

The IBM Smarter Cities Portfolio

Delivering optimal business outcomes through intelligent response and actionable insights

Ron Baker
IBM Distinguished Engineer
Chief Architect, Smarter Cities



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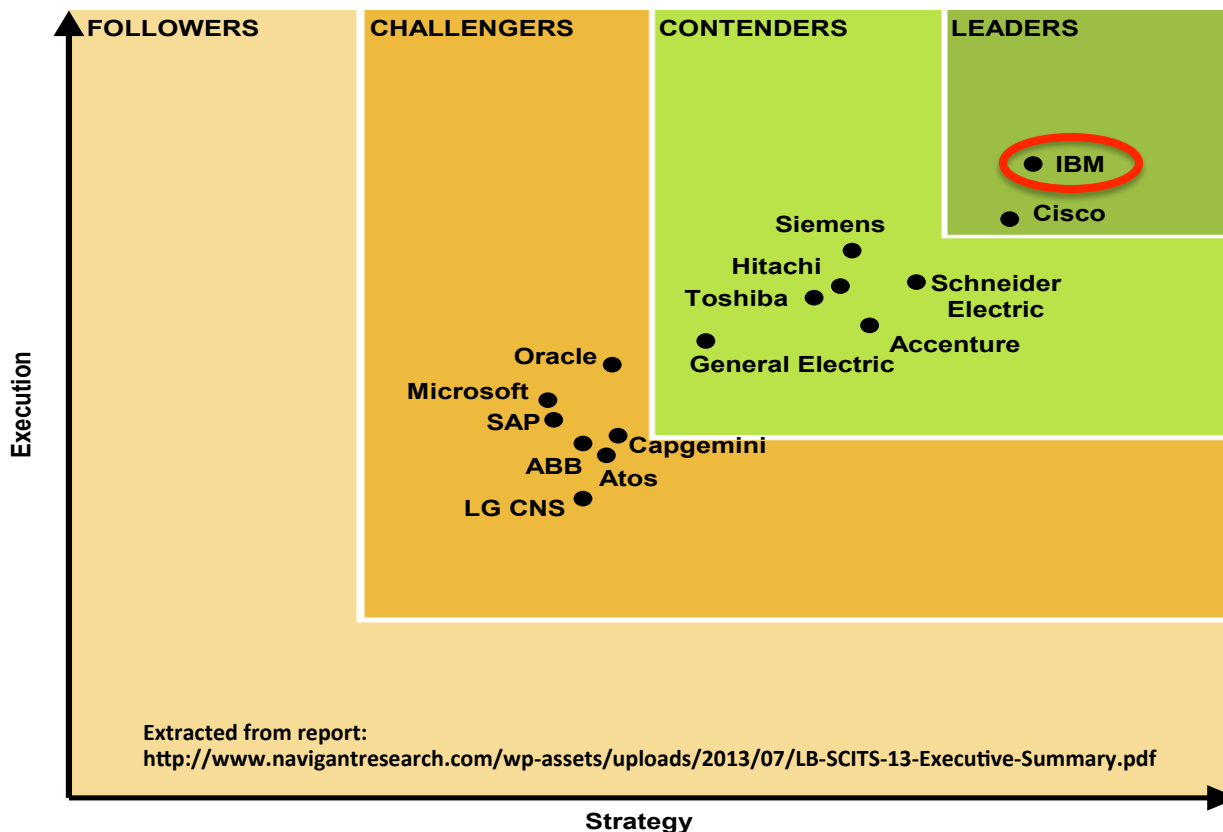
Industry Analysts assessment on Smarter Cities Landscape

Navigant Research Report:

“IBM’s commitment to smart cities has become a key component of its broader smarter planet strategy. Its continued investment in research and development (R&D), products, and city engagements has allowed it to maintain its **leadership position** despite the growing number of heavyweight competitors.”

Forrester Research Report:

“IBM’s breadth and depth of capability in software and services for city planning and management, human and infrastructure services, along with the ability to analyze and integrate the information and provide executive dashboards and citizen interaction is **probably unmatched in the market.**”



Leaders must innovate across services to meet and exceed citizen expectations



Planning and Management

Design and implement a city plan to realize full potential for citizens and businesses; while efficiently running daily operations

Infrastructure

Deliver efficient fundamental city services that make a city desirable for citizens

Human

Provide effective services that support the economic, social and health needs of citizens

Smarter Cities Trends

Trend 1

Growth of Tablets, Smart Phones, and their Applications

There has been a fundamental shift over the last five years, with mobile

In a few years, the number of mobile devices will DWARF the number of PCs



Trend 2

Growth of Open Data and Instrumented Data

The Open Data movement in government across the world, and particularly in the United States¹², has the opportunity to complete change how services are provided and the perception that citizens have. The amount of data is growing rapidly, as are the number of requests against it¹³



This increased availability and openness means that the architecture must address the addition of new data sources easily and quickly individual configuration.

Trend 3

Growth of Geospatial Context (Location Services)

The ability to visualize data on a geospatial map has already grown dramatically in conjunction with the first two trends. As more people have GPS-enabled mobile devices, their location relative to travel directions, traffic, proximity to retail and services, and each other has created new business opportunities.

