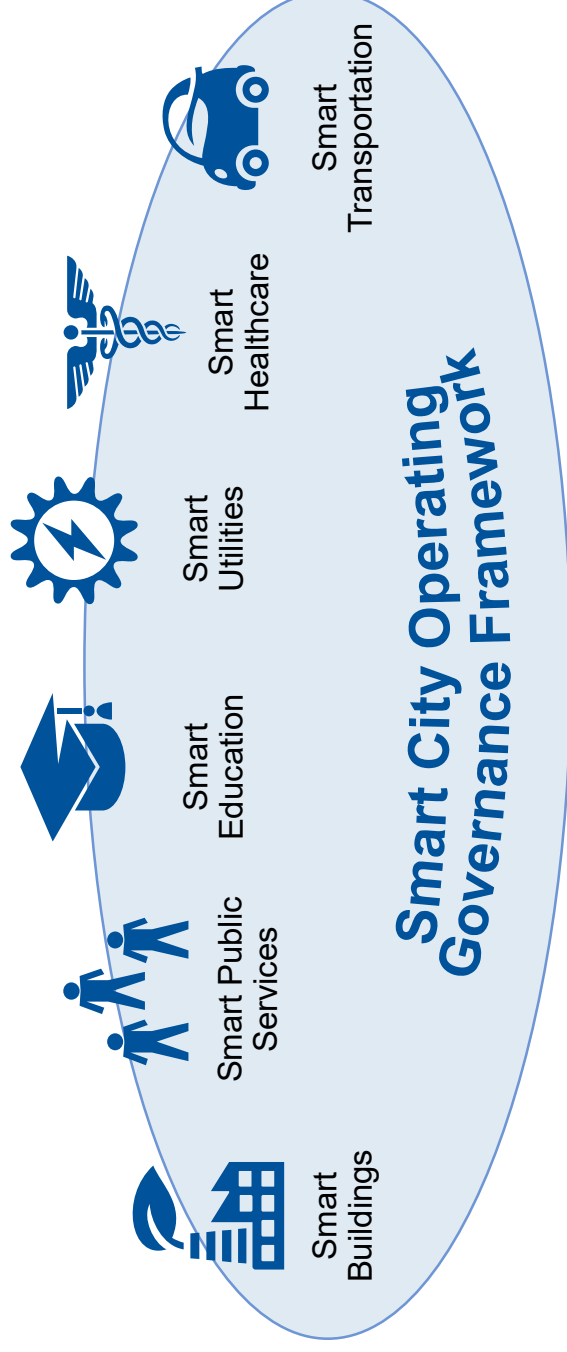




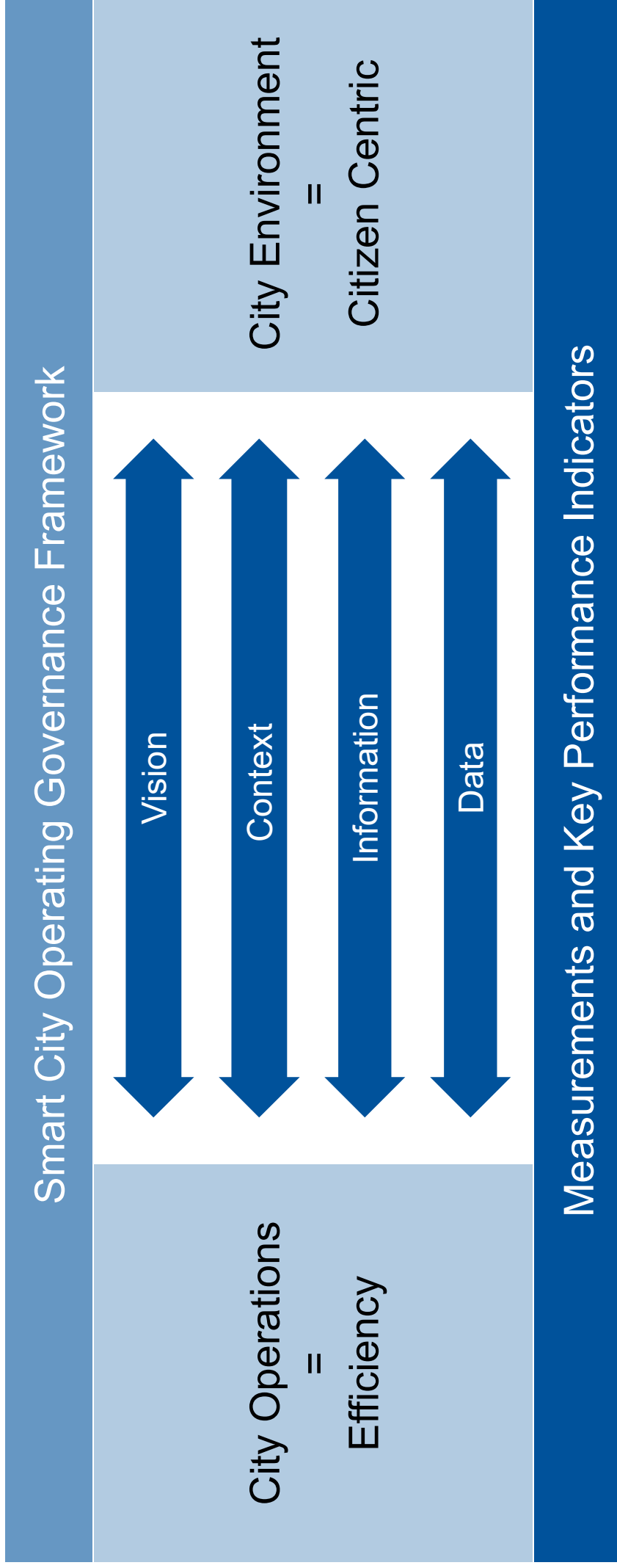
Smart Cities

Smart City Definition



A smart city is an urbanized area where **multiple public and private sectors** cooperate to achieve **sustainable outcomes** through the analysis of **contextual** real-time information shared among sector-specific information and operational technology systems.

Elements of a Smart City Strategy



