. With broad new capabilities to track carbon emissions, La Rochelle will gain critical new visibility into its current carbon footprint by sector and the actions needed to drive improvements toward carbon neutrality.²⁹



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A better life for every citizen

Progress toward modern urban living will require a sustained focus on enhancing the quality of life for every citizen. Unfortunately, income inequality, chronic unemployment, a lack of affordable housing, inadequate access to basic necessities and other significant challenges continue to impair progress for many cities and their occupants.

As part of Vision 2030, Saudi Arabia's widescale transformation program, the Ministry of Municipal, Rural Affairs and Housing launched a range of housing solutions to increase home ownership among its citizens. The ministry launched a convenient platform called Sakani, allowing users to browse through available projects, apply and get instant approval based on their eligibility. Sakani was established to address inefficiencies in the affordable housing market and to better and more quickly match homebuyers with homes.³⁰

In Australia, meanwhile, the City Deals initiative is creating new partnerships among the three levels of government and local communities to work toward a shared vision for productive and liveable cities. The goal is to align planning, investment and governance in new ways that will accelerate growth and job creation, stimulate urban renewal and drive economic reforms. Eight city deals have been agreed on to date, including Perth and Western Sydney.

We believe the future demands innovative strategies and initiatives that proactively recognize and respond to the needs and well-being of every citizen — providing services on an equitable basis that include the less affluent, those with disabilities, and underrepresented groups, including indigenous communities.

Cities with large pockets of economic, social and health inequities are often characterized today by a dual economy of haves and have-nots, high congestion, sanitation challenges, environmental risks and other significant constraints. For those living relatively marginalized existences, their quality of life and security needs to be prioritized as cities continue the journey toward an inclusive new future.

Modern technology can provide powerful solutions, as many future-enabled cities are demonstrating. The lesson for other cities and leaders is that success demands implementing technology with a clear vision and outcome-focused strategies. A way forward is to harness the power of technology to gather data, generate precise and timely insights, and implement smart approaches and solutions that target the spectrum of core issues to improve the quality of life for all.

Strategic use of technology to address today's inequity and inclusion challenges can help improve the reach of public services and deliver access to citizens in neighborhoods, communities and rural areas that remain largely isolated or underrepresented. Digital capabilities can serve to significantly reduce existing barriers to much needed services; for example, healthcare and education. As modern connections to all citizens bridge today's service gaps, cities can capitalize on data-driven capabilities to accurately monitor, measure and optimize performance across the board.

In addition, as cities drive greater efficiency in the service of all citizens while pursuing future growth and success, it will be critical to ensure access to STEM (Science, Technology, Engineering, and Mathematics) education as widely and diversely as possible in order to stimulate the conditions required for ongoing improvement and innovation.

Many cities are reporting progress as their focus shifts to include programs dedicated to STEM skills. But deeper and wider progress is essential to encompass entire educational ecosystems — from early learning through to higher education and into lifelong learning.

Demand for modern skills is immense today amid disruption and the impact of technology in reshaping entire industries, leaving many people under-skilled and unemployed. Education for a new future of urban growth and prosperity should strategically align modern skills development with emerging opportunities. As society emerges from the pandemic, skills gaps in the economy are in stark relief. We hope leaders appreciate the profound challenges this poses.

We believe progress will require cities and their leaders to better understand the desired student experience, to implement new ways of delivering what students of all ages need, and to ensure that the cultures within institutions are ready to implement new technologies, partnerships and funding models.

Making health and safety a priority for progress

In response to the global pandemic, cities everywhere are dedicating significant new resources and funding toward an explosion of local initiatives aimed at enhancing public health and safety. Local leaders are typically making commendable efforts to reduce speed limits, convert roadways into pedestrian thoroughfares, develop bike lane networks and expand parks and civic spaces. Remember how popular public parks became at the pandemic's peak. We expect this evolution to be more permanent as people continue to pursue healthier lifestyles and settings.



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It's safe to say that the closer society gets to creating smart modern cities, the more it becomes clear that the possibilities are endless and that they will have a direct bearing on individual health and well-being.



Along the way, cities and their leaders have made commendable efforts to increase collaboration with private businesses to drive rapid and effective changes that are generating positive feedback and encouragement from the public. It's safe to say that the closer society gets to creating smart modern cities, the more it becomes clear that the possibilities are endless and that they will have a direct bearing on individual health and well-being.

Beyond health and safety enhancements, public well-being needs to include a heightened focus on security. New capabilities to monitor, identify and respond to public needs via smart mobility and technology solutions include smart cameras in public spaces and emerging digital tools and initiatives that let citizens interact in real time with city services to report on public needs, issues and problems.

Putting problems first, solutions second

While many cities are pursuing strategies and technologies that are improving their responsiveness to public needs, research shows that cities generally remain far more adept at identifying and understanding public needs than they are at delivering appropriate outcomes. But the future demands innovative services that are timely, efficient and outcome-based.

That should begin with a strategic new approach in which cities are dedicating the time, resources and funding needed to accurately identify service gaps and specific public needs prior to acquiring and implementing new technology. An outcome-based approach will require a new problem-first, solution-second mindset — one that ultimately enables the application of powerful modern technologies where they are needed and in ways that provide evidence-based, citizen-customer-centric solutions.

This includes the need for agile thinking and user-centric service design — a fundamental shift in the way people talk about, plan for and design urban outcomes. User-centric service design is a way of thinking that ensures each required outcome is neither prescribed nor over-defined but focused on each user's specific needs. It calls on its practitioners to precisely identify and engage with user needs in order to ensure that the design outcome is truly fit for purpose. The cross-mapping to one size *doesn't* fit all should be obvious.

Cities should also ensure that red tape and age-old bureaucratic processes from centuries past are abolished, that data is precise and fully valued, and that incentives are in place to attract the private sector to deliver smart infrastructure and technology. Many cities continue to lack the digital tools, platforms and skills needed to deliver innovative services that are data-driven. Reliance on town halls, paper-based surveys, poorly executed online surveys and the like continues.



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Many cities are transforming their cultures into modern, agile, responsive governing systems, partnering with industry to rapidly and cost-effectively acquire the skills and capabilities needed to curate, analyze, understand and respond to public inputs, needs and preferences, both stated and revealed.

