



## IDC MarketScape

# IDC MarketScape: Worldwide Smart City Business Analytics Software 2015 Vendor Assessment

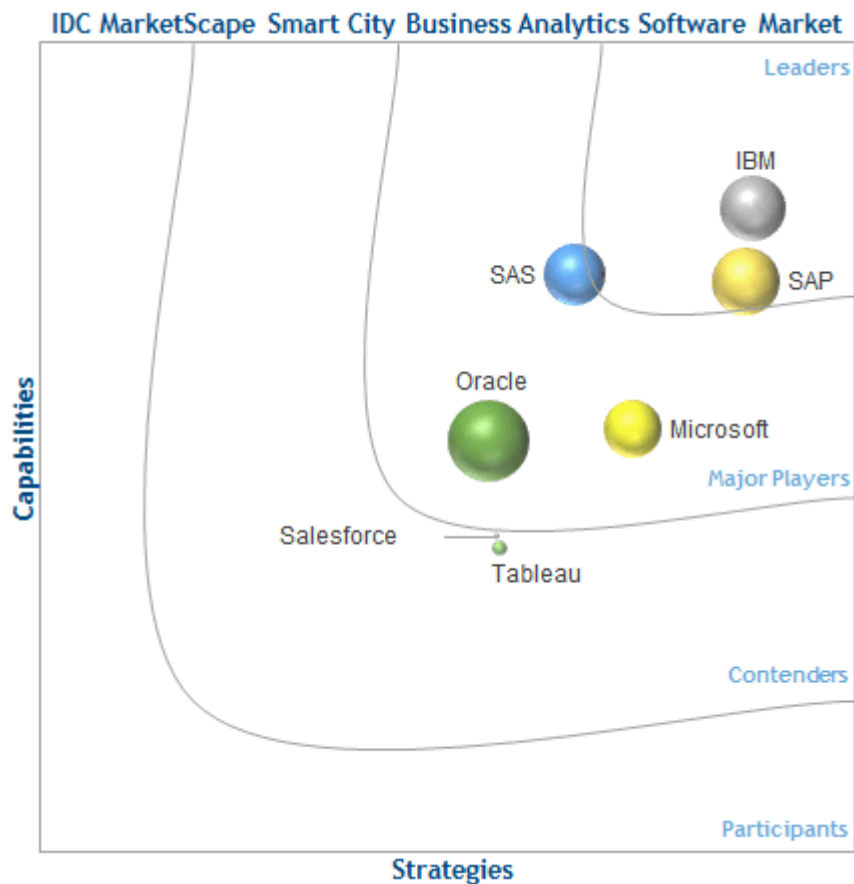
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### IDC MARKETSCAPE FIGURE

FIGURE 1

## IDC MarketScape Worldwide Smart City Business Analytics Software Vendor Assessment



Source: IDC Government Insights, 2015

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

## IDC OPINION

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Business intelligence (BI) and analytics are central to Smart City initiatives. These solutions are what puts the "smart" in Smart Cities, and cities need to have an independent assessment of which vendors can provide the best solution for their needs. This report brings to light several important factors about vendors in the Smart City business analytics software space:

- **A short list of global Smart City business analytics software vendors.** The vendors studied for this IDC MarketScape are among the few business analytics vendors that have specific offerings geared toward Smart Cities and that are addressing the most important characteristics for Smart Cities. As such, while many other vendors were considered, many did not meet the criteria we set out or were too early in their Smart City offering development to be included.
- **A tight field of leaders.** There is contention in the Leaders category based primarily on capabilities. IBM was one of the early vendors in the Smart City business analytics software space and continues to benefit from first-mover advantage and steady investment in the market. SAP, Microsoft, and SAS have more recently made big plays with their own branded offerings, key product updates, and industry partnerships, along with Oracle and its large established base of Smart City customers. The two much smaller companies, Tableau and Salesforce, are serious contenders in this space, and we expect them to increase pressure on all the other larger vendors with new business models and products.

## IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

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This analysis includes business analytics solution providers that meet the following criteria:

- Generating at least 25% of global revenue from packaged software – that is, through license and maintenance and SaaS
- Actively pursuing two or more Smart City domains, including, but not limited to, public safety, economic development, transportation, customer service/311, and government administration
- Offering a business intelligence portfolio that offers two or more of the following capabilities: CRM analytics, financial analytics, GIS analytics, social analytics, and workforce analytics
- Live or ongoing implementation of business analytics solutions with local governments in at least two of the following geographies: United States, Canada, Western Europe, Japan, Middle East and Africa, and Asia/Pacific

## ESSENTIAL BUYER GUIDANCE

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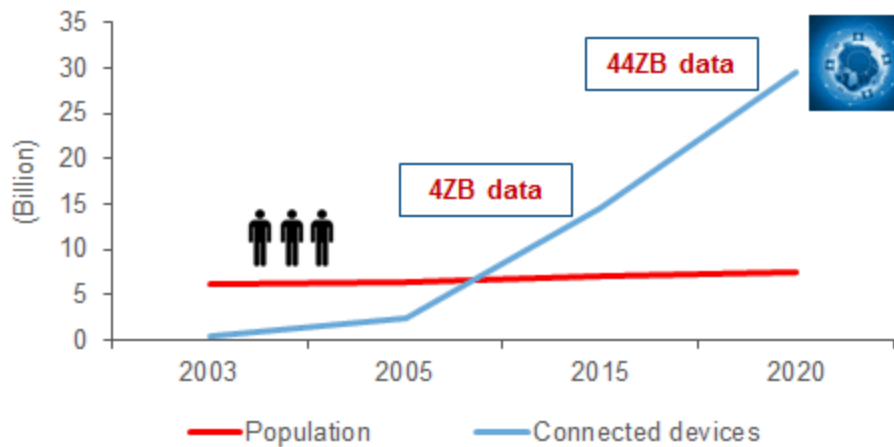
### Why Is a Smart City Business Analytics Software IDC MarketScape Important?

Why is it important to do a Smart City business analytics software vendor analysis? Because business intelligence and analytics are central to Smart City initiatives. "Smart" or "intelligent" – from intelligent operations centers to smart water meters to intelligent transportation systems – all require BI and analytics. These solutions are what puts the "smart" in Smart Cities, and cities need to have an independent assessment of which vendors can provide the best solution for their needs.

As shown in Figure 2, the amount of data that is created each year is expected to grow from 4.4ZB (zettabytes) in 2013 to 44ZB – or 44 trillion gigabytes – in just five years, representing growth of 40% per year. Much of this growth is driven by connected devices and, more specifically, mobile connected devices (RFID, smart cards, body cams, GPS). In 2013, 15 billion things were connected to the Internet, and in 2020, 30 billion things will be connected, 75% of which will be mobile things. Of this, 27% of the data will be generated by devices and people by 2020. Government organizations will need to analyze data created from government systems as well as from outside government. Social media, information from mobile apps and smartphones will become more and more useful to cities as they work on managing traffic, crime, events, and so forth (see *EMC Digital Universe Study, 2014*).

**FIGURE 2**

**Huge Amount of Data Created Through Growth in Connected Devices**



Source: IDC, 2015

This data growth has implications on what it will mean to be truly "smart." Software will be needed more than ever to cull through data and turn it into useful and actionable information. In 2013, only 22% of the information in the digital universe was a candidate for analysis – that is, useful if it was tagged (a practice that results in metadata) – but less than 5% of that was actually analyzed. By 2020, the useful percentage could grow to more than 35%, mostly because of growth of data from embedded systems (i.e., MPS players, traffic lights, MRI scanners).

According to IDC Government Insights' 2014 *Smart City MaturityScape Benchmark Survey*, only one-third of state and local organizations agree that their data is currently "actionable," reinforcing the point that analytics tools are key to making use of data – which is a cornerstone of delivering good citizen services and improving operational efficiency.

