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Nice, France July 20, 2015

Big Data Analytics for Smarter Cities and a Safer Planet

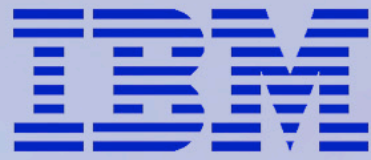
Bob Griffin, General Manager
IBM Safer Planet and Smarter Cities

IARIA Conference
Nice, France

July 20, 2015

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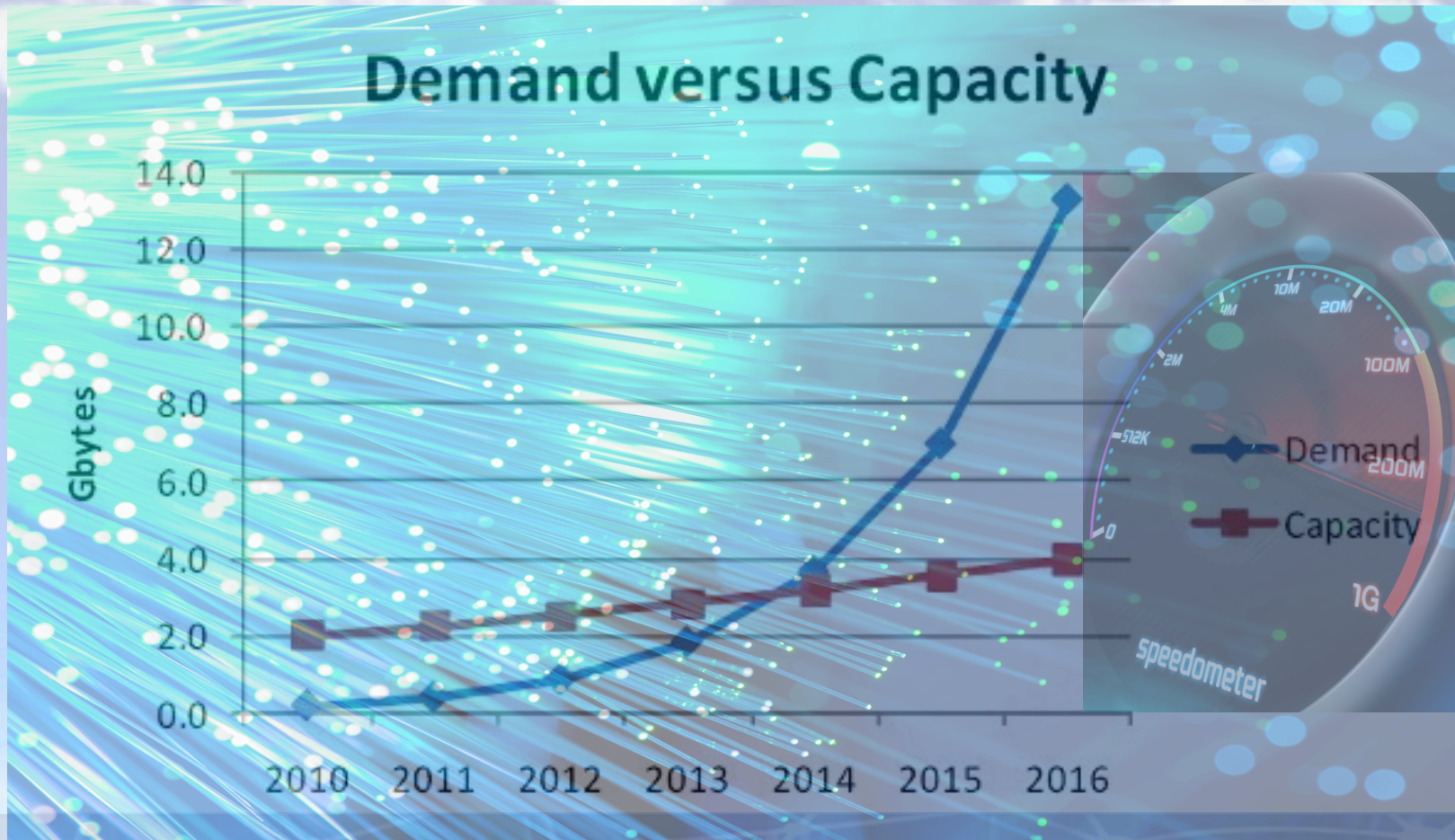