London, for example, has established a Smart London digital platform that encourages the public to provide public-service feedback that's proving instrumental in helping to create the type of experiences needed for the future. London's stated mission is to become the world's 'smartest city', using technology, data and valuable public input to meet public needs and enhance future services, growth and prosperity.

In Barcelona, local residents use the BCN Now platform to flag city problems, create petitions and vote in participatory budgeting programs. The Australian city of Ipswich has taken progressive steps to lift the lid on decision-making processes, providing the public with access to the city's entire budget. Iceland's Better Reykjavík initiative is giving local residents revolutionary new opportunities to present their ideas on local issues and help city leaders on their journey to transform public services. Reykjavík's participatory approach to governing is encouraging the public to provide input on local budgeting, planning and innovation initiatives.³¹

Malta is putting the digital citizen front and center with its national digital strategy called Malta Digitali, which sets out the government's commitment to seeing Malta "prosper as a digitally enabled nation in all sectors of society."³² The strategy focuses on enabling members of the public to become modern digital citizens, each possessing specific rights and responsibilities as well as the ability to access and use modern communications technology and tools.

Malta Digitali's vision is to securely provide broad digital access that makes digital services affordable, secure and accessible to all regardless of skills or economic status. Malta's strategy also aims to open public access to government data in order to stimulate business innovation.³³

In our view, technology that enables new forms of communication, collaboration and relationship building, combined with processes and structures that link the outcomes of civic deliberations to decision making, while respecting cultural norms and traditions, is the way forward.

Modern capabilities and data-driven approaches will continue to help unlock game-changing new capabilities for e-governance and participatory democracy platforms that offer immense potential for the future. This can help cities and businesses be better positioned to identify and address needs, issues and concerns in powerful new ways, putting public voices at the center of smart local decision making.



Key takeaways

Progress toward modern urban living will include a sustained focus on enhancing the well-being and quality of life for each and every citizen-customer, using technology to provide service access that will address economic, social and health inequities. We believe inclusion is the way forward.

Cities should use technology to address the full spectrum of problem solving toward a new future: gather evidence, analyze needs and formulate solutions, as opposed to randomly implementing technology for limited gains.

City leaders should invest in new digital and data capabilities for modern governance to build new cultures of innovation, agility and flexibility, while respecting the fact that not all individual people are fully digitally enabled.



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Toronto is making waves on the waterfront

Toronto's Quayside waterfront development is being designed to create what the city calls "a dynamic, inclusive and resilient community that plays a pivotal role in reorienting the city towards Lake Ontario."³⁴

The Quayside development, covering 12 acres (4.9 hectares), is envisioned as a mixed-use project delivering climate leadership, modern design and future-focused innovation to diverse and inclusive communities. Toronto's waterfront has been evolving rapidly in recent years, with infrastructure development agency Waterfront Toronto mandated to deliver revitalization projects that intend to transform the area to serve the needs of the city's fast-growing population and its ever-increasing number of visitors.

As the city notes: "This area of our waterfront represents an extraordinary opportunity to create one of Canada's most sustainable low-carbon communities, serving people of all ages, backgrounds, abilities and incomes. A place that is inviting and lively year-round, providing retail, restaurants, entertainment and

cultural experiences to seamlessly fuse the city to the water. The project will also serve as a hub that links surrounding neighborhoods and business areas."³⁵

In March 2021, Waterfront Toronto initiated its search for a development partner for Quayside. The key areas of focus for the project include sustainable commercial buildings and housing. The project also aims to offer a diverse range of community-based amenities and programs for residents and businesses alike.

Also key to the project is the creation of affordable housing to encourage a fully inclusive community for future residents. Quayside will incorporate multiple land uses that reflect a modern community.

Waterfront Toronto's goal is to leverage this project as a test bed for cities of the future, incorporating cutting-edge technologies and design specifications to create a sustainable community featuring near-zero greenhouse gas emissions and minimal energy consumption.

Rebuilding to create greener, safer cities for all

**A sustainable future demands a new
sense of urgency**



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As global cities respond to the COVID-19 pandemic's profound impact, many are recognizing that amid the disruption and emerging trends stands a remarkable opportunity to harness today's momentum and accelerate progress toward a sustainable future — ultimately 'rebuilding' to transform urban living for an exciting new era. The journey to success calls for new forms of collaboration and innovative partnerships that will serve as the lifeblood of healthier cities that are positioned for growth and prosperity.

The global pandemic has revealed how quickly the power of technology in this increasingly connected world can play a transformational role by enabling people, businesses and their local governments to replace traditional processes with modern approaches.

The pandemic-induced population trend in Australia, for example, reveals that population growth in the major cities of Sydney and Melbourne plunged amid factors that include less international migration to Australia during lockdowns, but also the relocation of many people from cities to more affordable regions while taking advantage of the remote working trend. In fact in 2019–20, Sydney and Melbourne experienced their lowest population growth in a decade.³⁶

At the same time, people are increasingly demanding that cities and their leaders sharpen their focus on the common good in ways that will — without further delay — help ensure a sustainable future for all. And as global experts continue to warn, there is clearly no time to lose in putting sustainable cities on the map.

The clock is indeed ticking and the UN's Sustainable Development Goals (SDGs) are a call to action for a safer, healthier, more sustainable future — a blueprint to address pressing global challenges that

include climate change, environmental degradation, poverty, inequality and unemployment.³⁷ And while progress is being made in many places, overall action to meet the UN's 2030 Agenda for Sustainable Development is failing to advance at the speed or scale required.

"The time for half-measures, incrementalism and siloed actors is over," the Secretary General of United Cities, Kari Aina Eik, has warned.³⁸ United Cities is a Vienna-based not-for-profit organization that is implementing new programs aimed at enabling international organizations, global businesses and the public at large to collaborate in supporting global cities and communities to achieve the UN's SDGs.