**The Smart City Business Analytics Vendors Short List**

The IDC MarketScape graphic depicts how the selected vendors have scored according to the detailed set of criteria on which we evaluated them, and which is described in detail in the Appendix. IDC analysts are often asked to short-list vendors for specific projects on which buyers are engaged; it is important to note that this list of vendors *is* the short list. There are many other vendors that we

considered, and some we even approached, that did not meet the criteria as a "Smart City business analytics software" vendor. So, regardless of how they fall on the graphic, these vendors are among the few business analytics vendors that have specific offerings geared toward Smart Cities and are addressing the most important characteristics for Smart Cities. These include:

- **Ease and speed of analysis/self-service:** There are two big concerns for Smart Cities related to ease of use – that, when needed, they can get rapid responses to leaders and quickly run reports that are requested (which means taking hours, not days, to run reports, and certainly not weeks); and that the reliance on data analysts or highly specialized skills is reduced. Data scientists or analysts should be left to focus on the more complicated, advanced analytic reports, and "regular" government workers should have the tools on hand to run analytics reports themselves.
- **Strength of analytics:** Government organizations are widely varied in their analytics needs. Some departments require advanced analytics and many do not. There are some key commonalities in city needs – for example, with mapping and geospatial analysis and the move toward access to tools via mobile devices.
- **Flexible delivery models:** Smart Cities are slowly but surely moving to the cloud, whether it's private, public, and/or hybrid environments. Smart City business analytics vendors must have developed cloud offerings that allow for lower-cost options and enterprisewide access to software.
- **Ability to share data:** While at this point in time it is still not the norm for government organizations to share data easily across departments, this will be an increasingly important requirement for Smart Cities that want to get the most value out of their data – by not only blending different data sources but also sharing reports and findings.
- **Innovation and/or co-innovation:** The vendors on this list are not only internally innovative, often committing sizable amounts to R&D, but also co-innovating with regional and local government partners. This results in product offerings that continue to improve and better meet the needs of Smart City buyers.

## Trends in Business Analytics Software

The business analytics software market incorporates a wide range of functionality across the technology stack – from data acquisition to information delivery. Within each market segment, there are specific trends and competitive developments. To understand these trends in detail, there are a number of reports on the topic listed in the Related Research section. These trends were excerpted from *Worldwide Business Analytics Software Forecast, 2015-2019* (IDC #257402, July 2015).

Key drivers of business analytics investment growth include:

- **Availability of digital data, especially as discussed previously, as analog data gets translated into digital data from a variety of devices and sensors in the Internet of Things (IoT) ecosystem.** This emphasizes the need for solutions that will provide real-time actionable intelligence.
- **City workers' need for on-demand access to data with easy-to-use tools, dashboards, and mapping visualizations.** Mapping and geospatial analyses are highly important in Smart Cities, and workers need to be able to have self-service functionality to support full business analytics workflow.

- **Increasing operational insight and predictability to manage risk in revenue management, service delivery, and so forth.** Growth in subscription pricing models is one way to manage spending risk; another way is to invest in products with predictive functionality.
- **Continued broad adoption of open source business analytics solutions, from data integration and management software to advanced analytics and reporting tools.** We expect open source components to represent the core of many major business analytics solutions.
- **More complex data integration process.** Data integration and data quality are the perennial top 2 challenges for end users, as revealed in IDC surveys. The proliferation of data sources and types in on- and off-premises locations is introducing new challenges. Content analytics software, which had been dominated by text analytics, is rapidly expanding into audio, video, and image analytics. Applications of rich media analytics are already being deployed in cities, especially as more adopt video or CCTV technologies and try to mine social media data.

## VENDOR SUMMARY PROFILES

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This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

### IBM

#### *Portfolio*

IBM provides information technology (IT) products and services worldwide across a wide array of industries including, but not limited to, public sector, finance, energy and utilities, healthcare, and telecom. IBM is positioned as a Leader in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape.

An important part of IBM's Smarter Cities portfolio is the company's Intelligent Operations Center (IOC) platform: a pre-packaged set of IBM software for analytics, data management, data visualization, and event management. Drawing from IBM Cognos, SPSS, and vertical-specific technologies, the IOC platform offers deep analysis, situational awareness, data visualization, and near-real-time collaboration. It provides integrated maps, online dashboards, customizable reports, multiple analytic algorithms, interactive standard operating procedures, and other tools. IBM combines the IOC with city services-specific functions that address major city challenges such as traffic, water, and emergency management; waste handling; and integration of cross-city operations. Further, IBM software products such as Maximo, TRIRIGA, Cúram, and ILOG provide Smarter Cities buyers with asset management, energy savings in buildings, and healthcare management. These technologies can be purchased as on-premise acquisition or on cloud.

IBM's Smarter Cities program combines services and software in integrated solutions and branded software. Solutions include Transportation Management Center, Emergency Management Center, Water Management Center, and Buildings Management Center. Branded software includes Intelligent Operations Center, Intelligent Water, Intelligent Transportation, Intelligent City Planning and Operations, Intelligent Video Analytics, Integrated Law Enforcement, IBM Cúram, IBM Care Management, IBM Maximo Asset Management, and IBM TRIRIGA.

## *Smart City Go to Market*

IBM Analytics, Global Business Services, and Sales and Distribution units all sell Smarter Cities offerings. IBM supports Smarter Cities clients through local sales and delivery teams deployed worldwide and technical resources in all major geographies.

IBM also goes to market with major alliances, channel partners, and industry influencers. IBM's partner strategy expands coverage and focus with technology and services vendors that build on IBM's Smarter Cities technology base and sell through their own channel. IBM partners with firms in specific markets, like water and transportation, to both sell offerings and influence the development of Smarter Cities. The company plans to use Bluemix, IBM's new application development marketplace, to expand the number of developers exposed to its Smarter Cities capabilities and include developer applications in its offerings.

IBM participates in many worldwide events, including broad Smarter Cities events, like World Cities Summit, and targeted domain events like Singapore International Water Week or ITS World Congress. IBM participates in related industry associations at local levels.

## *Smart City Strategy*

Smarter Cities is a cornerstone of the Smarter Planet strategy IBM has been executing since 2011. IBM's Smarter Cities strategy is to "grow as the essential source of solutions for forward-looking cities around the world seeking practical and economically competitive benefits from new technologies and insights." This strategy includes cities of all sizes, not just large cities.

The strategy introduces IBM to sets of new buyers that are looking to advance city/city region agendas. Only about half of these buyers are city officials. Enterprises are increasingly buyers of Smarter Cities offerings to serve both public and private objectives.

The strategy recognizes targeted cities, and buyers are much less looking to assemble IT parts and manage infrastructure. Instead, these buyers seek solution packages specifically aligned with city services and economic challenges. The strategy accelerates packaging of repeatable solutions made up of IBM SaaS software, assets, and services that are increasingly provided as "pay as you go" offerings on IBM's SoftLayer Cloud. The strategy also underscores the need to invest in advanced analytics technologies and services and collaborate with partners.

## *Strengths*

Smart City executives that are using or considering investing in IBM's business intelligence and analytics solutions should consider the following strengths:

- **Advanced analytics products and platforms.** Software products support both on-premise and SaaS/cloud delivery models across vertical domains. IBM's Apple, The Weather Company, and Twitter partnerships allow for mobile and data insights and analytics.
- **Standardizing on the IBM MobileFirst Platform.** IBM MobileFirst Platform is an open mobile application development platform for native, hybrid, and Web mobile applications. All IBM mobile applications support Android and iOS.
- **IBM Bluemix.** IBM Bluemix, an implementation of IBM's open cloud architecture, leverages Cloud Foundry to enable developers to rapidly build, deploy, and manage their cloud applications.

- **Client engagements.** IBM has over 5,000 client engagements per year across all city services and in all parts of the world with IBM subject matter experts in city operations, transportation, water, emergency, public safety, buildings, healthcare, asset management, and other city services.