This Is My City

Your City

Operations

- Utility Infrastructure
- Open Data
- Public Safety
- Buildings
- Energy and Carbon Accounting

Public Services

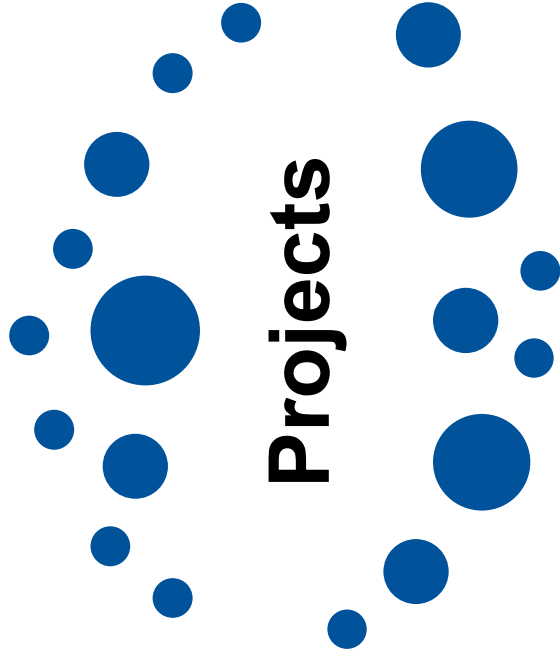
- Program Coverage
- Service Verification
- Sustainability and Climate Change
- Digital Connectivity

Citizen and People

- Civil Innovation
- Perceived Value
- Knowledge Exchange
- Equal Opportunity
- Social Inclusion