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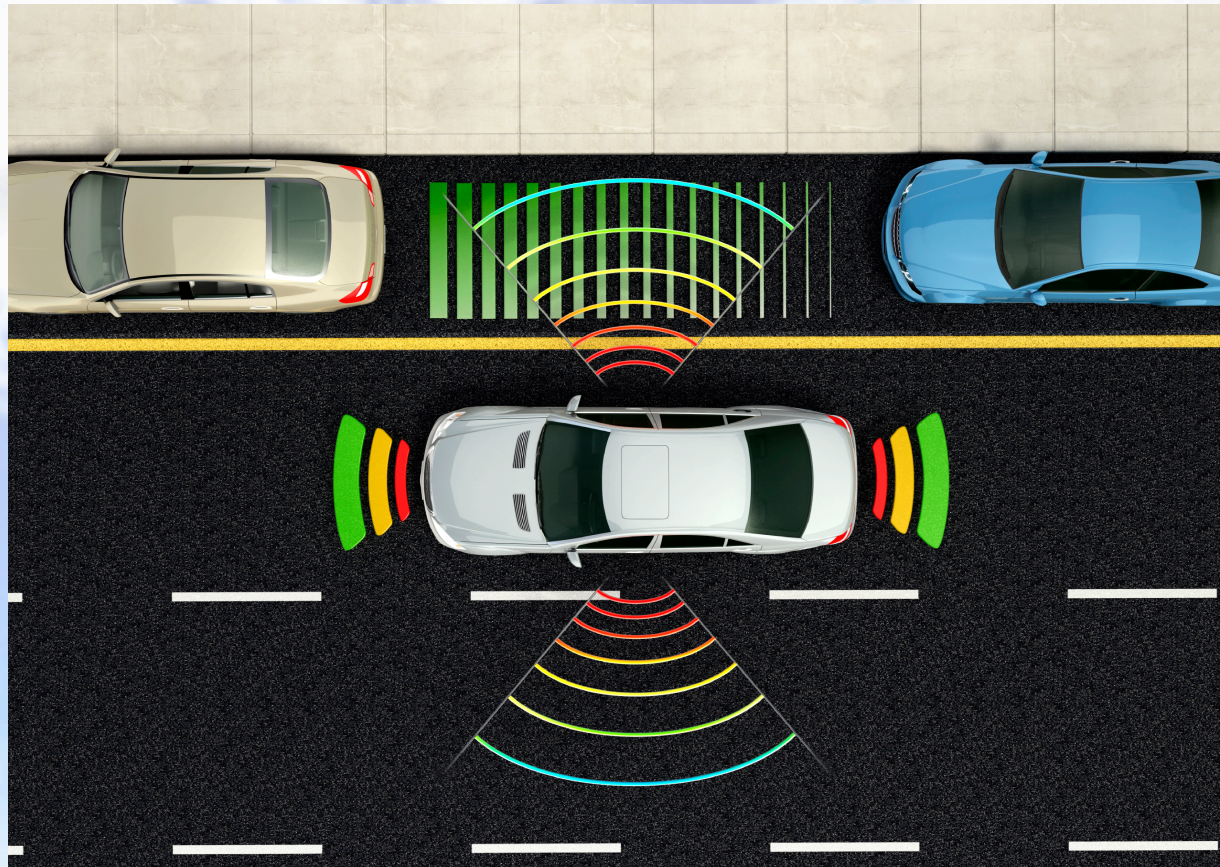