## Challenges

Smart City executives that are using or considering investing in IBM's business intelligence and analytics solutions should consider the following cautions:

- Smart City customers report that sometimes the software is not at 100% functionality on day 1 because IBM is working with the city to develop specific functionality to its requirements. Cities report working closely with IBM's research scientists, statisticians, and developers to get products up to specifications; this is considered a benefit since it ties IT and analytics to operations staff within a city.
- Product portfolio is vast and can be confusing. IBM has a lot of Smart City modules and the functionality on these is constantly being updated. Understanding and keeping track of products can be a challenge and possibly hinder the decision-making process.
- The strengths of IBM Global Services (GS) as Smart City and technology experts do not always align well with the increased investments IBM is making to expand the software and cloud delivery portfolio. IBM GS remains geared toward customers with longer-term, higher-cost, and higher-touch consulting projects; an operating model is not always in sync with agile, fail-fast product deployment cycles, as with Bluemix apps – for example, for customers that have more in-house expertise.

## Microsoft

### Portfolio

Microsoft products include operating systems for computing devices, servers, phones, and other intelligent devices; server applications for distributed computing environments; productivity applications; business solution applications; desktop and server management tools; software development tools; video games; online advertising; and cloud-based solutions, such as Microsoft Azure, Microsoft Dynamics CRM Online, Microsoft Office 365, OneDrive, Skype, and Yammer. Microsoft is positioned as a Major Player in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape.

CityNext is the Microsoft initiative for Smart Cities. The CityNext foundational solutions include:

- Microsoft Azure cloud IaaS and PaaS services
- Microsoft Office 365 productivity suite
- Dynamics CRM
- Microsoft SQL database and analytical capabilities that are based on it
- Security solutions

Microsoft's data management and analytics capabilities leverage SQL Server, SharePoint Server, and Excel:

- Excel, particularly since the launch of Power BI in 2013, provides the self-service capabilities for data discovery, analysis, and visual exploration.
- SharePoint Server provides dashboard and scorecard capabilities.



- SQL Server BI capabilities include reporting and advanced analytical services, including predictive analytics.

Microsoft is making technology and market investments in cloud solutions, including hosted private clouds, service provider clouds managed by partners, and the Azure public clouds. Microsoft's private cloud offerings range from packaged on-premise solutions like the Cloud Platform System and Analytics Platform System to custom private clouds assembled by the city using Microsoft and open source products such as System Center, Windows Azure Pack, and SQL Server and Hadoop; Hadoop capabilities aim to enable users to query both structured and unstructured data in SQL Server and provision Hadoop clusters in the Azure cloud. These investments in cloud computing are helping Microsoft enhance its ability to scale solutions, including analytics for larger cities. Microsoft Power BI provides access and visualization via mobile devices; iOS and Android devices are currently supported; and Windows devices are on the road map for the second half of 2015.

### ***Smart City Go to Market***

Microsoft's go-to-market strategy relies primarily on partners that develop government-specific solutions based on its platform. To support this indirect sales strategy, Microsoft has put in place very granular pricing options that allow both global and SME partners to align their business model with the TCO requirements of city governments. Microsoft's flexible licensing programs include:

- Enterprise Agreement that offers the benefits of an Enterprise Agreement with lower up-front costs
- Microsoft Products and Services Agreement that consolidates all purchases into one simplified agreement with purchasing for online services, software, or a hybrid solution
- Select Plus for Government, for organizations that want to acquire their software licenses and services at any affiliate level
- Options for governments with fewer than 250 PCs, such as Open License, Open Value, and Open Value Subscription
- Enrollments for the Enterprise Agreement to standardize on the Microsoft tools used every day and move them beyond the desktop to equip devices and users where they are needed
- Server and Cloud Enrollment (SCE), an enrollment under the Microsoft Enterprise Agreement that allows highly committed customers to standardize broadly on one or more of the four server and cloud technologies from Microsoft
- Online Services, the latest Enterprise Agreement and the Microsoft Products and Services Agreement, aimed to support cloud deployment choices
- In 2015, Microsoft announced a new version of Power BI, which includes a free tier of service that offers 1GB of storage, and a free-to-download Power BI Designer, to develop charts and other data visualizations that can be uploaded and shared through the Power BI service. Cities that want to leverage Microsoft consultants as advisors in early stages of solution design can consider the Microsoft Premier Service offering, but that comes at an additional cost

The Microsoft CityNext portfolio is supported by a global marketing campaign that includes localized Web sites in 34 languages covering 72 countries. The campaign allows subsidiaries to execute at the highest CityNext level or with special focus on vertical industries most relevant to their geography – for example, Safer Cities or Healthier Cities under the Microsoft CityNext umbrella.



## Smart City Strategy

Microsoft launched CityNext in 2013, and it continues to invest in the underlying cloud, data analytics, productivity, and mobile platform. Microsoft's growth strategy in the Smart Cities space is to strengthen the partners' ability to leverage that platform to deliver industry-specific solutions that are meeting the most pressing needs of cities. This entails programs to provide them access to training and pricing mechanisms that offer flexibility to pilot and scale solutions. CityNext currently supports a catalog of over 40 city scenarios in health, education, public safety, government administration, energy and water, buildings and infrastructure, transportation, and tourism developed in partnerships with global and local partners, such as Accenture, Atos, Avanade, Bismart, Black Marble, Capgemini, CGI, COP-DATA, EastBanc Technologies, ICONICS, Invensys, OSIsoft, risual, Scalability Experts, Schneider Electric, and Unisys.

## Strengths

Smart City executives that are using or considering investing in Microsoft's business intelligence and analytics solutions should leverage the following strengths:

- Microsoft Azure cloud is offering Microsoft and its partnership network a flexible and scalable data platform to develop industry-specific solutions that can analyze data of different sizes, format, and sources to satisfy the needs of domain-specific and cross-domain analytical use cases in Smart Cities.
- Microsoft productivity suite and database technology installed base guarantees presence in city governments across the globe, which makes it easy to acquire competencies and increases the familiarity of users with SQL Server and Excel that are the building blocks of Microsoft analytics offering.
- Microsoft partner-led, platform-based business model is the most structured of all vendors analyzed in this IDC MarketScape.

## Challenges

Smart City executives that are using or considering investing in Microsoft's business intelligence and analytics solutions should consider the following cautions:

- The sophistication and variety of options for data visualization solutions still needs improvement. City executives should understand how to leverage the Datazen capabilities that Microsoft acquired in April 2015 to fill this gap.
- Microsoft solutions offer very cost-effective options to city governments, but the more customers depart from standard deployment (e.g., public cloud for Azure SQL Database and Azure SQL Warehouse) and configuration (e.g., for Dynamics CRM) models, the lower the economies of scale.

## Oracle

### Portfolio

Oracle's portfolio includes a wide variety of hardware and software products, including ERP, CRM, content management, project management and industry-specific applications, and middleware. Oracle is positioned as a Major Player in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape.

Oracle's Smart City Platform is intended to be a modular solution to address cities' requirements, including:

- Single point of entry for citizens through multiple channels
- Service orchestration with external partners, such as commercial providers and nonprofit
- City operations, including finance, HR, procurement, and some industry-specific processes
- City administration, including analytics and governance as well as risk and compliance
- City shared IT infrastructure

The business intelligence and analytics portfolio encompasses four pillars:

- **Enterprise Business Intelligence:** This is built around Oracle Business Intelligence Foundation Suite for business intelligence, including enterprise reporting, dashboards, ad hoc analysis, multidimensional OLAP, scorecards, and predictive analytics on an integrated platform.
- **Information Discovery and Advanced Analytics:** This includes Oracle Endeca Information Discovery and Oracle Big Data Discovery for discovering new insights from nontraditional data sources such as semi-structured and unstructured big data content in social media, Web sites, content management systems, raw text from documents, email, and more; advanced analytics for in-database data mining, graph analysis, text mining, big data SQL, and spatial analysis; and Oracle Real-Time Decisions.
- **Business Intelligence Applications:** This includes ERP Analytics, CRM Analytics, Hyperion, Primavera Project analysis, Tax Analytics, and Business Intelligence for Utilities.
- **Engineered Systems:** These are converged hardware-software products, such as Oracle Big Data Appliance, Oracle Exadata, and Oracle Exalytics.