Holistic City View Across Stakeholders

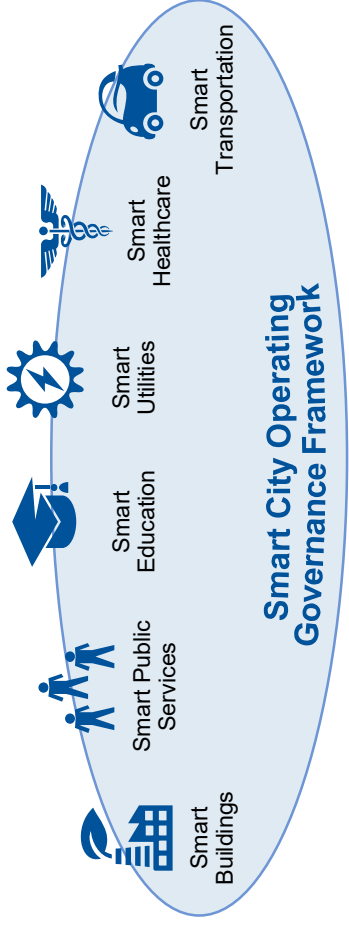
From Projects to Urban Development



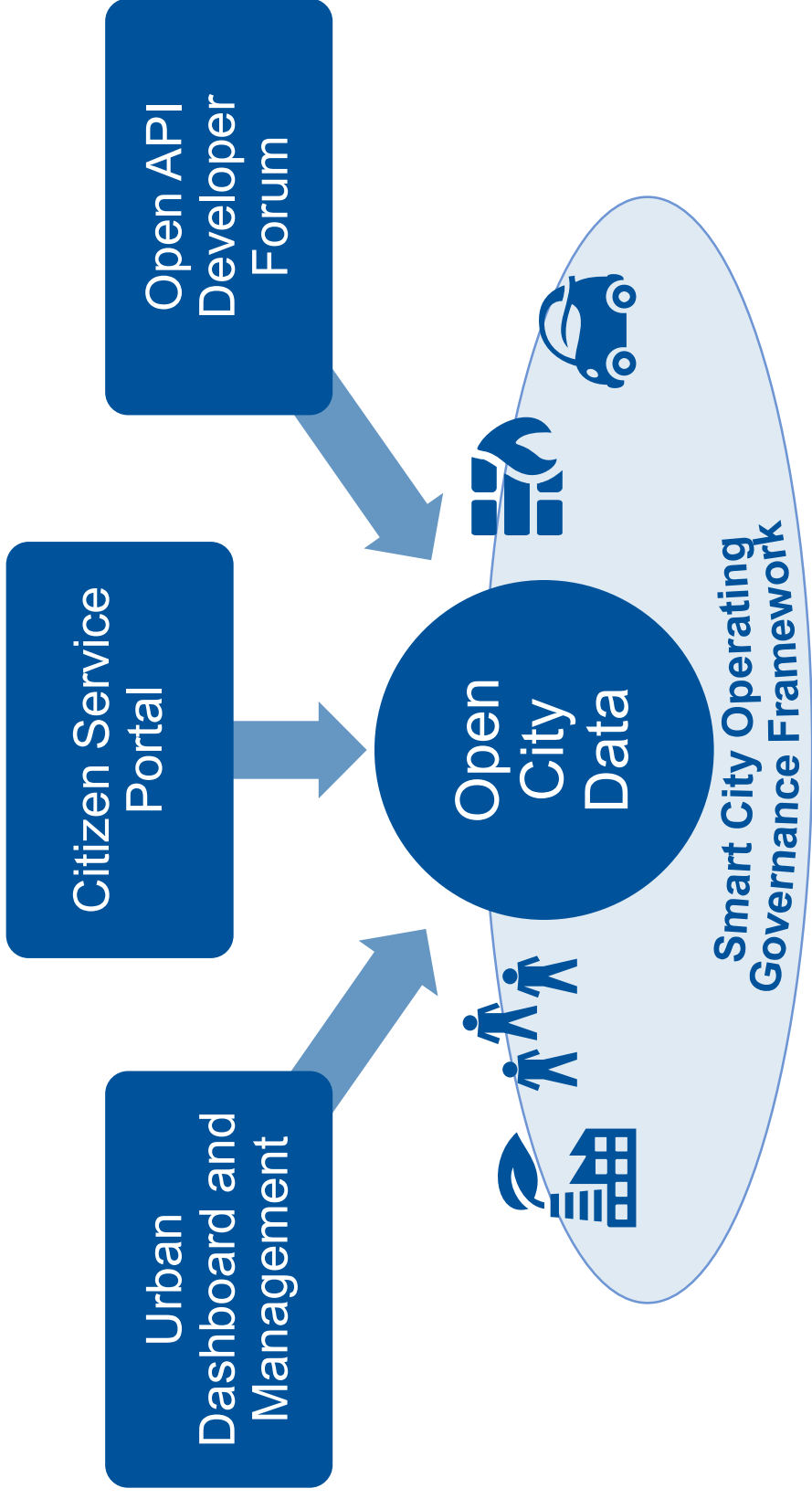
Mission Statement:
My Intelligent City



Low Hanging Fruit:
Parking Guidance Systems
Energy Efficiency in Buildings
Smart Lighting
Environmental Management and Carbon Emissions



Open City Data: Window to Citizen Knowledge Base



City Information Services



Collaborations and Operations: Dubai Knowledge Transfer

Ownership

- Dubai Smart City Office and project stakeholders, Smart City Office, Smart City Establishment

Projects

- Education, economic and citizenship, Happiness Meter, sustainable city, Desert Rose city, MyID

Timeline

- Ongoing vision for 2020 and beyond

Metrics

- Number of graduates, job creation, new industry investment, prosperity, citizen entrepreneurship

Ecosystem

- DEWA, The Executive Council of Dubai, Dubai Health Authority, Roads and Transport Authority, Dubai Tourism, Dubai Police, Dubai Municipality, Dubai Smart Government, Department of Economic Development, Dubai Silicon Oasis, Dubai Design District, [Dubai South](#)

Civic Innovation and Central Platform: Vienna

Ownership

- City of Vienna and Vienna University of Technology
- Municipal Department 18 — Urban Development and Planning

Projects

- "Smart citizens in a smart city"; behavioral applications to incur change, equal opportunity; public citizenship partnership