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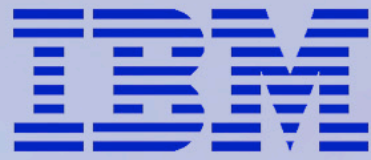


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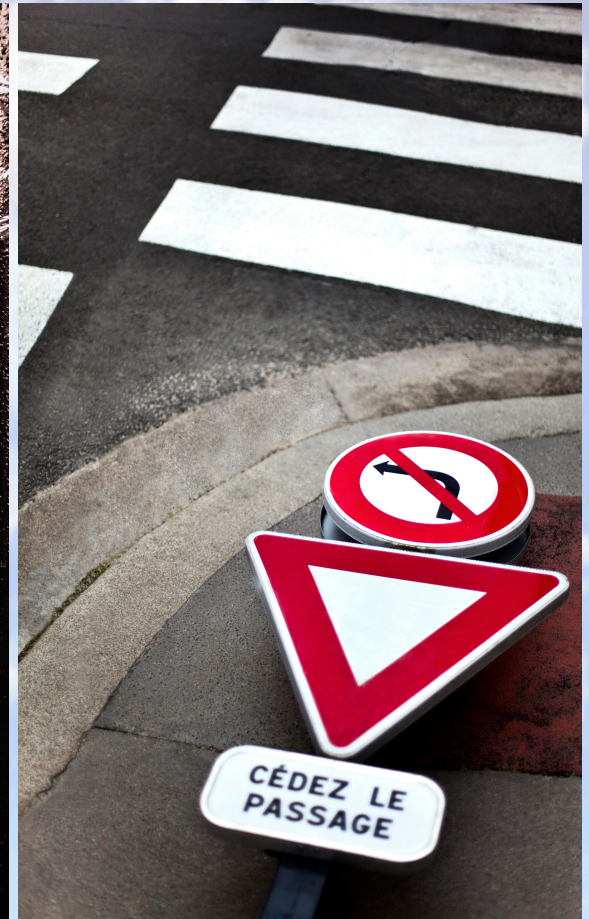


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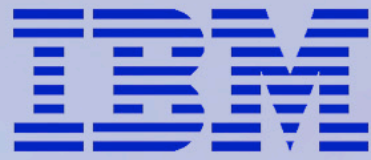