Meanwhile, the UN's Intergovernmental Panel on Climate Change (IPCC) has stated that today's urban policymakers "will play a key role in adapting to and driving solutions to climate change."³⁹ The IPCC issued its own warning in August on the need for greater progress, noting that:

- Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide and other greenhouse gas emissions occur in the coming decades;
- The earth's average surface temperature has increased faster since 1970 than in any other 50-year period over the last 2,000 years or more;
- Global surface temperatures will continue to increase until at least mid-century under all emissions scenarios considered.⁴⁰

No matter what, it is important to be culturally respectful. What is needed or possible in one place, jurisdiction or tradition, may not be in another, or perhaps not at the same time or in the same order. Each place, culture, jurisdiction will strive to resolve its future according to its own reality as defined by their specific challenges and priorities concerning the environment as well as their immediate local service needs.



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Leaders should act with a new sense of urgency

The time-sensitive message to cities and their leaders could not be clearer: the planet's future demands strategic action today. Cities will no doubt need to demonstrate a new sense of urgency to drive faster progress toward a more sustainable future. Cities will no doubt need to demonstrate a new sense of urgency to drive faster progress toward a more-sustainable future.

At the same time, the formidable challenge of accelerating action among cities, businesses and citizens is accompanied today by the critical need for funding to develop and implement modern, cost-saving sustainability initiatives at the local level. The pandemic has raised the funding challenge to critical new heights amid massive local stimulus programs and emergency funding for struggling citizens and businesses impacted by the health crisis.

The good news is that cities seeking solutions to create sustainable urban environments — and the means to pay for them — are benefiting from innovative partnerships and collaboration with the private sector, as well as tapping into significant new resources like the SDG Impact Fund. The fund's goal is to provide the financial resources needed today to support projects that align across the full spectrum of the UN SDGs as agreed upon by 193 countries. It's important to keep in mind, as noted earlier in our report, that sustainability is not necessarily more expensive and often more cost effective when creatively applied.

The SDG Impact Fund — which states that “humanity must now transition into an economic order that is regenerative, adaptable and inclusive” — matches fund donors to projects,

ideally streamlining the launch of pilot programs and the sharing of best practices.⁴¹ The innovative fund accepts liquid and illiquid assets that include real estate, stocks, bonds and cash. The fund also accepts blockchain, crypto and all forms of tokenized assets with no fiat conversion required.

The SDG Impact Fund is breaking important new ground with its efforts to “regenerate the world” by bridging existing gaps and forging powerful new connections between governments, businesses, NGOs and charities.

In Norway, a pilot program that has proven successful and that will be expanded involves the United for Smart Sustainable Cities (U4SSC) project, a UN initiative, that includes a set of key performance indicators (KPIs) for enabling smart, sustainable cities.⁴² The KPI method can help provide cities and local businesses with a standardized digital approach to collecting data and measuring progress related to the UN's Sustainable Development Goals and the impact of technology to achieve them. The U4SSC method includes several initiatives that will help stimulate innovative collaboration between the business community and the public sector. The ReSirkHub, for example, is a digital information platform that promotes the circular economy and encourages local recycling of raw materials. KPMG in Norway is already in the process of establishing the project internationally in collaboration with the U4SSC project.

Breaking down barriers to accelerate progress

Also noteworthy is a global alliance between KPMG in Norway and United Cities that is currently helping cities and municipalities become more inclusive,

safe, resilient and sustainable — as defined in SDG 11: *Sustainable Cities and Communities* — in order to meet the UN's 2030 agenda.

The KPMG in Norway and United Cities alliance is gathering critical research and data that measures progress among various peer cities, and sharing the timely insights and key learnings it gains to drive advancements among all global cities pursuing the UN's goals. This includes strategic efforts to identify gaps in current sustainability programs, capabilities and funding requirements. Investments in innovation hubs and digital twins are also being used to provide important insights on future requirements and potential challenges.

As part of the alliance, KPMG professionals and United Cities leaders have been providing instructive workshops with various city leaders to help them identify pressing local issues and implement targeted local solutions that include crucial new capabilities and financing strategies.

The innovative methodology of the program is breaking down traditional institutional boundaries and barriers in order to gather timely data and insights that deliver a broader view of existing ecosystems across specific regions, including government agencies, businesses and all relevant stakeholders. This approach to data and information sharing, combined with green-financing strategies and initiatives, is generating significant progress in the race to create more sustainable global cities.

Progress on financing local sustainability programs will be a key factor to success and cities everywhere are actively pursuing appropriate green-financing solutions. Green bonds, for example, are becoming a popular investment vehicle of choice for the private



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Digital transformation and exponential technology growth are expected to radically change the way cities are organized and built, helping to overcome challenges that include carbon emissions and pollution, urban density, affordability and fiscal restraints.

and public sectors to finance environmental projects such as clean power sources, low-carbon transport and energy-efficient buildings. While green bonds are being issued primarily by banks today, businesses are increasingly issuing their own bonds, including major global brands in the technology, utilities, automotive and consumer products sectors.

According to KPMG's 2021 CEO Outlook Survey, global organizations are raising their game to support ESG investment and drive change amid increased stakeholder pressure to rebuild toward a greener, fairer future. Many are embedding ESG into their business strategies as well as working more closely with municipal, regional and national governments to make good on their ESG commitments.

More than half of CEOs at high-growth organizations, 52 percent, believe that their ESG programs improve financial performance. CEOs also say they are looking to devote significant capital to becoming more sustainable, with 30 percent planning to invest more than 10 percent of revenues into their environmental efforts.

Harnessing technology for radical change

Digital transformation and exponential technology growth are expected to radically change the way cities are organized and built, helping to overcome challenges that include carbon emissions and

pollution, urban density, affordability and fiscal restraints.

The focus for today's cities should not be on technology itself — as is too often the case in response to fast-emerging changes —but on how the power of digital capabilities can truly benefit cities and their stakeholders. Unfocused digitalization dedicates resources to technologies that are not future flexible and do not address specific needs. Today's smart decisions are those aligned with a city's vision for tomorrow.

Therefore, in our view, success demands a strategic, outcome-oriented approach that balances technology's game-changing capabilities with a



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goal-oriented vision for the future, while maintaining appropriate awareness and tolerance toward risk and respecting cultural norms and traditions.

Also important will be the need for leadership and modern organizational cultures that foster increasingly collaborative and diverse environments, respond faster to change, and attract the required talent and modern skills to drive progress. On this front, businesses say they are moving forward.