Timeline

- 2020 for vision 2050

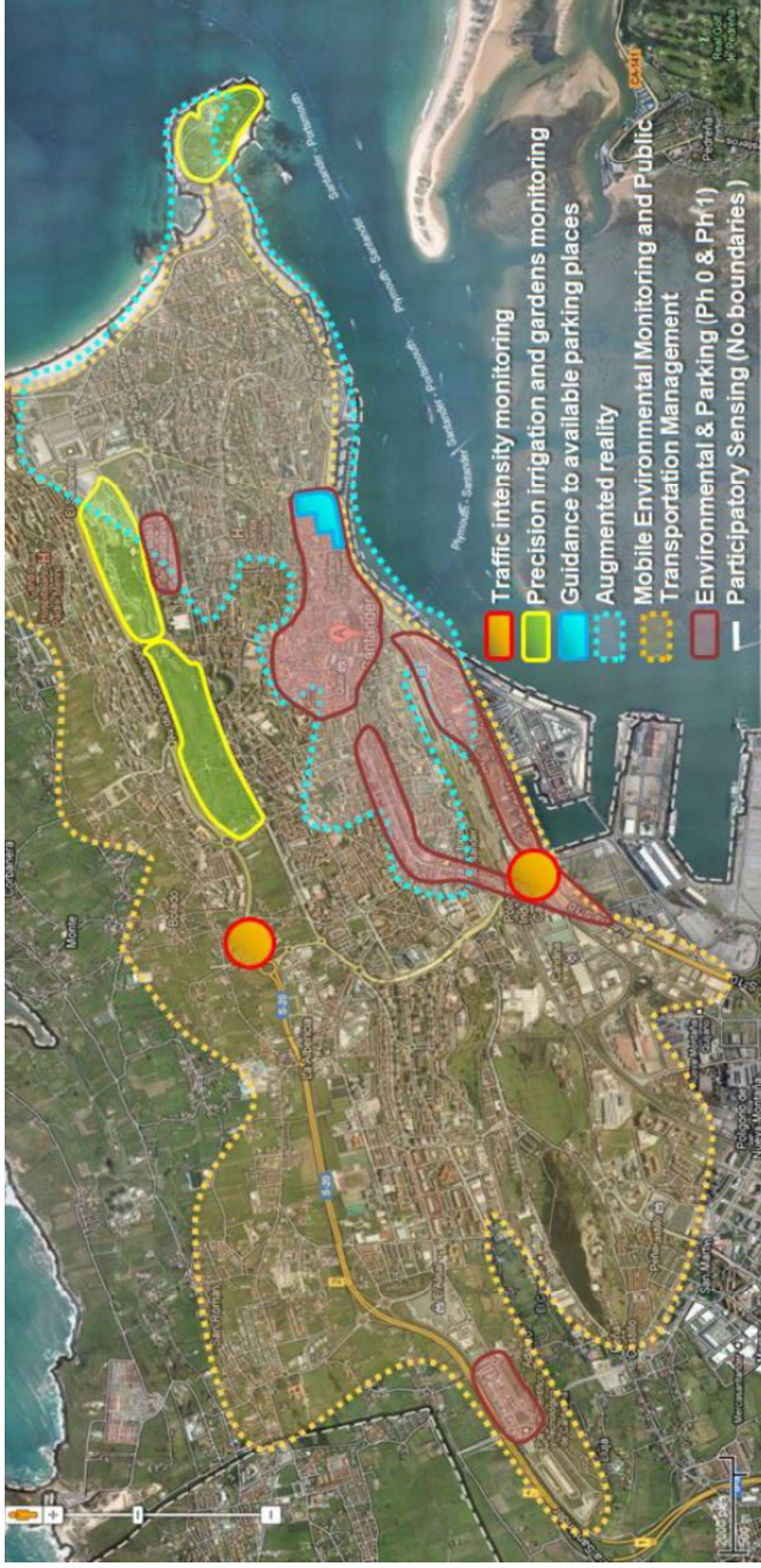
Metrics

- Improved customer satisfaction
- Better communication with customer
- Increased access to information
- Increased customer feedback/suggestions
- Increased transparency of processes
- Improved experience when dealing with government
- Improved image of public entity

Ecosystem

- Federal Ministry for Transport, Innovation and Technology, Climate and Energy Funds, City of Vienna, Municipal Department 20 — Energy Planning, Wiener Stadtwerke Holding, Wien 3420, Siemens, raum & kommunikation, TU Wien, Energy Institute for Business

The European Commission believes Santander is One of the Smartest Cities in the World!



Copenhagen Data Exchange

The screenshot displays the Copenhagen Data Exchange interface. At the top, a navigation bar includes links for Home, About, News, Community, and Support. A prominent banner features the text 'Copenhagen's Innovative Big Data Marketplaces' and a large number '1,749,831,474' with a 'GET STARTED' button. Below this, a search bar is visible with filters for 'Published Date' and 'File Type'. The main content area shows search results for 'CVR Register' and 'City bike number of trip starts per location'. To the right, a section titled 'WHAT YOU CAN DO' lists three actions: 'EXPLORE DATA', 'CONSUME DATA', and 'PUBLISH DATA', each with a 'GET STARTED' button and a brief description of the action.