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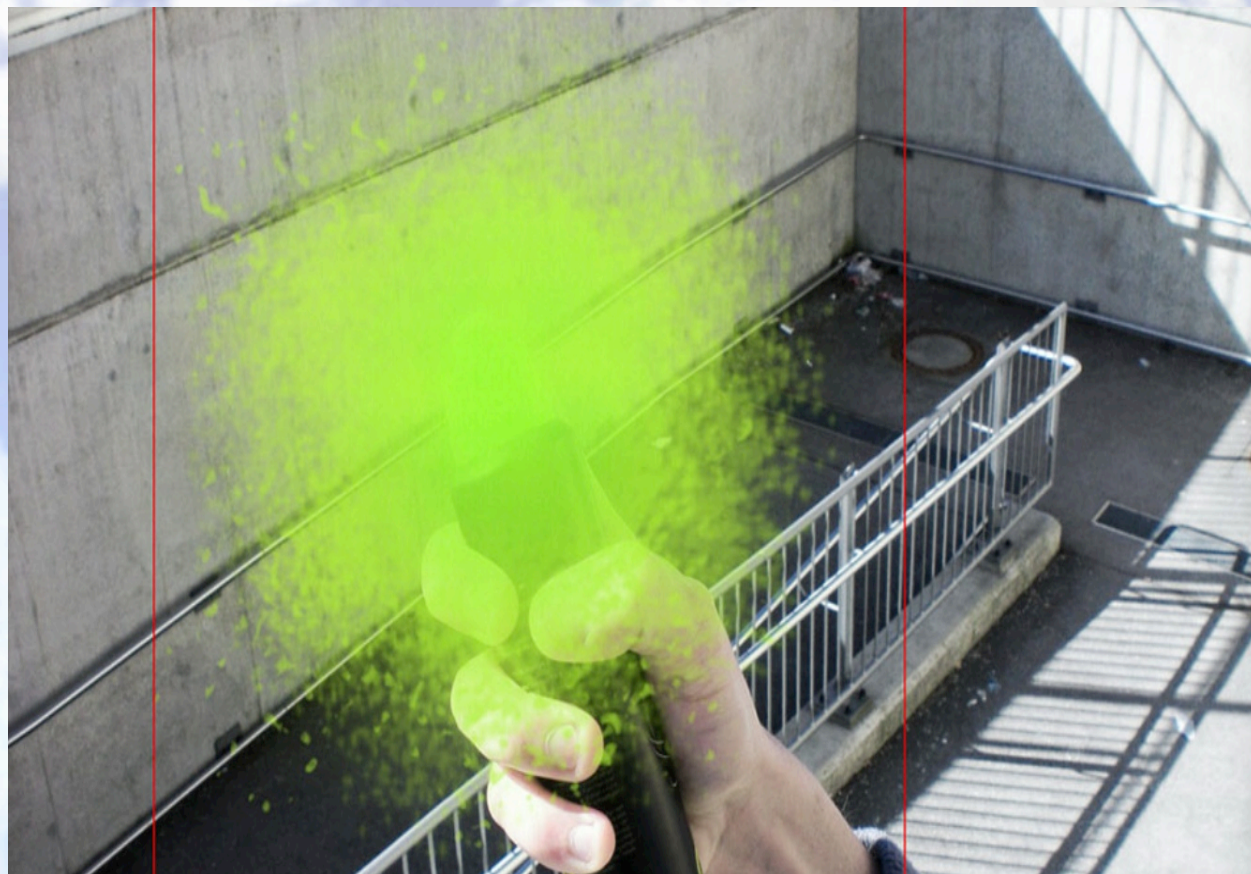
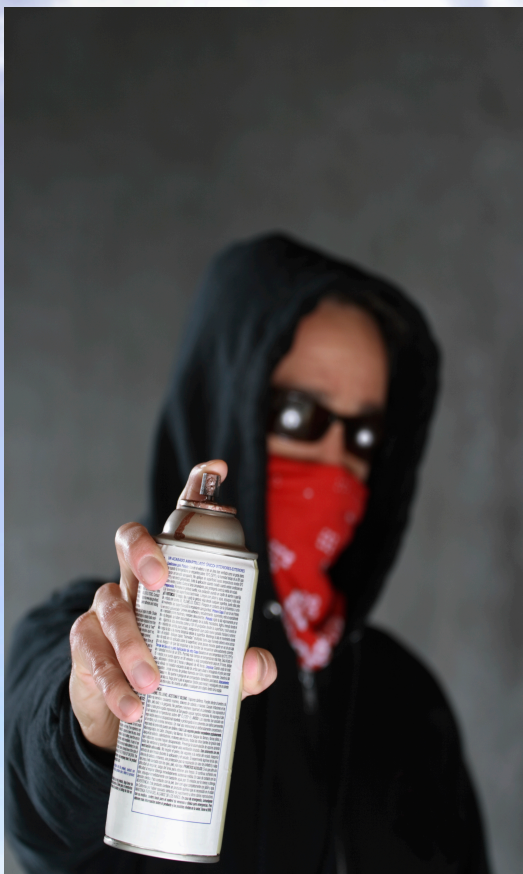


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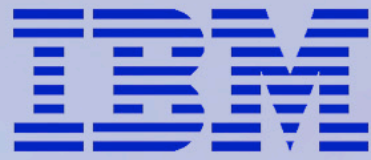


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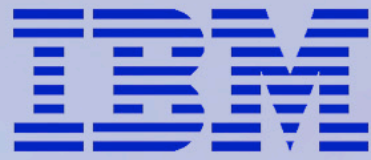