Oracle is expanding its investment to support delivery of business intelligence and analytics to mobile devices and accommodate integration with a wider variety of sources of data. In particular, for the Smart City market it is collaborating with partners such as Siemens, Schneider, Verizon, Toshiba, and Hitachi, allowing cities to upload data from their Internet of Things devices into the Oracle Data Warehouse. Most recently, Oracle has ramped up investment in cloud services, such as Oracle BI Cloud Service's Visual Analyzer to provide new levels of data discovery, by building queries, reports, and dashboards.

### *Smart City Go to Market*

The Oracle Smart City Platform serves as the instrument to improve the awareness – and hence the revenue – of Oracle's analytical offering in the domain of local government. Oracle uses the platform value proposition to share customer cases, innovative use cases, and examples of implementation options in the context of Smart City discussions.

The Oracle Partner Network is the conduit to relay the Oracle Smart City Platform message with its underlying analytical capabilities; this serves both the network of existing partners and attracts new partners.

To convey its messages, Oracle participates in several industry events, such as Smart City Expo World Congress, Meeting of the Minds (Urban Age Institute), Metropolis (The World Association of Metropolises), and INTA (International Urban Development Association).

From a business development perspective, Oracle sales teams are targeting qualified cities/municipalities/metropolises in a concerted way, but each solution area has sales teams to

ensure focused expertise is available for each Smart Cities engagement. Key account teams coordinate pre-sales and sales across the entire solution portfolio for the largest cities. Account teams are incented to collaborate beyond their own territories, both by starting the relationship "bottom up" from a product/solution perspective and from a partner introduction or problem-definition perspective – more "top down" – around industry solutions. However, IDC analysis indicated that this is an area for further refinement and investment. Given long-standing legacy relationships, the vast Oracle portfolio, and the customer base across departments within a single city, the approach to cross-functional and departmental solutions is still underdeveloped.

## Smart City Strategy

Oracle's Smart City Platform is positioned as a comprehensive set of solutions that addresses the ever-increasing need to provide businesses and citizens with transparent, efficient, and intelligent engagement with their local authority/administration through any channel for any purpose and for a range of services from information requests and government programs enrollment to incident reporting or work order requests to online paperwork for start-ups and scheduling inspections.

Oracle's Smart City Platform intends to address three pillars that can make Smart Cities' programs sustainable:

- To establish a *Citywide nervous system*, enabling the citizens and the city to share responsibilities while offering maximum control at all levels in the community
- To maximize the *reuse of infrastructure*, allowing for future sources to be added and offer full independency toward additional solutions, disciplines, and appliances
- To provide the framework for a *Sentient City infrastructure* through intelligent controls that sense and act on the big data offered through connected citizens and sensors

## Strengths

Smart City executives that are using or considering investing in Oracle's business intelligence and analytics solutions should leverage the following strengths:

- Broad and deep set of BI capabilities, including industry-specific solutions, such as for utilities, infrastructure management, and public safety
- Global reach
- Strong ERP and, to a lesser extent, CRM installed base in local government that allows customers to leverage the existing relationship to explore new capabilities offered by the Oracle Smart City Platform

## Challenges

Smart City executives that are using or considering investing in Oracle's business intelligence and analytics solutions should consider the following cautions:

- Despite Oracle's significant commitment to present one face to the customer, the vast portfolio of products makes it difficult to intuitively navigate and select the analytical capabilities Smart Cities need, particularly for net-new customers.
- Marketing investments are less aggressive than some of the other competitors analyzed in this IDC MarketScape in terms of thought leadership in the Smart City space, thus positioning is not that strongly differentiated. IDC believes that the three pillars of Oracle's Smart City

Platform, like the Citywide Nervous System or Sentient City Infrastructure, do not have high customer awareness.

## Salesforce

### *Portfolio*

Salesforce provides enterprise public cloud computing solutions in six core markets: sales, customer service, marketing, analytics, communities, and cloud platforms. Salesforce offers social and mobile cloud applications and platform services as well as professional services to facilitate solution adoption. Leveraging IDC nomenclature, Salesforce is truly a 3rd Platform organization; its on-demand, cloud-based product portfolio focuses on functionality and service delivery rather than traditional hardware and/or software plays. Salesforce's integrated dashboard has one single location for consolidated information from multiple disparate systems, providing a quick visual snapshot of local service delivery, and allows for efficient collaboration among a broad and varied set of users. Salesforce's recent launch of Wave provides end users with multi-faceted visualization of data across different data sources. Last, Salesforce mobile offerings provide device interoperability and device agnosticism, in addition to valuable collaborative capabilities. Salesforce is positioned as a Contender in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape.

The following product offerings are those IDC considers to be most pertinent to this IDC MarketScape and for local government organizations looking to leverage business analytics:

- **Enterprise CRM:** The device-agnostic Salesforce's enterprise CRM suite allows organizations to automate business processes to improve contact center agents' productivity as well as help migrate citizens to online self-service.
- **Community Cloud and Chatter:** Community cloud and chatter are collaborative platforms that provide a given community with the ability to dynamically create, search, and share information pertinent to its interests.
- **Wave Analytics Cloud:** Wave is Salesforce's cloud-based analytics platform that stresses accessibility and usability. Tagged as analytics for everyone, the offering intends to pull market share from the larger, more customized analytics vendors.
- **Salesforce1 Platform:** The Salesforce1 Platform is a platform-as-a-service offering that allows organizations to manage their infrastructure, security, and databases so that organizations can focus on building business applications.

### *Smart City Go to Market*

Salesforce goes to market through both direct and indirect channels, with a broad albeit relatively nascent partner ecosystem. Its delivery model is limited to public cloud offerings only, which can be a limitation in a market that is often keen to operate within a privately held or on-premise delivery environment. The range of services Salesforce or its partners offer is comparatively smaller than some of the other vendors assessed for this IDC MarketScape (e.g., IBM and SAP). However, for end users, the main appeal of turning to Salesforce is accessibility and usability.

Salesforce's software modules are configurable, flexible, and intuitive, albeit somewhat skewed to the private sector business environment. Its innovative, customer-centric culture and organizational responsiveness means that this is likely to be a short-term constraint; indeed, the public sector customers we interviewed for this project were confident this would be remedied in the very near term. In fact, Salesforce has been offering solutions to the public sector for over 10 years, and public sector is now one of the company's fastest-growing business segment. The company has built public sector-

specific products such as Gov Cloud and is FedRAMP certified. As a result, this responsive, innovative culture has already attracted large customers, such as the City of San Francisco.

Salesforce's pricing is flexible, straightforward, competitive, and very granular, allowing users to pay only for the specific modules they are interested in. The company is expanding its presence into newer geographies but currently has sales personnel in major geographies only. As noted previously, Salesforce has a strong customer-centric focus and regularly solicits customer feedback on its solutions and iterates its software releases accordingly.

## **Smart City Strategy**

In 2014, Salesforce's revenue grew 33% over the previous year – the healthiest of all of the vendors we assessed in terms of market momentum. Salesforce will continue to innovate in a number of key areas, including integration capabilities, visualization, and mobility. From an analytics perspective, it intends to broaden its capabilities into the predictive analytics sphere in the next 12-18 months. Salesforce's Connected Cities Solutions deliver standard, cloud-based, turnkey, responsive, and easy-to-configure solutions, working with key clients to address specific use cases. It should be noted that Salesforce was quite guarded with respect to a number of the key evaluative criteria we assembled to assess vendors. For this reason, it is difficult to further comment on key elements of Salesforce's strategy.