Source: Copenhagen Data Exchange

Amsterdam



- Crowdsourcing on the platform AmsterdamOpen.nl
- Log into Facebook profile to submit ideas directly through a Facebook application
- Rethink smart city from the ground up
- Mobilize collective thinking
- Building a civic innovation and knowledge sharing



Kansas City Smart City: Mobility and IoT

Visualization: Electronic message boards, bus stops

Operations Green Light: Sync of traffic signals peak commuter periods, adaptive signal control

CO2 emission sensors

Connected street car and vehicles

Smart street lights

Kiosk and smart hubs



Citizen Participation Platform Needs Collaboration and Context

- Digital Inclusion
- Demographic Considerations
- Modes of Communication:
 - Applications
 - Survey
 - Hackathon
 - Open Data Portal
- Purpose and Timeline Definition
- User Experience

Financing Through Partnerships

- Public-Private Partnerships
 - Capital investment in exchange for long-term fees
 - Transportation, others
 - Shared investments, shared revenues, shared savings
- Data Marketplaces
 - Revenue from data itself, or share-in-revenue
- As-a-Service Models
 - CapEx → OpEx
- Blurred and Blended Service Delivery

A Call to Action

**Cultivate a
change in
mindset and
behaviors**

**Engage your
stakeholders**

**Recognize
and embrace
the
possibilities**

**Take
ownership;
find
leadership**



Workshop

Design Digital Moments by Formulating "A More Perfect" Set of Questions

Thought Starters:

1. What are "moments of truth" for citizens and government employees?
2. How can you increase citizen engagement with government or improve services?
3. How can the Internet of Things play a role in the relationship you have with citizens?
4. Can citizens perform activities in the value stream not done today?
5. Who are the partners/data/technologies you could work with outside government to create and participate in a civic moment?

Exercise 1: Build Out Some Digital Moments

Brainstorm three or four potential digital moments. They should range from close-in to futuristic. Keep them simple — ones you can tell in 2 minutes or less.

Using one or two of your digital moments, do the following on flipcharts:

- **Draw a Picture:** Describe the digital moment, how it works, and the value to be delivered.
- **Identify the Players:** List the key individuals, other agencies and/or external parties that might be involved in your civic moment.
- **Identify the Components:** Briefly state how cloud, analytics, mobile and/or social technologies feature and how they might support the digital moment.

Be prepared to present your digital moment to the group.

30 Minutes Table Discussion; 15 Minutes Group Presentations

Digital Moment Value

- Create speculative situations that can ignite creativity.
- Communicate complex stories that illustrate the potential of digital government.
- Integrate into your thinking about citizen, employee and client journeys and associated processes.
- Engage business peers and the IT organization in the very different end-to-end, collaborative thinking and design required for success.

Exercise 2: Build Out Your Digital Moment

Build a Digital Moment for Your Agency:

- **Draw a Picture:** Describe the digital moment, how it works and the value to be delivered
- **Identify the Players:** List the key individuals, other agencies and/or external parties that might be involved in your civic moment.
- **Identify the Components:** Briefly state how cloud, analytics, mobile and/or social technologies feature and how they might support the civic moment.
- **Assess the Value and Challenges.**

Discuss with others at your table to draw on the thoughts and experiences of others.

45 Minutes Table Discussion

Exercise 3: Overcoming Challenges

Room Discussion:

- **Is Change Necessary and Possible?** How much change/transformation is needed to realize a digital moment? Is it possible?
- **Do Digital Moments Tell the Compelling Story?** Digital moments are stories to smooth the way toward digitalization as well as present a potential opportunity. Do you feel you can now build a compelling digital moment to forge a path forward?
- **What Will You Do Next?** How will you overcome the challenges? Are there resources you can leverage? What will you do to prepare?

15 Minutes Group Discussion

Overcoming Obstacles: Key Questions

- If you move more aggressively on digital government, what stakeholders will be most important to recruit and/or manage?
- For your top three stakeholders, what will be the most difficult challenge they must resolve?
- What can be done to help them overcome those challenges or otherwise get them to comply with digital government priorities?
- What are your biggest near-term opportunities (digital moments of greatest interest and impact; low-hanging fruit)?
- What are the unexplored opportunities with partners/data/technologies? Why?
- What can you do to advance those opportunities?

Wrap Up: What to Do Next?

- Use a similar exercise with your team in a strategic planning process.
- Consider small opportunities, such as additions to existing projects.
- Engage key business partners in a dialogue about the possibilities enabled by technology.
- Create a collection of digital moments and connect them to see additional possibilities.
- Ask yourself how your agency could leverage these momentary opportunities and challenges in the digital future.