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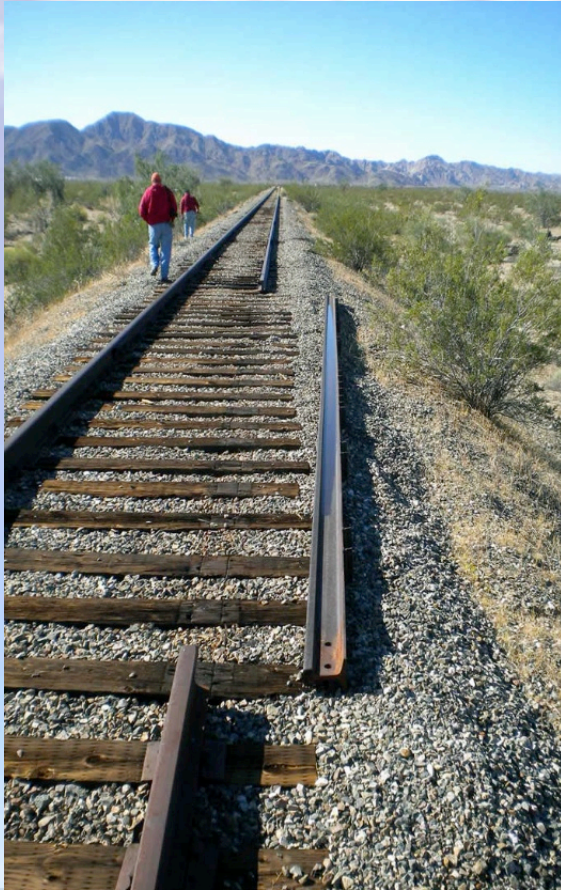


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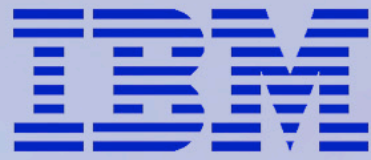


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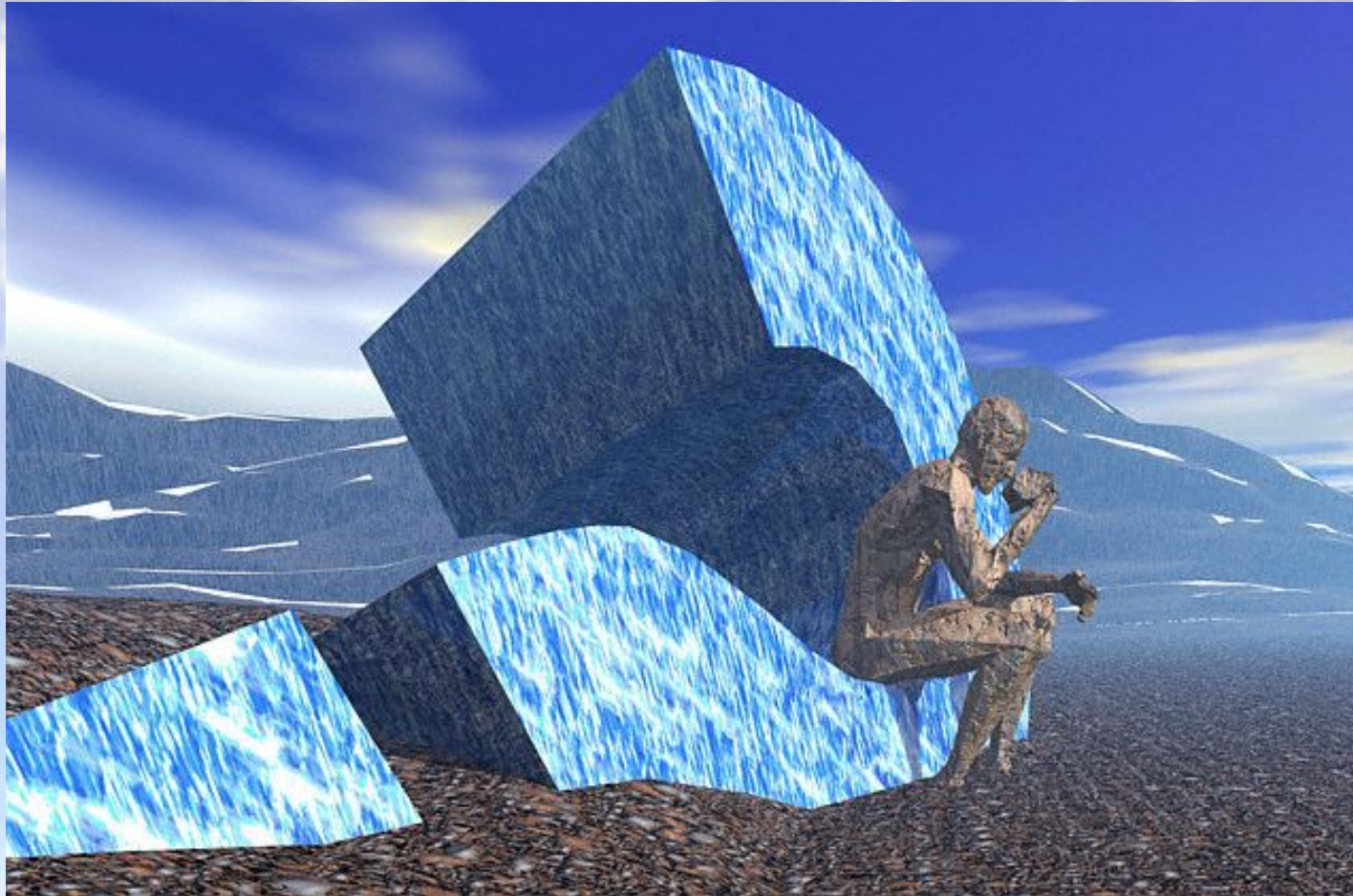