## **Strengths**

Smart City executives that are using or considering investing in Salesforce's business intelligence and analytics solutions should leverage the following strengths:

- **Usability:** Salesforce customers consistently tell IDC that the solutions are intuitive, accessible, and eminently usable. Of all of the vendors assessed, Salesforce was rated highly in terms of ease of use.
- **Pricing:** Pricing is flexible, modular, and fairly straightforward; there is some complexity that emerges with differing licensing options.
- **Customer-centric corporate culture:** The customer-centric corporate culture at Salesforce resonates deeply with many of the citizen service customer organizations.
- **Mobile enablement:** Salesforce's offerings are almost universally device agnostic and able to seamless channel data and workflow from one device to the next.

## **Challenges**

Smart City executives that are using or considering investing in Salesforce's business intelligence and analytics solutions should consider the following cautions:

- **Private sector bias:** While Salesforce has a strong public sector client base, according to the customer interviews conducted for this project, its offerings are inherently skewed to the broader business community, making the overall "fit" with public sector service delivery difficult.
- **Lacking public sector-specific templates:** Salesforce's offerings could benefit from more specific public sector context, typically delivered by vertical-specific templates. While its functionality is strong on the BI and visualization side of its analytics offerings, it is comparatively weak in the local government context.

## SAP

### *Portfolio*

SAP is a global enterprise software vendor with a broad portfolio encompassing applications, mobile, cloud, database and middleware technology, and business intelligence and analytics. SAP is positioned as a Leader in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape. Future Cities, its branded Smart City solution, runs across SAP's three market categories (applications, platform, network), with a strong footprint in analytics. SAP analytics solution portfolio includes:

- SAP Business Objects, which is the foundation for standard financial reporting and budgeting
- SAP InfiniteInsight (formerly KXEN), which helps develop and deploy algorithms for predictive analytics
- SAP Lumira, which is a recent acquisition that completes the SAP portfolio for data visualization

The significant technology and market investment in the SAP HANA in-memory database technology is the foundation for SAP solutions in the big data and analytics market to deliver on real-time or near-real-time use cases.

SAP's portfolio also includes pre-templated solutions that address government-specific requirements, such as the SAP City Performance Management that offers a Smart City-specific content library for scorecards, dashboards, and reports; the SAP Real-Time Situational Awareness for Public Safety and Security; and the SAP Business Planning and Consolidation for budgeting.

SAP Mobile Platform and SAP Cloud add further flexibility for cities that want to provision analytics to multiple devices and locations.

### *Smart City Go to Market*

SAP has several routes to market for analytical sales, and these include direct sales force focused around solutions for industries, whereby the sales process will include a broad range of needs – for example, HCM, cloud, or CRM applications. Within these interactions with urban governments, analytics plays a key and essential role in the delivery of a complete solution. SAP also has a line-of-business sales force whereby analytical sales specialists will support industry teams and also focus directly on urban government for analytical customer needs.

SAP also has a strong focus upon indirect channels, as many of the customer projects are delivered by global partners, including systems integrators, such as Accenture and Deloitte; IT vendors, such as Huawei and Cisco; and ISVs. SAP is investing to adapt and expand its partnership ecosystem as the SAP HANA portfolio can offer a platform also for SMEs to develop government-specific analytical applications; examples of such partnerships include Rolta in the IoT space as well as local government service specialists, such as Olarion (United States), KMD (Denmark), Communit (Austria).

SAP is also simplifying pricing to reflect more closely the customer needs, not the items on the price list, for example, by offering bundles for analytics plus SAP HANA. Also, the new pricing tries to make sure everything is cloud ready and available through a subscription-based pricing and aligns with the partner delivery capabilities to help the partners focus on a specific government segment.

## Smart City Strategy

SAP Future Cities is SAP's unified strategy and approach for all urban government (regional, local, and cities) and the broader urban ecosystem. It encompasses three main urban value areas – Improving Livability (including public safety), Transforming Government (including citizen engagement), and Growing Economic Prosperity (including transport and infrastructure management) – as well as a set of supporting capabilities to optimize middle- and back-office operations, such as people and talent management, budget and finance, procurement, and IT management.

SAP is investing in co-innovation with both customers and partners to support its increased focus on Real-Time Situational Awareness (RTSA), complex event processing, visualization, graph engine, and predictive analytics for cities and urban agencies. This approach has been highly successful – because the content may be transport in one city, public safety in another, and cyberthreats in a third – yet the architecture, components, and needs are essentially the same. Examples of customers that participated to co-innovation include the City of Boston, State of Indiana, State of New South Wales, City of Cape Town, City of Auckland, and Victoria State EPA (Melbourne).

## Strengths

Smart City executives that are using or considering investing in SAP's business intelligence and analytics solutions should leverage the following strengths:

- Broad and deep set of BI capabilities
- Global reach
- Strong ERP and, to a lesser extent, CRM installed base in local government that allows customers to leverage the existing relationship
- SAP HANA in-memory technology as the foundation for real-time analytics
- Proactive approach to co-innovation with partners and customers to drive more government-specific content

## Challenges

Smart City executives that are using or considering investing in SAP's business intelligence and analytics solutions should consider the following cautions:

- Net-new customers that do not have an installed base of SAP ERP or CRM should invest time and resources to achieve the full benefits of SAP's vast portfolio of analytical capabilities.
- SAP's SME partners offering industry-specific analytical capabilities still struggle to find an easy-to-manage engagement model to contribute to innovation on the SAP HANA platform.
- The integration on the SAP HANA platform of the vast portfolio of business intelligence and analytical products that were acquired over the past few years is still in progress.

## SAS

### Portfolio

Founded in 1976, SAS is the largest independently owned business intelligence/analytics firm in the marketplace. SAS is positioned as a Major Player in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape. SAS' global enterprise business analytics software and services focus on the following five solution areas:

- Advanced BI and predictive analytics



- Data, decision, risk, and performance management
- Customer/citizen engagement, fraud, and security intelligence
- Supply chain optimization
- Data discovery and visualization

In addition, SAS offers big data accelerators like in-memory analytics, solutions for Hadoop, and cloud-based analytics.

SAS' recent foray into Smart Cities has been strengthened by the company's partnership with the International City/County Management Association (ICMA) via their joint ICMA Insights offering. ICMA Insights offers performance management and customized, innovative business analytics to meet the needs of nearly 9,000 city and county managers, the cumulative reach of which extends to some 185 million U.S. citizens. The ICMA Insights offering includes 900 key input, output, and outcome measures on seven service clusters; access to the software offerings is tiered to allow municipalities to manage as much, or as little, of their operational data as they want.

SAS is expanding its Smart City portfolio to use big data analytics and the Internet of Things to help city leaders with decision making. An example of this is SAS' visual analytics offering, which was used by the Town of Cary to handle smart meters and water days via the Aquastar portal.

### *Smart City Go to Market*

SAS' go-to-market approach for its analytics offerings works through both direct and indirect channels. Its direct sales force is configured around a more vertical- or industry-specific solution approach.

SAS' indirect channel is multi-faceted and far-reaching – including technology vendors like Accenture Capgemini, IBM, and Deloitte as well as key channel partners like Executive Information Systems, ICMA, Cisco, and INTEL.

Currently, the ICMA Insights/SAS performance management offering for Smart Cities is deployable in North America, Latin America, EMEA, and Asia/Pacific via a hosted private cloud deployment. In 2015, private cloud deployment will be made available globally. SAS does not appear to be venturing into the public cloud deployment environment. In terms of its human resource profile, a sizable portion of its Smart Cities staff have previously worked in government office.

### *Smart City Strategy*

Broadly speaking, SAS' strategy is focused on enhancing usability, interoperability, scalability, manageability, and mobility.