Forrester research commissioned by KPMG shows that most decision makers surveyed — about two-thirds — currently believe that their workforce strategy and organizational design support today's city strategies and objectives.⁴³

At the same time, the research shows that decision makers also see the need to respond to ever-changing needs with greater speed and agility by improving both their partnering strategies and outcome management.⁴⁴

Ghana makes SDGs a budgeting priority

The government of Ghana is making its environmental goals a top priority, integrating into its national budgeting framework key financing needed for initiatives aimed at meeting the UN's SDGs. Ghana says it is among the first nations to do so, underscoring its commitment to creating a healthy future for its citizens and the planet.

"Ghana is taking the lead, globally, in developing a tracking system to ensure that the SDGs are achieved," Minister of Finance Ken Ofori-Atta notes in Ghana's initial SDGs Budget Baseline Report, which since 2018 has served as a template for an ongoing series of annual SDG budgeting reports. The reports track budget allocations at

all levels of government, including metropolitan, municipal and district assemblies.⁴⁵

As part of its commitment to meeting the objectives of the UN SDGs, the Government of Ghana collaborated with KPMG and the World Economic Forum to develop a 2021 report titled Ghana Country Financing Roadmap for the SDGs. As Ghana's President Nana Addo Dankwa Akufo-Addo stresses in the report: "The SDGs are more relevant today than ever before. The SDGs have become the driving factor in our national development policy formulation, development planning, program implementation and overall resource allocation."⁴⁶



Key takeaways

As the world's cities dedicate unprecedented resources and investments to improving sustainability and meeting global UN objectives, they should underpin the journey into the future with an appropriate outcome-based vision that is supported by timely data and insights.

In our view, collaboration among global cities and their leaders to work in partnership with each other and with private industry will be crucial to future progress, while enabling more rapid progress in the short term.

Dare to share — as collaboration and partnerships emerge, the sharing of timely data and insights among various government agencies and businesses will be needed to support strategy development and smart visions for a new future.



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New Zealand’s 2021 plan spotlights citizen well-being

New Zealand’s government has made its ambitions for a better future unmistakably clear with the name of its 2021 budget plan: Wellbeing Budget 2021: Securing Our Recovery.⁴⁷

The plan is a framework that New Zealand has been using since 2019 in a bid to look beyond traditional success metrics such as GDP growth in order to address social, economic and environmental outcomes as well. Alternative modes of transportation, child poverty and mental health are among the areas of focus in the 2021 budget, which specifically highlights human, natural, social, financial and physical capital as national priorities.

The central government is partnering with local governments to promote land development that will create thriving communities, affordable housing and environmental sustainability. The current budget includes, for example, an initiative to increase affordable housing in cities such as Auckland that face housing shortages. As the budget plan notes, the nation’s goal is “giving people the capabilities to live lives of purpose, balance and meaning.”⁴⁸



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India’s cleanest city uses new approaches to waste management

Indore City in central India has been ranked nationally as India's cleanest city five years in a row as of November 2021. Indore is the first city in India to successfully transform its daily delivery and monitoring of municipal waste management services in order to ensure full service coverage for all households, businesses and institutions.⁴⁹

Indore now has a GPS-based vehicle-tracking system to monitor and optimize public waste collection and the efficient deployment of field staff and resources. Mobile digital apps are also in use for the public to provide feedback, complaints and suggestions.

Meanwhile, the Government of Maharashtra has taken up a holistic initiative known as Majhi Vasundhara Abhiyan, or My Earth Campaign, to raise public awareness and engagement regarding climate change and environmental issues. In addition to encouraging active public participation in current climate change initiatives, the program is designed to continually identify dynamic and scalable new measures towards a sustainable environment.⁵⁰



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A once-in-a-century opportunity to catapult forward is upon us



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Global cities and their leaders now face a perfect storm of sudden and unanticipated challenges as they look to revolutionize public and citizen services, manage financial constraints and drive economic growth. It has also created significant permission to change how cities work, deliver services, and interact with citizens and stakeholders. This is an opportunity to catapult forward — a rare opportunity that should not be wasted.

While the pandemic has fueled the rapid emergence of remote work and innovative business models, it has also forced cities to respond with massive stimulus programs to support their communities and economies amid crisis conditions.

Intensifying the pressure on local and city leaders in today's dynamic economic environment is a

reality. Many national and regional governments have decentralized decision making in the wake of the pandemic, empowering local administrators or leaders to assume broader responsibilities as they grapple with today's pressing public needs and the attendant soaring costs.

With cities everywhere now on the front lines to manage and address evolving public needs, and fiscal challenges soaring as a result of the pandemic, city leaders will need to pursue new economic strategies and solutions. Municipalities in the province of Ontario, Canada, for example, are facing a projected nearly US\$2 billion funding shortfall in 2021 alone due to the pandemic's costly impact.⁵¹



The promise of innovative partnerships and new revenue sources

Some future-focused municipal governments are actively pursuing initiatives that will help them evolve toward a corporate approach to budget management amid the formidable fiscal challenges before them. They are replacing traditional cost-cutting and budget restraint strategies, for example, with innovative approaches that include productive partnerships with private enterprise and startups to support innovation and future economic growth. They are also pursuing new ways to generate much needed revenue and boost city finances.

While smart digitalization differs from city to city — ranging from the adoption of basic automation technologies that facilitate public services, smart city grids, to predictive analytics that can anticipate service and infrastructure challenges — technology is opening exciting new paths to revenue generation and economic growth. Cities are capitalizing on game-changing capabilities — seamless connectivity, 5G, sensors, GPS, social media, the IoT and more — to evolve from the traditional expenditure-led approach to a modern, income-generating model that holds significant potential for future prosperity.

Cities are realizing, for example, that as public service delivery becomes increasingly automated, accessible and convenient, citizens and businesses are willing to pay a bit more when such advantages eliminate the need for time-consuming and less efficient face-to-face services. As city leaders pursue a modern approach to enhancing revenues, they are also keenly tapping into industrial activity within local economies for its potential to offer massive revenue generation and job creation opportunities.

Along the way, of course, 'bridging the digital divide' with powerful new connections that unlock modern capabilities and growth opportunities becomes critical. Canada's



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capital city of Ottawa is tapping into the power of 5G as part of its smart city strategy to transform services and connectivity across both the city and surrounding villages and rural areas.