Recommended Gartner Research

- ▶ [Introducing the Gartner Digital Government Maturity Model 2.0](#)
Andrea Di Maio and Rick Howard (G00334525)
- ▶ [Digital Government Will Move at the Speed of Civic Moments](#)
Rick Howard (G00263138)
- ▶ [Strategic Technology Map of the Job Loss Digital Civic Moment](#)
Rick Howard (G00292158)
- ▶ [The Top 10 Business Trends for Government in 2016](#)
Rick Howard, Neville Cannon and Others (G00311615)
- ▶ [The Top 10 Strategic Technology Trends for Government in 2016](#)
Rick Howard, Cathleen E. Blanton and Others (G00308910)
- ▶ [How Digital Government Can Be Both Inward- and Outward-Looking](#)
Andrea Di Maio (G00310475)
- ▶ [Government CIOs Need a Simple Digital Strategy to Lead Change in a Complex World](#)
Glenn Archer (G00278668)

Backup: Technology Trends

Multichannel Citizen Engagement: One View of All Cross-Channel Activities



- All contact channels optimized and integrated to meet the needs and desires of individual citizens
- Leverages social media and communications to engage citizens
- Allows citizens to engage on their own terms
- Recognizes a citizen's preferred engagement channels
- Facilitates seamless transitions among all selected channels

✓ Action Item

Use all data needed for a comprehensive and integrated view of citizen contacts and services

Supports Business Trends:

- Citizen Experience Management
- Partner Ecosystems
- Digital Equity

Citizen e-ID: Integrate Services With the Consent of the Governed

- Orchestrates a set of processes and technologies to provide a secure domain for citizens to access services
- One unique and persistent identifier for each citizen makes the multichannel business model possible
- Approach is determined by what is culturally acceptable and legally permissible

✓ Action Item

Evaluate citizen e-ID feasibility based on business value, system interoperability and user experience

Supports Business Trends:

- Citizen Experience Management
- Partner Ecosystems
- Digital Equity

Digital Workplace: Accommodates the Changing Nature of Work



- Boosts employee engagement and agility within a consumerized work environment
- Promotes collaboration among diverse workstyles
- Supports decentralized, mobile work environments
- Embraces employees' personal choice of technologies

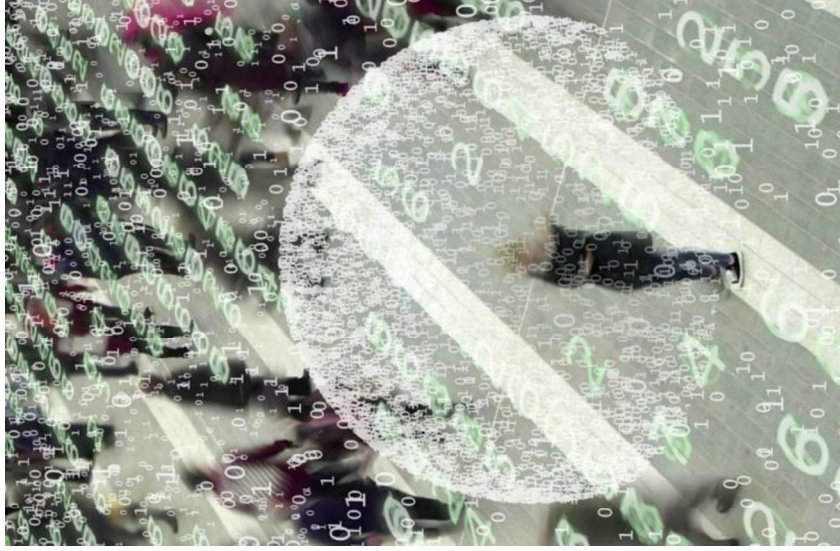
✓ Action Item

Assess how assumptions about risk and reward must change in a fully digital environment

Supports Business Trends::

- Evolving Civil Service
- Insight-Driven Workforce
- Institutional Agility

Analytics Everywhere: Embedded Algorithms at Each Decision Point



- Pervasive use of analytics at all stages of business activity and service delivery
- Shifts government reliance on lagging indicators to autonomous and predictive business processes
- Humans and machines make context-based decisions in real time

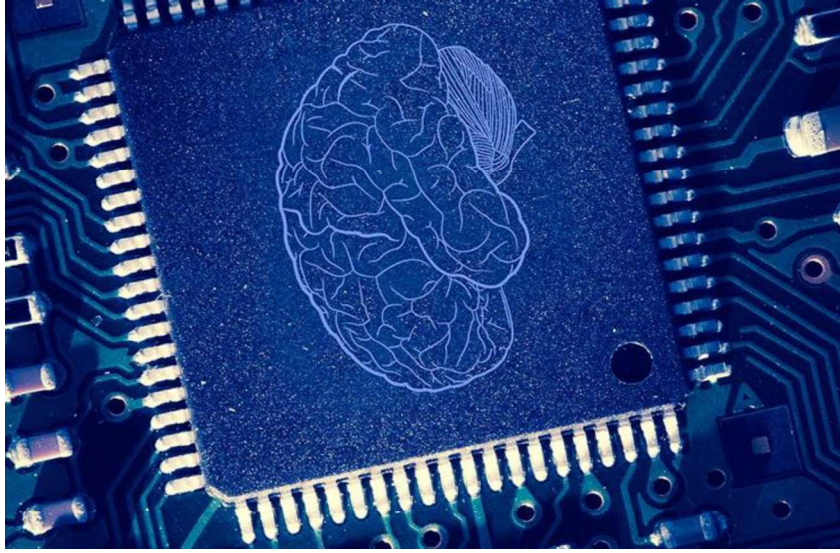
✓ Action Item

Pursue analytics projects where high return on investment can be achieved in less than 12 months