More specifically, SAS' strategy is focused on three core pillars:

- **Usability:** SAS has been investing heavily in visualization and good mobile offering.
- **Vertical-specific capabilities:** SAS has developed numerous public sector-specific predictive use cases (e.g., transport and mobility).
- **Business model innovation/digital transformation:** The ICMA offering is effectively an "insights as a service" offering rather than a simple "software as a service" offering.

SAS is further entrenching its offerings in the cloud, mobile, and IoT spaces. SAS' current mobile deployments are extensive in North America, with plans to extend this to other regions in the next 12-18 months. SAS' mobile architecture is supported through native applications for both Apple iPads and

Android tablets and is available for free from both the Apple App Store and Google Play. Beyond its ICMA Insights offering, SAS has begun to implement a number of innovative IoT-enabled Smart City deployments in the water management space. In addition, SAS corporate has a keen interest in, and focus on, the open data movement that is increasingly prominent in larger global municipalities.

Like SAP, SAS is trying to simplify its offerings and pricing to align better with customer needs. Its upper-tier pricing within the ICMA offering is extremely affordable. The lower-tier pricing is also affordable; the pricing tiers ensure affordability at every level of deployment.

Part of a broader outreach and adoption strategy, the global SAS Analytics U initiative offers free software and learning resources to teachers, professors, students, academic researchers, and independent learners for noncommercial learning purposes. The strategy is simply to germinate SAS' software offerings with tomorrow's data scientist; the SAS Analytics U initiative seeks to drive adoption of advanced analytics.

## Strengths

Smart City executives that are using or considering investing in SAS' business intelligence and analytics solutions should leverage the following strengths:

- **Capacity:** SAS' offerings allow government agencies to address large volumes of data.
- **Analytics power (in-memory):** SAS' distributed in-memory provides for exceptionally quick data processing speeds.
- **Expertise:** SAS has had a strong market presence in the analytics space, including in the government sector, for nearly 40 years.
- **SAS VA:** The visual analytics offerings, in conjunction with their mobile interfaces, are innovative and affordable.
- **Customer responsiveness:** SAS' global corporate culture is heavily invested in customer satisfaction via multiple annual customer satisfaction surveys, end user forums, and so forth; SAS seeks to instill customer centricity into its strategic development. SAS has also made changes to its pricing model to respond to customers, as evidenced in the ICMA Insights offering.

## Challenges

Smart City executives that are using or considering investing in SAS' business intelligence and analytics solutions should consider the following cautions:

- **Usability:** SAS' offerings are often perceived by end users as being inaccessible or in need of intensive customization though the ICMA Insights product requires no customization.
- **Pricing:** While gains have been made recently in terms of greater pricing transparency, SAS has a reputation in the marketplace as being overly costly.
- **Awareness:** While SAS is the largest independently owned analytics vendor in the space, brand awareness has been compromised as a result.

## Tableau *Portfolio*

Tableau Software produces a family of interactive data visualization products focused on business intelligence. It is positioned as a Contender in the Worldwide Smart City Business Analytics Software 2015 IDC MarketScape. Tableau has four core products:

- **Tableau Desktop:** Tableau Desktop is an interactive, self-service analytics product designed to be used by anyone with data. Key capabilities include visual analytics with drag-and-drop pictures of data; a straightforward user interface; analytic functions that include forecasting, statistical analysis, and correlations; the ability to access and query a wide variety of data sources without scripting or programming; and the ability to share and embed content into documents or onto Tableau Server.
- **Tableau Server:** Tableau Server is a business intelligence platform with enterprise-grade data management, scalability, and security. The features of Tableau Server are designed to foster more sharing of data to improve the dissemination of information across an organization and promote improved decision making.
- **Tableau Online:** Tableau Online is the cloud hosted version of Tableau Server, built on the Tableau Server platform and providing the functionality of Tableau Server without requiring customers to manage physical infrastructure. Tableau Online can be accessed by clients remotely using Tableau Desktop, a browser, or a mobile device.
- **Tableau Public:** Tableau Public is a completely free offering that offers most of the features of Tableau Desktop and Tableau Server but focuses on serving dynamic content to top tier Web sites, which users can share on social media like Facebook or Twitter.

### *Smart City Go to Market*

Tableau has a public sector government business unit with dedicated sales management, sales representatives, consulting, alliances, and marketing staff who serve state and local government markets. The majority of its sales are concentrated in North America though the company also has significant revenue from Europe.

Tableau's products and services align well to Smart City growth initiatives; so with a mature product to market, the company is focused on:

- Growing awareness of Tableau in local governments by creating a Government Playbook with messaging and content under development, and executing a program for local government user groups
- Increasing sales and support staff to handle current high-level of growth (In 2014, Tableau hired a marketing manager with significant experience in education and government markets.)
- Fine-tuning partner, alliance, and channel strategies to support focus on particular local departments and/or programs in planning and operations, healthcare, public safety, utilities, education, public works, and transportation
- Sharing best practices and customer success stories between North America, EMEA, and APAC (Tableau is working to identify best practice use cases and execution methodologies for cities that are similar in city size, analytics staff, technology sophistication, and specific need.)

Tableau Public is another key aspect of Tableau's go-to-market strategy. Tableau Public allows Tableau to test new product features and conduct user research as well as generate greater

awareness of Tableau. Since its launch, Tableau Public has served over 300 million views worldwide, with over 500 million workbooks published from more than 60,000 authors.

### **Smart City Strategy**

Tableau does not have branded Smart City offerings that it sells directly, and it does not verticalize its product. OEM partners embed Tableau's technology into vertical- or industry-specific applications, such as Smart City business analytics products. For example, Tableau is the technology behind Forecast5's 5Sight product, which provides BI software for local governments including the ability to benchmark performance against peers. Tableau also is the technology behind Streetline's core ParkSight parking analytics platform, which enables cities to analyze urban parking behavior.

To support its go-to-market strategy with product investments, Tableau is making investments to connect with "any data out there." The company is investing in back-end operational functionality so that it can pull in transactional and operational data from databases from companies like SAP or PeopleSoft and work with data inside of products like SAP HANA or Sybase, IBM's DB2, Netezza, and so forth or unique departmental systems without the need for scripts. The focus is enabling many government workers to be able to do data analysis even without specialized skills and create reports quickly. To this end, the company continues to improve data cleaning tools.

Tableau supports native apps for iOS and Android tablets and mobile browsers via HTML5. Tableau plans to release a native app for Apple phones as well as enable HTML5 support for Windows phones in 2015.

### **Strengths**

Smart City executives that are using or considering investing in Tableau's business intelligence and analytics solutions should leverage the following strengths:

- Tableau is focused on data blending and integration. It allows users, for example, to connect SQL to an Excel file to a statistical file. Users can drag and drop data to see the relationships between data.
- The drag-and-drop user interface, the ability to create data tables without programming or scripting, and the ability to share visualizations, reports, and dashboards makes data analysis available to more people.
- Tableau is good for quick analysis and response rates and is ideal for events (emergencies) to support field workers who need to make quicker operational decisions as well as process follow-up requests from executives who want more detail from existing reports.
- Tableau users report that Tableau is "fun" to use. Interactive dashboards are described as "beautiful." Because the data is designed to be easy to share, it is easy to have Tableau as part of one's Open Data initiatives.
- Tableau has an author-once, consume-everywhere strategy to mobile, which means that all Tableau visualizations are mobile and touch optimized.

## Challenges

Smart City executives that are using or considering investing in Tableau's business intelligence and analytics solutions should consider the following cautions:

- Tableau's sales are heavily focused in North America, followed by EMEA, and has a small footprint in Latin America and Asia/Pacific (APAC). In addition, its public sector sales are a small percentage of revenue, though experiencing rapid growth.
- Tableau is considered less of an enterprise standard for cities, most of whom, at least in developed countries, have standardized on other products. Tableau may be considered a complementary product solving the challenges users are experiencing with their other products.
- Tableau does not verticalize its products to any vertical, which means that it does not develop specific Smart City applications or functionality though its partners do.
- Mapping functionality may not be granular enough for the certain types of mapping used in cities. At this point, Tableau geocodes to a zip code but not to an address. In addition, it does not process shapefiles.