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Volume of Digital Data

44x
Digital data
growth
through 2020

Information is
exploding

60%
of mission leaders
have more data than
they can use
effectively

Change
outpacing ability
to keep up



Variety of Information

80%
of information
– unstructured
content

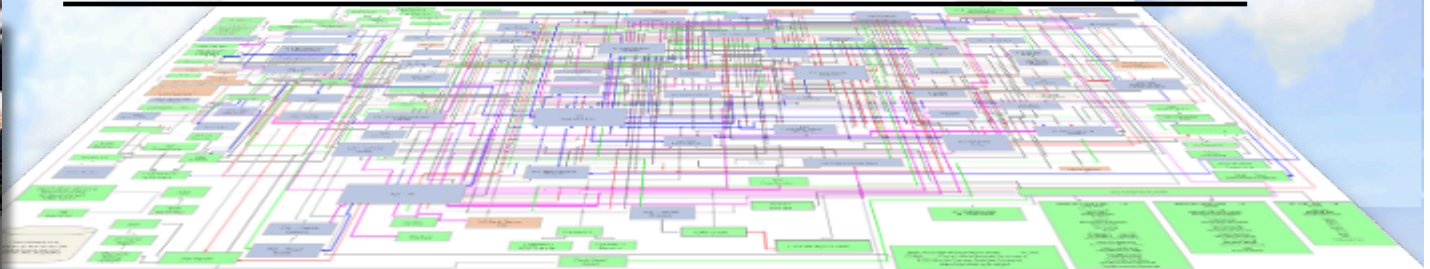
Sources of
insight are
multiplying

12x
Increase in
performance by
Organizations that
apply analytics

Performance gap is
widening



Velocity of Decision Making



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V_1

Volume

- Available data
- Accessible sources

V_2

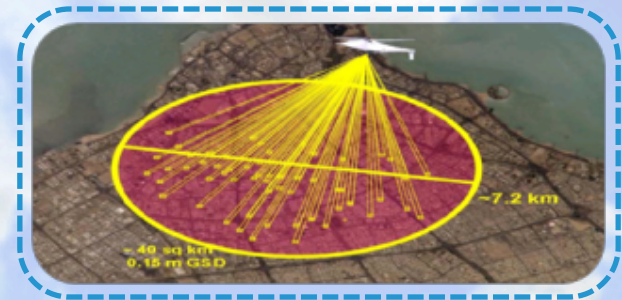
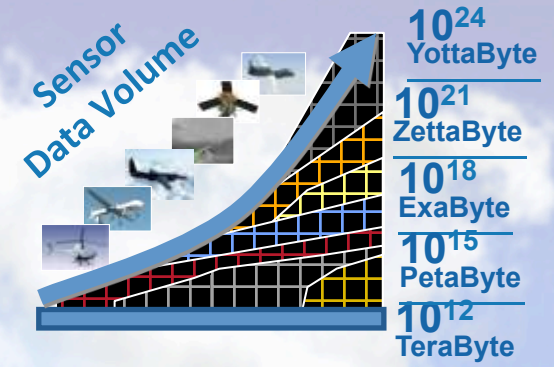
Variety

- Data types
- Analytical Methods

V_3

Velocity

- Data flow
- Decision making



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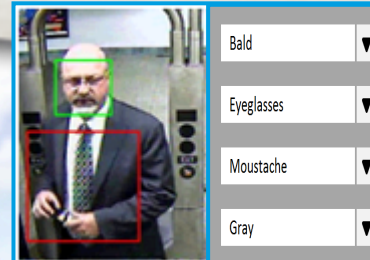




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- Video Analytics Engine analyzes terabytes of incoming video in real time
 - Generate meaningful event alerts across cameras and sensor systems
 - Advanced analytics developed for urban environments and mass transportation
- Search to quickly locate events and attributes in stored video
 - Get rapid, reliable, actionable intelligence through activity-based searching, cross-correlation, and trend analysis.