Supports Business Trends::

- Citizen Experience Management
- Insight-Driven Workforce
- Performance Management 3.0

Smart Machines: The "Intelligence" Behind the Next Generation of Government Services and Processes



- Applies the knowledge encapsulated in algorithms to data stream at speed and scale
- Adds contextual, personalized and interactive capabilities to earlier government services
- Provides guidance to citizens and workers with personal assistants, smart advisors and chatbots

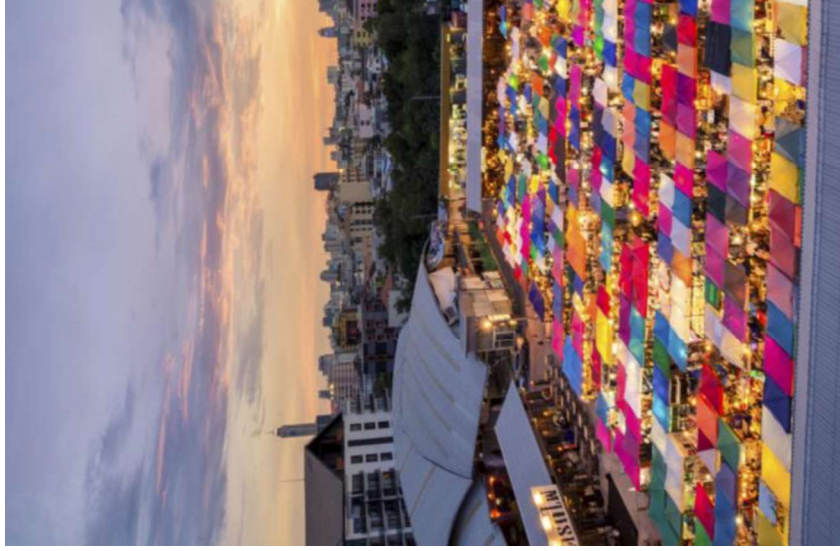
✓ Action Item

Educate business leaders on different types and value propositions for smart machines

Supports Business Trends:

- Insight-Driven Workforce
- Institutional Agility
- Sustainable Cybersecurity

Open Data Marketplace: Engines of Community Innovation



- A marketplace where open government and smart city data is traded or sold to drive economic development
- Smart city initiatives are linked with the ability to share data according to a defined methodology and standards
- Public-private partnerships manage data collection, data orchestration, data privacy and data representation

✓ Action Item

Determine which governance and business models are best-suited to sustain a data marketplace

Supports Business Trends:

- Insight-Driven Workforce
- Performance Management 3.0
- Partner Ecosystems

API Management: An Integration Accelerant



- Supports mobile apps and modern web apps, enables third-party developer ecosystems and maximizes digital opportunities
- Implementing APIs requires the orchestration of multiple back-end applications and data sources
- Employ API management if governance, promotion and life cycle management of APIs are core objectives

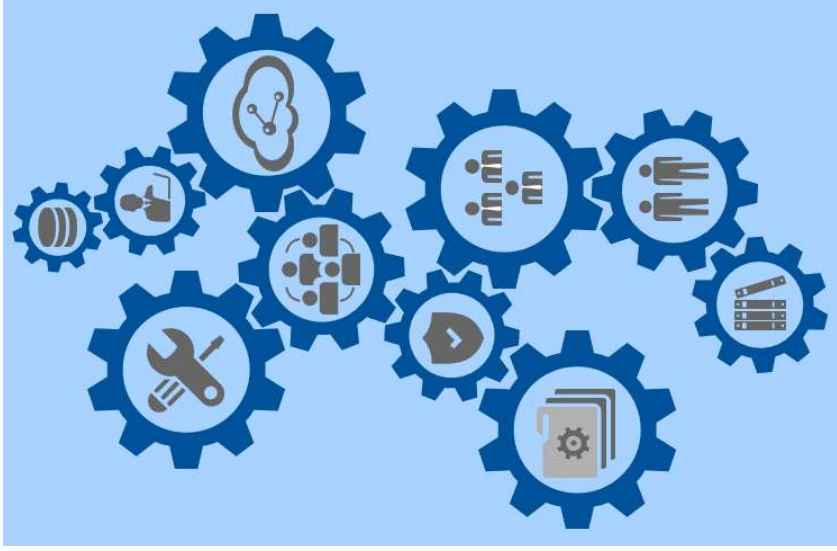
✓ Action Item

Evaluate API management solutions for integration and interoperation with your application and security infrastructure