KPMG in Canada's work with the city to take its connectivity to the next level included an assessment of existing rural broadband connectivity challenges and a strategic roadmap detailing how the power of 5G provides a platform for smart digital economies as well as social change. KPMG professionals also completed a benchmark study of leading global practices, detailing how other cities are successfully solving their connectivity challenges as they journey into the future. Ottawa now has a high-level roadmap and workplan clarifying next steps and the critical decision points it faces as it takes the next step to becoming a hyperconnected digital economy.

Meanwhile, emerging global cities that have experienced relatively limited technology advancements to date are also taking advantage of the opportunity to progress forward by implementing new technologies that will ultimately accelerate productivity and economic growth. These cities are essentially 'leapfrogging' toward new digital capabilities, bypassing traditional development cycles and rapidly capitalizing on current technologies that can offer modern services, address development gaps and ultimately stimulate economic activity and growth.

Many developing cities and regions have already experienced the advantages of leapfrogging, as the initial emergence of smart phone technology allowed them to bypass the need for landline infrastructure and instead leap forward to the broad connectivity of mobile phones.

By taking this bold approach to transformation, emerging cities can transition more quickly into data-driven digital economies featuring smart, citizen-customer-centered ecosystems that will help contribute to increased economic activity and growth.

Workforce and workplace changes support economic growth and competitiveness

Pandemic-induced changes that are accelerating the adoption of new capabilities and approaches are also delivering significant new workforce efficiencies and cost savings across the spectrum of city agencies and departments.

The current exodus from offices and workplaces to residential workspaces, and the movement of many employees to smaller, more affordable communities, is a trend that positions today's financially constrained cities to capitalize on an unexpected opportunity to downsize from large centralized workplaces and eliminate significant overhead costs. No one knows how the live-work-play equation will ultimately resolve itself. It will likely be different in each city, country, jurisdiction and culture — but everyone needs to be acutely aware of the changes they see, their severity and the degree of permanence in order to optimize approaches and results.

The ongoing shift among many businesses to local manufacturing and low-cost geographies is also expected to deliver new cost savings and economic advantages to cities that rely on such organizations. The movement of workplaces and workforces to new locations should combine cost-saving advantages for businesses with the needs and preferences of employees, particularly amid talent shortages that demand new ways to attract employees and future skills.

In our view, businesses looking to remain competitive will not move simply because an area is the cheapest place to manufacture, but also because it offers a strong quality of life — a place where employees are happy to be. And achieving that balance will require collaboration among all levels

Why work from home if you can work from the beach?

Remote work has gained global popularity and island jurisdictions such as Barbados⁵² and Bermuda⁵³ are taking the concept to a creative new level with the launch of 'remote work visas' — offering people the opportunity to work from a tropical setting. The goal is to attract entrepreneurs and businesses that will help drive local economic activity while providing adventurous city dwellers a unique opportunity to experience a coveted island lifestyle while teleworking.

Barbados launched the Welcome Stamp program in July 2021⁵⁴ and Bermuda's Digital Nomad program followed shortly after. More than 800 applications have been received for the Digital Nomad program from individuals and families looking for one-year residency in Bermuda. The visa programs have helped to replace a portion of economic activity lost amid reduced tourism during the global pandemic.⁵⁵

of government, businesses and not-for-profits, with a singular focus on the sectors that they want to grow and the targets they want to achieve for future prosperity and growth.

If this localized approach to doing business emerges, it should be accompanied by a significant shift in what public policy looks like in order to ensure future agility and resilience, including the continuing realignment and management of city workforces and supply chains toward new efficiencies.



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As supply chains evolve, for example, cities will need to pursue an optimal balance between local and global supply partners to maximize both service access and efficiency. Along the way, we expect that timelines for public policy and strategic economic planning will be transformed and minimized to several years from traditional windows of one or more decades to ensure agility and responsiveness for a new era.

Replacing age-old barriers with the power of collaboration

As cities embrace a modern virtual reality that creates new possibilities for productivity and economic prosperity, we believe the future will demand new solutions that increase data-sharing capabilities and collaboration across siloed municipal government departments and services that typically remain disconnected.

Local governments in India are making significant progress through that nation's innovative DigiLocker program, in which citizens and businesses access a secure cloud-based platform to obtain, share and store personal documents, certificates, licenses, permits and more across a range of public services and departments such as health, education, transportation and utilities. The service currently has nearly 80 million registered users and has issued more than 4.5 billion documents.⁵⁶

India is also making progress on data sharing that is expediting business processes through its innovative Single Window project, allowing local businesses and businesses with global operations to obtain approval for setting up their operations in a seamless manner. The initiative aims to improve the ease of doing

business by replacing cumbersome paper processes with automated approvals, permissions, e-payments and more.⁵⁷

City leaders looking to successfully enable and sustain economic growth are also using technology to forge closer relationships with public stakeholders. They are using digital communication platforms and social media to encourage timely public input, suggestions and feedback. Giving stakeholders a new voice in shaping the future of cities will be a big step to improving public and citizen services and capabilities in ways that will inevitably foster economic growth.

Giving citizens a new voice in Uruguay's capital

Municipal leaders in Montevideo, Uruguay's capital city with a population of over 1.3 million, are reaching out to the public in new ways to gather input and ideas on local projects that will make city life healthier and more sustainable.

The city, which consists of eight municipal areas and 62 neighbourhoods, is encouraging proposals from residents and businesses for innovative local development projects such as public squares, parks, bike lanes and recreational facilities. Following a public vote, one proposal is selected for development in each neighbourhood. With this innovative program, Montevideo is giving local residents a new voice to help shape the future of city life.⁵⁸



Key takeaways

To enable and sustain economic growth and prosperity, city leaders and administrations should continually pursue modern digital capabilities that provide reliable seamless services and innovative applications to citizens, industry and all stakeholders.

Enhancing processes that accelerate interactions, workflows, approvals and decision making between local businesses and the cities they work with can be instrumental to supporting future economic growth.

Forward-looking city leaders should continually explore new possibilities to boost revenue-generating services and capabilities in ways that will help them solve financial challenges and support future growth.