## APPENDIX

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### Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share of each individual vendor within the specific market segment being assessed.

### IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of a review board of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

## Market Definition

IDC Government Insights' Worldwide Smart City Business Analytics Software 2015 IDC MarketScape focuses on global providers as our research shows exceptional growth and interest in BI analytics within the Smart Cities context.

This IDC MarketScape focuses on a subset of IDC's business analytics software market.

The total business analytics market comprises three primary segments: performance management and analytic applications, business intelligence and analytic tools, and data warehouse platform software.

The scope of this IDC MarketScape is limited to:

- **Business intelligence and analytic tools.** These software tools include query, reporting, and multidimensional analysis tools; advanced and predictive analytics tools; spatial information analytics tools; and content analytics.
- **Performance management and analytic applications.** IDC defines performance management and analytic applications as software solutions that:
  - Structure and automate a group of tasks pertaining to the review and optimization of business operations
  - Function independently of an organization's core transactional applications, yet can be dependent on such applications for data and may send results back to these applications
  - Are time oriented and integrate data from multiple sources (internal or external to the business)

## Smart City Market Definition

Smart Cities focus on the goals of economic development, sustainability, innovation, citizen engagement, and building an ecosystem of partners to fundamentally change and improve the quality of life for its residents. These goals are inextricably linked to produce systemic outcomes including environmental and social factors. Technologically, the value architecture of a Smart City is founded on key enabling technologies like the Internet of Things and IDC's four technology pillars – big data, mobile technologies, cloud computing, and social business – that help Smart Cities meet business imperatives like being more innovative, improving productivity, and providing better citizen services.

## Strategies and Capabilities Criteria

Table 1 and Table 2 contain market-specific definitions and the weighing criteria for both the strategies and capabilities axes.

**TABLE 1**

**Key Strategy Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Strategies Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
<b>Offering strategy</b>		
Functionality or offering road map	<ul style="list-style-type: none"> <li>▪ The solution provides traditional and advanced capabilities as defined in the business analytics definition.</li> <li>▪ The solution includes specific local government business processes (as opposed to generic), which would include specific business rules, issues, or processes important to local government like overtime analysis for HR or GIS. Scoring includes GUI and design ease of use and functionality.</li> <li>▪ The solution is in use by municipalities and local governments in compliance with central/federal, state, and local rules and bylaws.</li> <li>▪ Clarity on the road map is also important because many vendors talk about features and functions in general but do not provide a clear road map that aligns with customers' strategy and with the ability to extend/integrate/mobilize existing capabilities.</li> </ul>	3.0
Delivery model	<ul style="list-style-type: none"> <li>▪ Buyers are provided with operational flexibility to meet their existing business models, with visibility of how the same offering can be delivered in alternate ways as a customer adjusts its delivery priorities. Delivery model meets current customer requirements and allows for adoption of new delivery models without prohibitive cost implications; execution methodology mitigates risks to deployment schedule. Key areas for consideration are cloud or hybrid offerings, support for shared services models, risk management, management of shadow IT, and additional project costs. This includes level of SI or other services required for deployment. There is communication and training related to new product releases or upgrades.</li> <li>▪ The accent is on cloud here, from the perspective of things like detailed information assurance and performance SLAs for a SaaS solution and the ability to integrate with other cloud and non-cloud solution for sourcing data.</li> </ul>	2.0
Cost management strategy	<ul style="list-style-type: none"> <li>▪ The solution is competitively priced and does not require significant investment in hardware to achieve desired performance levels. Solution is easily configurable and does not require significant customization or high support costs. For cloud-based models, pricing structures/T&amp;Cs are clear and easy to understand. The accent is on the fact that there should be no restrictions in terms of minimum number of users or workloads.</li> </ul>	2.0
Portfolio strategy	<ul style="list-style-type: none"> <li>▪ NA</li> </ul>	NA
Range of services strategy	<ul style="list-style-type: none"> <li>▪ Measurements of excellence are ROI, issues resolution, and outcomes. Solution is tied to program, department, or agency mission and outcomes, and these can be measured (i.e., reduction in overtime abuse, faster resolution of payments, improved scheduling or resource allocation that results in improved service delivery, prediction and prevention of issues/reduction in incidents).</li> </ul>	1.0



**TABLE 1**

**Key Strategy Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Strategies Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
Future integration strategy	<ul style="list-style-type: none"> <li>The solution allows for easy integration to third-party components and entities — content (e.g., social media, sensor networks), software (e.g., GIS modules, modules from other analytics vendors, enterprise resource planning, MDM), and with other agency and department systems, including those in other jurisdictions or levels of government data hubs. Vendors that can demonstrate that they have completed a migration to a service-oriented architecture will be rated highly. Providers are able to show the development of an advanced programming language such as .NET or Java.</li> </ul>	1.0
Other offering strategies	<ul style="list-style-type: none"> <li>Other offering strategies include mobile computing.</li> </ul>	1.0
Subtotal		10.0
<b>Go-to-market strategy</b>		
Pricing model	<ul style="list-style-type: none"> <li>Pricing includes consideration of partnering/sponsorship where the vendor is able to support creative funding.</li> </ul>	3.0
Sales/distribution strategy	<ul style="list-style-type: none"> <li>The focus of the analysis is on how the vendor is investing to strengthen government-dedicated sales and partnerships.</li> </ul>	3.0
Marketing strategy	<ul style="list-style-type: none"> <li>How the vendor is planning to become even more "vertical" in its marketing efforts: Smart Cities–specific user group, Smart Cities–specific event, Smart Cities–specific collateral. We would look for transparency into the next two to three years' plan about those items.</li> </ul>	3.0
Customer service strategy	<ul style="list-style-type: none"> <li>Customer satisfaction is a key goal and the vendor measures this in a structured way.</li> <li>The vendor has a good ratio of customer service, support, professional services, and training staff available, either via vendor's own staff or through professional services partner.</li> <li>The vendor has its ecosystem of partners well integrated and trained to ensure consistent customer experience and assure customers that they can get full value out of the portfolio.</li> </ul>	1.0
Subtotal		10.0
<b>Business strategy</b>		
Growth strategy	<ul style="list-style-type: none"> <li>Growth plans will be analyzed.</li> </ul>	3.0
Innovation/R&D pace and productivity	<ul style="list-style-type: none"> <li>In this case, we would look more from a qualitative standpoint how the vendor plans to translate innovation into the product road map — new processes to connect R&amp;D and product development, new processes to enhance collaboration with partners, and new processes to embed customer feedback into product innovation.</li> </ul>	2.0

**TABLE 1**

**Key Strategy Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Strategies Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
Employee strategy	<ul style="list-style-type: none"> <li>The vendor has plans to hire more former government employees and/or increase investment in training</li> </ul>	2.0
Other business strategies	<ul style="list-style-type: none"> <li>Centralized Smart City function that is cross-department with a focus on integrating siloed teams that serve local government clients. Support at board level for investment in Smart Cities and urban clients. Understanding of client needs based on their level of Smart City maturity. Understanding of leveraging analytics assets across multiple functions or use cases; how well the vendor can integrate data from various data sources — sensors, external data sources, and so forth.</li> </ul>	3.0
Subtotal		10.0

Source: IDC, 2015

**TABLE 2**

**Key Capability Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Capabilities Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
<b>Offering capabilities</b>		
Functionality/ offering delivered	<ul style="list-style-type: none"> <li>The solution provides traditional and advanced capabilities as defined in the business analytics definition.</li> <li>The solution includes specific local government business processes (as opposed to generic), which would include specific business rules, issues, or processes important to local government like overtime analysis for HR or GIS. Scoring includes GUI and design ease of use and functionality.</li> <li>The solution is in use by municipalities and local governments in compliance with central/federal, state, and local rules and bylaws.</li> </ul>	3.0