Supports Business Trends:

- Citizen e-ID
- Citizen Experience Management
- Partner Ecosystems

Mesh App and Service Architecture (MASA): The Preferred Application Architecture for the Digital Age



- The three-tier application architecture is obsolete and no longer meets the needs of modern applications
- Increases operational complexity, but improves agility and scalability
- Microservices and miniservices architecture decompose monolithic application logic into independently deployable services

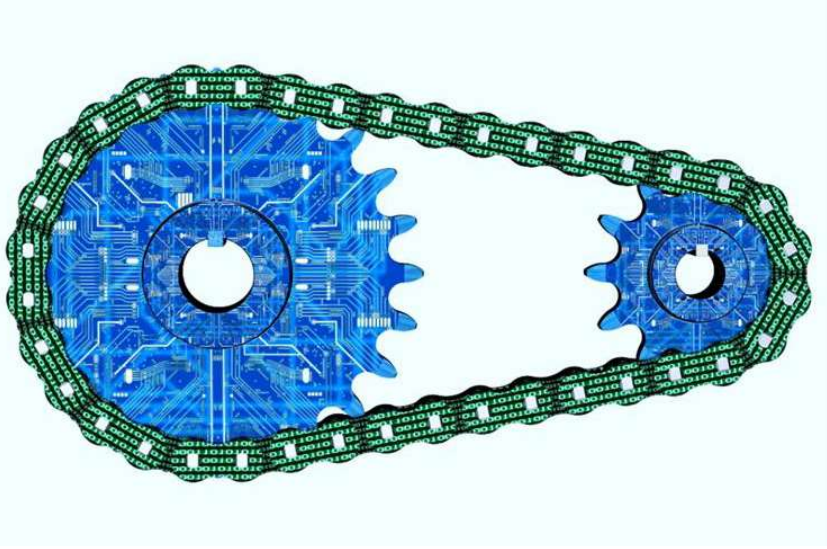
Action Item

Experiment with MASA to build maturity in your continuous delivery and DevOps practices

Supports Business Trends:

- Institutional Agility
- Partner Ecosystems
- Citizen Experience Management

Blockchain: Redefines the Recording of Business Transactions (Maybe)



- Distributed ledger technology with broad applicability in many industries, including government
- Fraught with challenges: Technologies in flux; scalability, interoperability, risks, regulations
- Internet protocols at bottom for connectivity, peer-to-peer network on top
- Government use cases — voting, citizen identity, land title registry, notary services, payment transactions, etc.

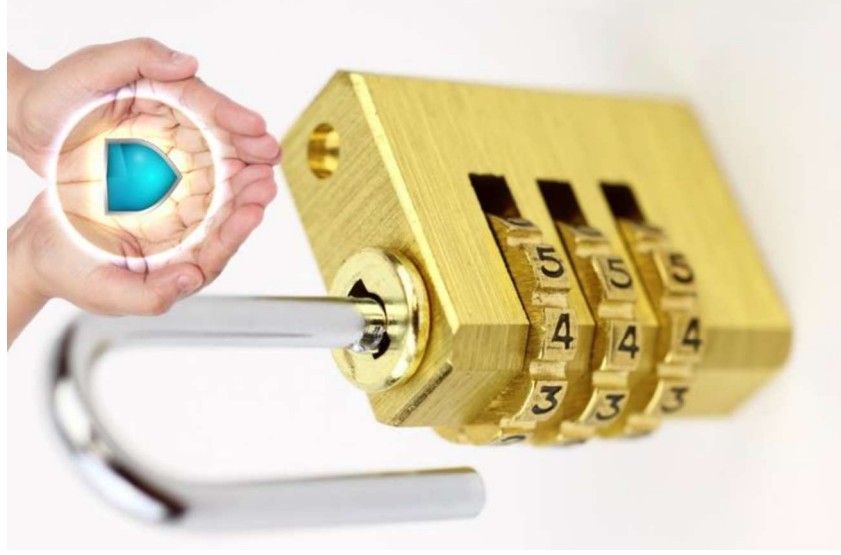
✓ Action Item

- Develop blockchain use cases
- Conduct proofs-of-concept to learn about the major platforms

Supports Business Trends:

- Partner Ecosystems
- Performance Management 3.0
- Sustainable Cybersecurity

Risk-Based Security: A Proactive Cybersecurity Program to Anticipate and Mitigate Emerging Threats



- The evolving cybersecurity threat environment is only one dimension of a complex, multifaceted set of threats and risks
- A holistic approach to threat-awareness is needed to make decisions about changing risks
- More digitalization means organizational risk management is the responsibility of all senior executives, not just the CIO

✓ Action Item

Take a full-spectrum approach to risk management and deploy adaptive, predictive security solutions

Supports Business Trends:

- Sustainable Cybersecurity
- Digital Workplace
- Citizen Experience Management