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Startups are igniting growth in India

Startups can play a critical role in driving innovation and economic growth and India's Startup India portal is helping to maximize the impact that startups will deliver for a prosperous future.⁵⁹

It's estimated that each successful startup in India creates an average of 11 jobs or an estimated total of more than 550,000 jobs to date and growing. Since Startup India's 2016 launch with a handful of stakeholders, just about every segment of the startup ecosystem has witnessed exponential growth, with more than 56,000 registered startups in operation and at least one in each of India's states and territories.

More than 11,000 recognized startups have made a major contribution in enhancing public service delivery, servicing 93,908 public-procurement orders worth US\$550 million.

In addition, based on industry estimates, 69 startups have achieved status as Unicorns — businesses with a valuation exceeding US\$1 billion. And to illustrate the rapid and significant impact of startups in India, more than 40 businesses have achieved distinction as Unicorns during 2021 alone.

India's startup ecosystem, while booming, is also seen as diverse and inclusive, with more than 40 percent of startups recognized in less-developed Tier 2 and Tier 3 cities and 46 percent of startups boasting at least one woman among its directors. The continued growth of the startup economy is seen as having immense potential to drive employment, economic growth and future prosperity across India.⁶⁰



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Canada gets plugged in to major EV investments

Canada is pursuing an array of electric vehicle (EV) initiatives and policies across all levels of government that will enhance emissions reduction while promoting economic development. The provinces and federal government have focused heavily on driving domestic EV and battery manufacturing, with the goal of establishing a globally competitive supply chain. Federal initiatives include the US\$6.4 billion Net Zero Accelerator, as well as the Mines to Mobility Pathway — both targeting the development of a national ecosystem for battery production.⁶¹

In Ontario, companies announced a total of US\$3.3 billion in EV investments in 2020 alone, including Ford Motor Company's approximately US\$1.45 billion EV Facility Upgrade near Toronto, supported by federal and provincial funding equivalent to nearly US\$482 million.⁶² The province of Quebec has announced up to US\$1.6 billion in EV-related investments in the next three years and has established the Becancour Battery Hub, a cluster of sites dedicated to supporting the province's battery production.⁶³

Canadian cities are also taking aggressive steps to foster EV adoption, promoting new EV-charging networks, turning public transit fleets fully electric or hybrid, and offering incentives to consumers. Toronto will install 3,000 new charging stations by 2025 and 10,000 by 2030. Montreal has recently committed approximately US\$705 million to electrify its transportation networks, including 1,000 new charging stations by 2026. Also, the city is promoting the use of electric taxis in addition to requiring charging stations at new residential buildings. The city of Edmonton has begun electrifying its public transit fleet by expanding its electric LRT system and purchasing 40 electric buses.⁶⁴

Similar local initiatives continue to unfold across the country along with federal and provincial EV strategies — all of which will help to create an attractive national market for leading EV and battery makers and help Canada lead the way towards a net zero emission future.⁶⁵



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**Creating a Connected Enterprise
to drive transformation**



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Today's future-focused cities and their leaders are wisely bidding farewell to the age-old ways of serving their communities. They realize that the world's cities are now poised at a remarkable inflection point — one demanding nothing less than a modern mindset and bold strategic planning for a new age of seamless connections, personalized public service and optimized organizational efficiency.

In our view, the methods and systems of operating in the last century will no longer position cities for success in this century. Simply put, we believe the future is about creating smart, sustainable, innovative cities — each powered by revolutionary

technologies and infrastructures that support exciting new ways of living, working and playing. As public needs continually evolve and citizens look to maximize the utility of city life based on their own terms and personal preferences, we predict that tomorrow's connected cities will truly cater to their economic, social, environmental and cultural well-being.

We believe connectivity will be the key to delivering a revolutionary new era of customer centricity — one that fully aligns technology, talent and external partners across every city service and function. Today's future-focused cities are already breaking

down inefficient silos and forging new connections among people, processes and technologies. Along the way, traditional barriers between front, middle and back offices are collapsing.

City leaders are increasingly realizing that there is no time to lose on the journey forward. The global pandemic's profound disruption has accelerated an ongoing and inevitable shift from the decades old due process approach that typically devotes significant time and resources to meticulous planning, time-consuming piloting and uneven implementation. The need for speed amid the pandemic's impact has demonstrated what is possible for rapid change, and smart city leaders are not taking their foot off the gas as they shape the future.

Adding to the pressure is the fact that many national and regional governments have decentralized decision making in the wake of the pandemic, empowering local leaders to assume broader responsibilities as they grapple with today's pressing public needs and the attendant soaring costs.

Forging connections for a new age of city life

The KPMG Connected Enterprise for cities framework is helping local leaders around the globe launch modern initiatives and drive transformation for a new age of city life. Forrester Consulting research, commissioned by KPMG, shows that organizations investing in all eight critical capabilities of the KPMG Connected Enterprise framework are more than twice as likely to deliver customer experiences that exceed expectations, successfully execute on one or more customer-centric objectives, and achieve a return on investment for one or more metrics.⁶⁶



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Each of these capabilities can help drive improvement — and, when combined, the impact of transformation for today's cities can be significantly enhanced. Our framework strategically addresses core organizational drivers with a focus on these key areas and requirements:

The customer experience: The needs and preferences of a city's customers — its people, businesses and stakeholders — should be understood and used to help drive the design of the city's underlying service delivery model.

Service delivery: Customer-centric service design should be innovative and seamless across the end-to-end customer journey.

Experience-centricity by design is therefore critical to the future and can be defined by key elements that include a modern and consistent 'experience mindset' plus effective 'experience journey management' that meets the needs and expectations of today's customer-centric world.

Also key will be creating new levels of intergovernmental coordination and integration as cities take on more responsibilities and roles in meeting public needs and demands. As noted, local leaders are facing significant new pressures prompted by the global pandemic, with many national and regional governments decentralizing decision making and empowering local leaders to assume broader responsibilities — and costs — for public services.

The KPMG Connected Enterprise framework for cities also addresses 'back-office enablers':

Enabling processes and functions: Helping to ensure that the enabling processes and organizational functions can support a seamless customer experience and leverage leading practices.

