



IDC MarketScape

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

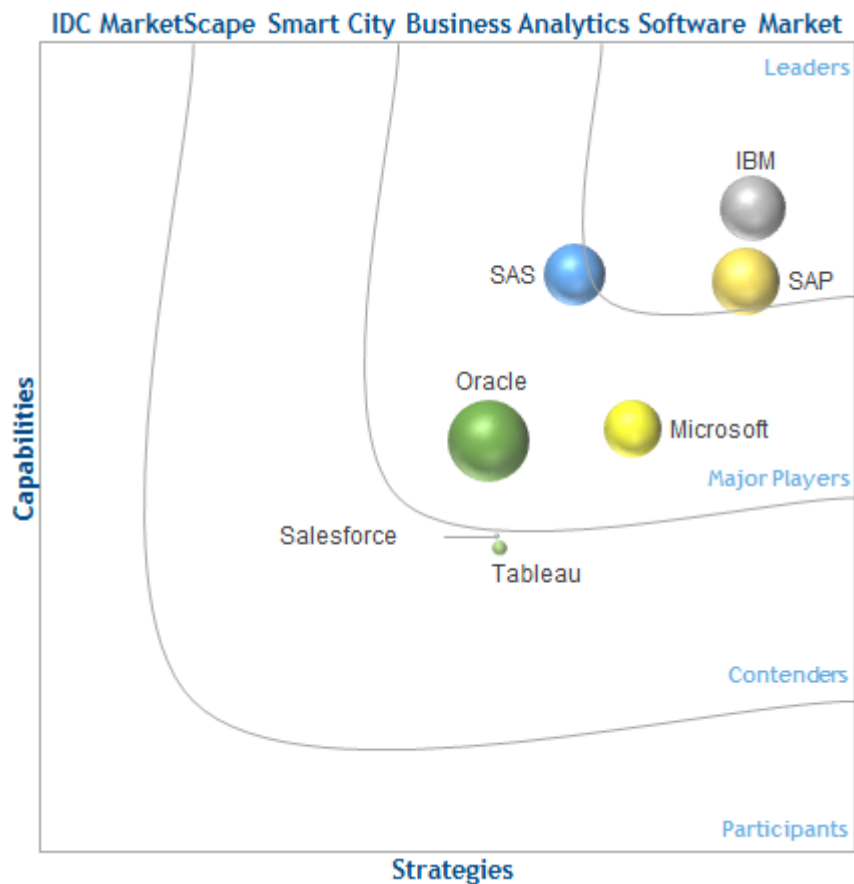
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THIS IDC MARKETSCAPE EXCERPT FEATURES SAS INSTITUTE

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Smart City Business Analytics Software Vendor Assessment



Source: IDC Government Insights, 2015

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Smart City Business Analytics Software 2015 Vendor Assessment (Doc #GI259502). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More.

IDC OPINION

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

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

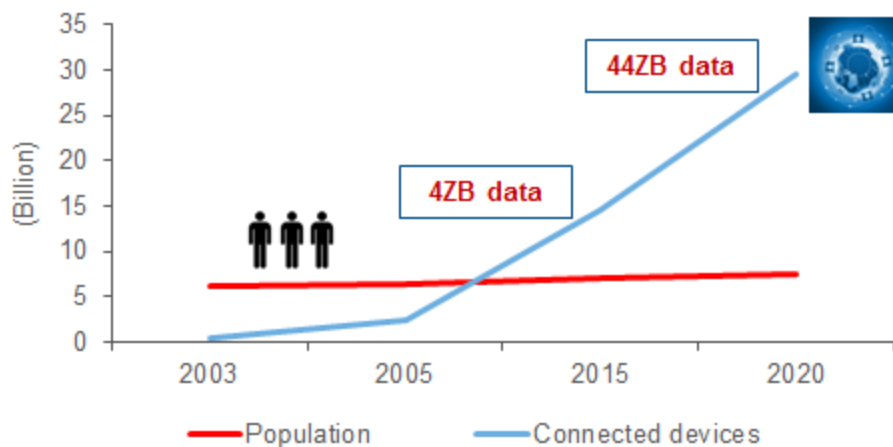
Why Is a Smart City Business Analytics Software IDC MarketScape Important?

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 MaturityScope 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 MarketScope 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

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.

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.

APPENDIX

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.

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 PlanScape: The Essentials of Internet of Things Investment for Smart Cities* (IDC Government Insights #GI253551, January 2015)
- *IDC FutureScape: Worldwide Smart Cities 2015 Predictions* (IDC #253164, December 2014)
- *Business Strategy: IDC MaturityScape 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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