GIS/Geospatial Public Sector Growth 2004-2011
Software Only
Worldwide Revenue Estimates and Forecast



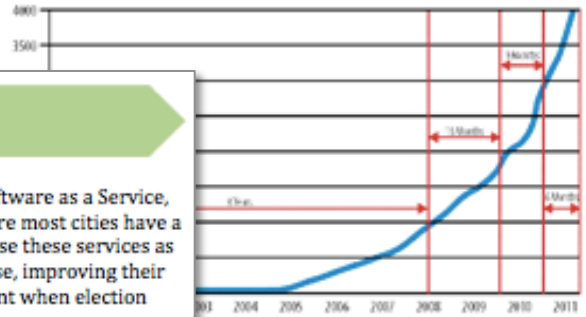
Operations Centers, by their very nature, and geospatially oriented. Cities constantly deal with their infrastructure and different boundary areas (school districts, police districts, fire departments, voting representation, neighborhoods, blocks, land plats, and many more). The ability to visualize the open and instrumented data in this context is critical, and our architecture must address this ability so see it. Its particular valuable in cross-agency scenarios that provide insight that is often missed in standard table or report forms.

Smarter Cities Trends

Trend 4 Growth of Platform API's

Next is the growth in web-based Application Programming Interfaces, or API's, especially by the largest industry *platform* players, such as Google, Apple, Amazon, Twitter, and Facebook. The open data movement is also adding the same type of API's, in which REST-based interfaces are the fastest growing area^{iv}.

Most interesting has been the growth of different business models for these API's. Long gone are simple SDK



Trend 5 Growth of Security Threats

Finally, the customers we engage are stewards of the data in their operations and protect it accordingly. The growth in new and varied security threats and addressed in our architecture.

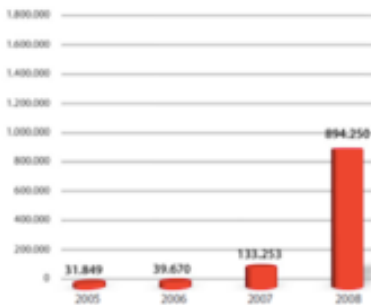


Diagram 1: Number of new malware programs per year since 2005

Trend 6 Growth of Software as a Service

One of the most important trends affecting our design has been the growth of Software as a Service, with our Cloud offerings. This is especially true in the Public Sector market, where most cities have a limited capital budget and IT Staff. Software as a Service enables them to purchase these services as operational cost, and removes the lengthy deployment and customization expense, improving their return on investment. The ability to display results quickly is especially important when election cycles are involved.

We are seeing a definite tipping point in this trend, especially combined with the Open Government trend identified earlier. The following shows different segments applicability to this model and the corresponding market penetration obtained as a result:

● Favorable to on-prem ○ Unfavorable to on-prem

	Prior state			Current state - Requirements				Future state		2012 SaaS penetration
	On prem penetration	Switching costs	Satisfaction	Uptime	Security	Customizability	Deployment time	Incumbent tenacity	Weak challengers	
Manufacturing	●	●	●	●	●	●	●	●	●	<1%
Financial accounting	●	●	●	●	●	●	●	●	●	1%
Core HR	●	●	●	●	●	●	●	●	●	4%
Customer service	●	●	●	●	●	●	●	●	●	19%
Help desk	●	●	●	●	●	●	●	●	○	11%
Social collaboration	○	●	●	●	●	●	○	●	●	?
Marketing automation	●	●	●	●	●	●	●	●	●	24%
Sales force automation	●	●	●	●	●	●	●	●	●	40%
Talent management	○	○	●	●	●	●	●	●	●	50%

to leverage them quickly and easily the

Standards Experience

- ✓ OpenData Initiative is critical to wide-spread improvement in efficiency, economic development, and transparency.
- ✓ Agreement on a small number critical items has been more effective than fully comprehensive standards compliance.

GIS, CSV file format syntax

Lat/Long geospatial coordinates

FBI crime types

GovStat/CityStat metrics

CAP 1.2

TMDD

DATEX II

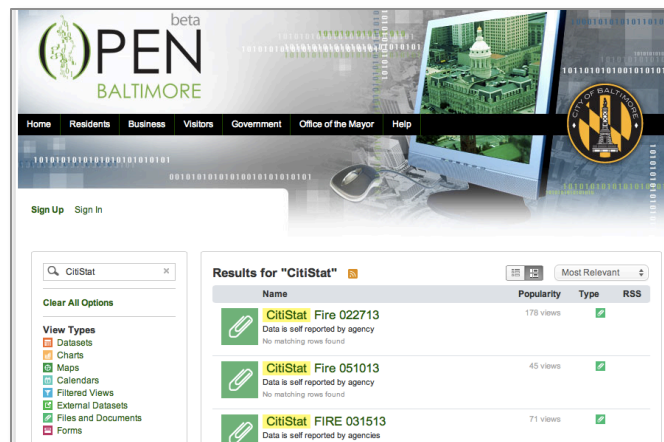


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Note: The 1st & 3rd Results Minneapolis sessions for Public Works for the year will focus on Utilities & Departmental measures; The 2nd & 4th Results Minneapolis sessions for Public Works for the year will focus on Transportation & Internal Services measures.

Results Minneapolis: Public Works May 8, 2012 2