IT capabilities and data architecture: Investing in 'fit-for-purpose' technology is needed to help support the delivery of customer services and organizational efficiency.

As the graphic below illustrates, KPMG is helping forward-looking cities unlock innovative new levels of customer-centric capabilities and services with the well-established KPMG Connected Enterprise framework.



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Eight critical capabilities of a Connected Enterprise and public-sector digital innovation examples from around the world

Capability	Definition	Global innovator
Aligned and empowered workforce 	The ability to build a customer-centric organization and culture that inspires people to deliver on customer outcomes.	Citizens in the London Borough of Barking and Dagenham now enjoy easier access to multiple municipal services after local leaders there consolidated 17 separate government teams into one community-solutions team with shared access to citizens' data. This workforce-alignment initiative is raising the bar on the borough's service efficiency and customer-centric capabilities.
Experience-centricity by design 	The ability to design seamless experiences for customers, employees, and partners, supporting the customer value propositions and delivering business objectives.	The City of Winnipeg's first Transportation Management Centre is letting citizens share and receive traffic insights to inform citizen-centric service and ensure informed decision making. By integrating roadway insights from 311 and 911 call services, Waze, Twitter and connected sensors, along with camera coverage across 60 percent of major roadways, the city is providing lane-by-lane data and visuals to citizens and media through Waze and Twitter. ⁶⁷
Seamless interactions 	The ability to interact and transact with customers, partners and stakeholders across policy, services, and communication channels and achieve measurable results.	The German city of Heilbronn is reaching out to the community as never before to help shape the future for its over 125,000 inhabitants. The city's comprehensive roadmap for success as a smart city is its Digital City of Heilbronn 2030 plan, which will encourage public participation in addressing key local issues such as future mobility in the city, education and the ongoing enhancement of local administration and infrastructure to better serve citizens and businesses. The city's guiding principle in developing the plan, with help from KPMG in Germany, is clear: "Technical solutions must not be an end in themselves. Rather, they must be used to solve problems, improve the quality of life for citizens and encourage active participation in urban life and its design." ⁶⁸
Responsive operations 	The ability to operate the enterprise with efficiency and agility to fulfill the customer promise in an efficient and effective way.	The Better Reykjavik initiative in Iceland is taking responsive operations to a new level of insights and action. Citizens now have opportunities to present ideas and solutions that will help the city transform its local services and operations. Reykjavik's Open Consultation and Participatory Budgeting programs are among modern initiatives that are enabling public input and enhancing local service delivery. By giving citizens a voice in policy decisions and use of resources, the Better Reykjavik platform is empowering citizens and aligning all municipal services with current public opinion, expectations, needs and priorities. ⁶⁹



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Capability

Definition

Global innovator

Insight-driven strategies and actions



The ability to harness data, advanced analytics and actionable insights with a real-time understanding of the customer and the business to shape integrated business decisions.

London has established a Smart London digital platform that encourages the public to provide public-service feedback that's proving instrumental in creating the type of experiences needed for the future. London's stated mission is to become the world's 'smartest city', using technology, data and valuable public input to meet public needs and enhance future services, growth and prosperity.

Digitally-enabled technology architecture



The ability to create intelligent and agile services, technologies and platforms, enabling the customer agenda with solutions that are secure, scalable and cost-effective.

The La Rochelle Urban Community, a local authority of 28 municipalities and nearly 200,000 residents in France, is pursuing a ground-breaking digital initiative that will give it the capability to collect emissions-related data from all of the territory's citizens, businesses and organizations. The data-gathering digital platform has one objective: to explore and take strategic action in response to the global climate crisis. With broad new capabilities to track carbon emissions, La Rochelle will gain critical new visibility into its current carbon footprint by sector and the actions needed to drive improvements toward carbon neutrality.⁷⁰

Innovative services



The ability to develop compelling and innovative policies and services to deliver outcomes and drive a positive customer experience.

A city with no cars, no streets and no carbon emissions? That's the vision for a futuristic city called The Line, part of Saudi Arabia's US\$500-billion NEOM digital-transformation megaproject. The Line is envisioned as a cross-border city in Tabuk province that will incorporate smart-city technologies for all. The city will cover 26,500 square kilometers (10,200 square miles), will extend 460 kilometers along the coast of the Red Sea, and will also serve as a tourist destination. With construction set to begin this year, The Line will be built as a belt of communities connected by high-speed transit and autonomous mobility solutions serving an estimated population of one million residents. It will contain no cars or roads and destinations such as schools, medical clinics, leisure facilities and parks will be within a five-minute walk for local residents.⁷¹

Integrated partner and alliance ecosystem



The ability to engage, integrate and manage partners to help increase speed, reduce costs, mitigate risk and close capability gaps to deliver customer outcomes.

The Colombian city of Bogotá has launched a data analytics agency that is being seen by local leaders as a breakthrough in how the city will use data to revolutionize its public-service capabilities while enhancing public safety and crime prevention. A new agency named AGATA is responsible for delivering game-changing analytics technology that will provide a 360-view of citizens and dramatically enhance the management of all public services. The city will provide automated responses to service requests it receives from social media, as well as analyzing smart-sensor data city-wide to reduce energy consumption, manage traffic and street parking, and assess environmental risks related to floods, landslides or forest fires. Using analytics for crime prevention is also a priority. AGATA will have new capabilities to monitor the city's security cameras and develop predictive data-based models aimed at reducing crime.⁷²

Looking through five lenses

There are five lenses we believe cities and their leaders should be looking through when considering future success with end-to-end organizational transformation. Bringing city-wide operations into a single line of sight creates a unique view of the various journeys required by stakeholders across diverse local and intergovernmental functions. High-performing cities are already recognizing and responding to the inevitable need to:

- 1 Connect customers with compelling opportunities and interactions.
- 2 Connect and empower employees to deliver customer-centric experiences.
- 3 Connect front, middle and back offices to execute on the customer-centric agenda.
- 4 Connect ecosystems of partners to jointly deliver on commitments to customers.
- 5 Connect to market dynamics and digital signals.

Bringing entire, organization-wide operations into a single line of sight can create a unique view of the various journeys required by stakeholders across diverse government functions.