**TABLE 2**

**Key Capability Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Capabilities Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
Delivery model appropriateness and execution	<ul style="list-style-type: none"> <li>Buyers are provided with operational flexibility to meet their existing business models, with visibility of how the same offering can be delivered in alternate ways as a customer adjusts its delivery priorities. Delivery model meets current customer requirements and allows for adoption of new delivery models without prohibitive cost implications; execution methodology mitigates risks to deployment schedule. Key areas for consideration are cloud or hybrid offerings, support for shared services models, risk management, management of shadow IT, and additional project costs. This includes level of SI or other services required for deployment. There is communication and training related to new product releases or upgrades.</li> </ul>	2.0
Cost competitiveness	<ul style="list-style-type: none"> <li>The solution is competitively priced and does not require significant investment in hardware to achieve desired performance levels. Solution is easily configurable and does not require significant customization or high support costs. Vendor offers discounts for minimum number of licenses. For cloud-based models, pricing structures/T&amp;Cs are clear and easy to understand.</li> </ul>	2.0
Portfolio benefits delivered	<ul style="list-style-type: none"> <li>NA</li> </ul>	NA
Range of services	<ul style="list-style-type: none"> <li>Measurements of excellence are ROI, issues resolution, and outcomes. Solution is tied to program, department, or agency mission and outcomes, and these can be measured (i.e., reduction in overtime abuse, faster resolution of payments, improved scheduling or resource allocation that results in improved service delivery, prediction and prevention of issues/reduction in incidents).</li> </ul>	1.0
Integration	<ul style="list-style-type: none"> <li>The solution allows for easy integration to third-party components and entities — content (e.g., social media, sensor networks), software (e.g., GIS modules, modules from other analytics vendors, enterprise resource planning, MDM), and with other agency and department systems, including those in other jurisdictions or levels of government data hubs. Vendors that can demonstrate that they have completed a migration to a service-oriented architecture will be rated highly. Providers are able to show the development of an advanced programming language such as .NET or Java.</li> </ul>	1.0
Other offering capabilities	<ul style="list-style-type: none"> <li>Other offering capabilities include mobile computing.</li> </ul>	1.0
Subtotal		10.0

**TABLE 2**

**Key Capability Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Capabilities Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
<b>Go-to-market capabilities</b>		
Pricing model options and alignment	<ul style="list-style-type: none"> <li>Pricing includes consideration of partnering/sponsorship where the vendor is able to support creative funding.</li> </ul>	4.0
Sales/distribution structure, capabilities	<ul style="list-style-type: none"> <li>The vendor's sales capabilities are well diversified, combining direct presence with indirect channels (VARs, network service providers, SIs, etc.). Beyond simply expanding market reach, the vendor's partners also play a role in solution innovation.</li> <li>The vendor maintains a dedicated government sales team.</li> </ul>	2.0
Marketing	<ul style="list-style-type: none"> <li>The vendor's messaging is fine-tuned to the needs of government and is well integrated across its GMS activities with partners.</li> </ul>	2.0
Customer service	<ul style="list-style-type: none"> <li>Customer satisfaction is a key goal and the vendor measures this in a structured way.</li> <li>The vendor has a good ratio of customer service, support, professional services, and training staff available, either via vendor's own staff or through professional services partner.</li> <li>The vendor has its ecosystem of partners well integrated and trained to ensure consistent customer experience and assure customers that they can get full value out of the portfolio.</li> </ul>	2.0
Subtotal		10.0
<b>Business capabilities</b>		
Growth strategy execution	<ul style="list-style-type: none"> <li>The vendor has solid market momentum and growth as measured by ongoing acquisition of new clients and expansion of existing relationships.</li> </ul>	3.0
Innovation/R&D pace and productivity	<ul style="list-style-type: none"> <li>A percentage of revenue is invested in R&amp;D, with focus on innovation in product development but also in supporting innovation within cities. Vendor focus is on risk management support, building innovation support into procurement, implementation, and support process; and partnerships with other vendors in the ecosystem as well as academia as well as involvement with industry groups, international associations, and economic development councils.</li> </ul>	2.0

**TABLE 2**

**Key Capability Measures for Success: Worldwide Smart City Business Analytics Software Vendors**

Capabilities Criteria	Market-Specific Subcriteria Definitions	Subcriteria Weights
Employee management	<ul style="list-style-type: none"> <li>The vendor has put into place stringent requirements for its employees to understand government requirements. Based on customer interviews, the vendor's employees obtain high marks from customers in terms of the vendor's perceived employee retention rates and overall competency.</li> </ul>	2.0
Other business capabilities	<ul style="list-style-type: none"> <li>Centralized Smart City function that is cross-department with a focus on integrating siloed teams that serve local government clients. Support at board level for investment in Smart Cities and urban clients. Understanding of client needs based on their level of Smart City maturity. Understanding of leveraging analytics assets across multiple functions or use cases; how well the vendor can integrate data from various data sources — sensors, external data sources, and so forth.</li> </ul>	3.0
Subtotal		10.0

Source: IDC, 2015

**LEARN MORE**

**Related Research**

- *Perspective: Social Media and Smart Local Law Enforcement* (IDC Government Insights #GI3CAG15, June 2015)
- *Western Europe Smart Cities Barometer* (IDC Government Insights #GITS06X, June 2015)
- *Perspective: Smart City Montreal – The C\$227 Million Question* (IDC Government Insights #GI4CAG15, April 2015)
- *Business Strategy: Government Digital Transformation: An Information Management Framework* (IDC Government Insights #GITS05X, April 2015)
- *Gulf Cooperation Council Countries Leading CEMA in Smart City Initiatives: Key Drivers and Success Factors* (IDC #CEMA22323, March 2015)
- *Methods and Practices: Smart City Case Study – GIFT City, Gandhinagar* (IDC Government Insights #IN250911, January 2015)
- *IDC PlanScope: The Essentials of Internet of Things Investment for Smart Cities* (IDC Government Insights #GI253551, January 2015)
- *IDC FutureScope: Worldwide Smart Cities 2015 Predictions* (IDC #253164, December 2014)
- *Business Strategy: IDC MaturityScope Benchmark – Smart Cities – An Assessment of U.S. Cities and States* (IDC Government Insights #GI253314, December 2014)

- *Best Practices: Strategic ICT Sourcing for Critical Infrastructure and Management Competencies in Asia/Pacific Smart Cities – Through the Lenses of Regional Case Studies* (IDC Government Insights #AP246129, April 2014)
- *Best Practices: Applying the Smart City Maturity Model – Lafayette, Louisiana, and the Deployment of Its Municipal Fiber-to-the-Home Network* (IDC Government Insights #GI247911, April 2014)
- *Methods and Practices: IDC Government Insights' Worldwide Smart City Taxonomy, 2014* (IDC Government Insights #GI244956, February 2014)
- *Business Strategy: Building Synergies in the Smart Ecosystem – How Smart Cities Can Support Smart Building Technology Deployment* (IDC Energy Insights #EI241375, June 2013)
- *IDC MarketScape: U.S. Business Consulting Services for Smart Cities 2013 Vendor Analysis* (IDC #242453, April 2013)
- *Business Strategy: IDC Government Insights' Smart City MaturityScape – Assessment and Action on the Path to Maturity* (IDC Government Insights #GI240620, April 2013)

## Synopsis

This IDC study provides an analysis of business analytics solution providers that cater to the Smart City market. Business intelligence and analytics are central to Smart City initiatives as these solutions are what puts the "smart" in Smart Cities.

"Cities need to have an independent assessment of which vendors can provide the best solution for their needs," said Ruthbea Yesner Clarke, research director for IDC's Smart Cities practice. "The vendors studied for this IDC MarketScape are among the few business analytics vendors that have specific offerings geared toward Smart Cities and are addressing the most important characteristics for Smart Cities. This report will help city decision makers understand their options more fully."

## About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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