Eight critical capabilities of a connected enterprise

Har ness data, advanced analytics and actionable insights with a real-time understanding of the customer and the business to help shape integrated business decisions.



*Base: 1,299 professional involved with customer-centric strategy decisions.
Source: A commissioned study conducted by Forrester Consulting on behalf of KPMG, every year since 2018.
The research is conducted on a sector specific basis. Each capability is enabled by five level two capabilities. Maturity statements on each one are gathered and provide the quantified evidence base.



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KPMG Connected Enterprise for tomorrow's cities

We've designed the KPMG Connected Enterprise framework from the ground up to provide an informed and strategic starting point for a digital engagement by:

- Helping city leaders identify and focus on pain points;
- Establishing a target operating model for city services;
- Tailoring the model to each city's unique organizational needs
- Simplifying and accelerating the process of transforming for the future.

KPMG Connected Enterprise is helping to bring disparate parts of city processes and operations together into an integrated whole, cutting across traditional functional verticals, silos and boundaries.

Forward-looking local leaders are already planning and designing services across various municipal government entities, replacing the traditional 'siloed' approach that typically separates individual departments and agencies. These cities are generating unprecedented levels of insights and informed decision making.

Make no mistake — we believe future is about responsive operations providing seamless interactions through innovative services. A new era of connected, customer-centric cities is upon us and the KPMG Connected Enterprise framework is helping businesses to confidently chart the journey forward.



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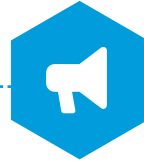
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KPMG Connected Enterprise for cities



Customers

- Residents
- Businesses
- Visitors
- Non-governmental organizations (NGOs)
- Elected members
- Employees
- Other levels of government



Channels

- Face-to-face
- Social media
- Digital
- Phone
- Mail/E-mail



Enterprise strategy

- Strategic ambition
- Policy definition
- Budgeting and business plans
- Performance measurement



Core business practices

- Customer contact
- Referral and assessment
- Service planning and coordination
- Mobilization of services
- Service delivery
- Payment and funding
- Workforce development
- Quality management
- Advice to elected members
- Support to other levels of government
- Policy and performance reporting



Advanced data and analytics

- Technology and architecture
- Data collection and storage
- Governance and compliance
- Transformation and algorithms
- Analytics
- Visualization and insights



Enabling business practices

- Enterprise technology
- Enterprise operations



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Primary actors

Customers/citizens, visitors, businesses, communities, workforces, elected members, other levels of government



Secondary actors

Industry/partners, interested parties, journalists/media



Interaction hubs

- Self-service portal
- Personalization
- Omnichannel



Capabilities

- Community engagement
- Information exchange
- Data services
- App services, including experience and customer mapping
- Payments engine
- CRM
- Assessment
- Statutory enforcement
- Program and project management
- Property and asset management
- Mobility services
- Agile workforce
- Intelligent automation
- Everything as a service
- ERP



Process/Orchestration

- Integrated business process management



Front-office business practices

- Customer contact
- Referrals and assessments
- Service planning and coordination
- Payment funding
- Service delivery



Middle-office business practices

- Advice to elected members
- Quality management
- Mobilization of services
- Policy and performance reporting
- Support to other levels of government
- Workforce development



Back-office practices (enterprise operations)

- Governance and performance management
- Customer experience
- Financial planning, management and reporting
- Health and safety
- HR, payroll and people management
- Communication, marketing and media
- Commission, procure and contract management
- Legal, risk and compliance
- Asset and facilities management
- Security and privacy
- Program, project and portfolio management
- IT support and operations
- Environmental and sustainability planning
- Ethics, conduct and integrity

Stakeholder management

Advanced data, analytics and insights

Catalysts for change

Advances in digital technologies and processes

- Advanced sensors
- Augmented reality
- Artificial intelligence
- Robotics
- Cognitive computing
- Blockchain

Advances in data science

- Natural language processing
- Machine learning
- Deep learning
- Advanced analytics
- Quantum computing
- Pervasive modeling
- 3D modeling
- Drone technology
- Hyper-connectivity convergence
- Digital twinning/modeling



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Get in touch

Contributors



Lorraine Mackin
Global Head of Government
KPMG International
T: +44 7585 980 820
E: lorraine.Mackin@kpmg.co.uk



Omar Raza
Sector Executive
Global Center of Excellence for Cities and Local Government
KPMG International
T: +1 416 777 3123
E: omarraza@kpmg.ca



Stine Lise Hattestad Bratsberg
Partner, KPMG Pure Sustainability
KPMG in Norway
T: +4792894411
E: stine.hattestad.bratsberg@kpmg.no



Julio Hernandez
Global Lead, Customer Center of Excellence
KPMG International
US Customer Advisory Practice Lead
KPMG in the US
T: +1 404 222 3360
E: juliojhernandez@kpmg.com



Stephen Beatty
Global Chairman (Non-Exec), Infrastructure
Head, Global Center of Excellence for Cities and Local Government
KPMG International
T: +1 416 777 3569
E: sbeatty@kpmg.ca



Sarah Varghese
Partner, Planning & Infrastructure Economics
KPMG in Australia
T: +61 2 9273 5697
E: svarghese5@kpmg.com.au



Mohit Bhasin
Global Co-Lead of Economic Growth
KPMG International
Partner and National Leader
KPMG in India
T: +911246691000
E: mohitbhasin@kpmg.com



Paul Kent
Partner, Head of Economics, Data and Analytics
KPMG in Singapore
T: +6564118333
E: pkent@kpmg.com.sg



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Contacts

Geert Criel

Partner, Head of Public Sector

KPMG in Belgium

T: +32 2 708 41 78

E: gcriel@kpmg.com

Wannes Verschueren

Partner, Business Performance Improvement

KPMG in Belgium

T: +32 2 708 48 72

E: wverschueren@kpmg.com

Stephanie Porteman

Director, Connected Enterprise

KPMG in Belgium

T: +32 2 708 40 44

E: stephanieporteman@kpmg.com

Kim Leemans

Director, Public Sector - Connected Enterprise Lead

KPMG in Belgium

T: +32 2 708 42 03

E: kleemans@kpmg.com



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Designed by Evalueserve.

Publication name: The future of cities

Publication number: 137773-G

Publication date: November 2021