 - Investigation time reduced from months to minutes
- Delivers on the promise of existing investments in camera and sensor networks

“The future of surveillance is "video analytics," where computers will automatically analyze camera feeds to count people, register temperature changes, and, via statistical algorithms, identify suspicious behavior. No technician required.” [Fortune, April 2013](#)



Rich search
Find bald man with glasses



Advanced analytics
Analyze individuals in crowded scenes

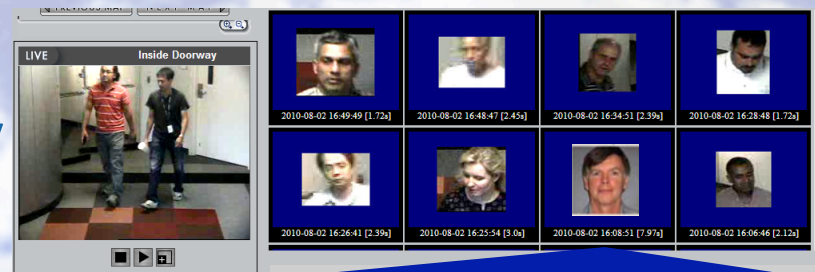


Situational awareness
Vehicle and train combined alert

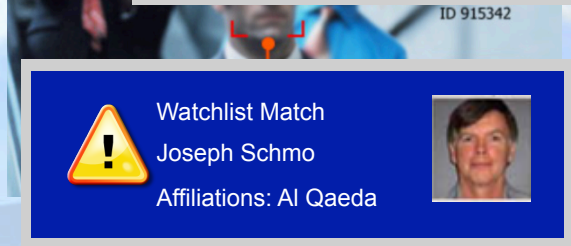
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- Facial Recognition is widely used today
- It will extend video analytical capability
 - Recognize threats, based on triggers using facial surveillance
 - Derive names from known people from video surveillance footage
- Retrieval and display of matches
 - Contextual information for situational awareness
 - Alerts enable immediate response
- Capture and identification through FR will support near real time threat analysis



	Joseph Schmo: 8 Convictions Armed robbery; Assault
	Michael Garcia: 4 convictions Burglary; Shoplifting
	Philip Waters: 3 Convictions Child molestation



Watchlist Match
Joseph Schmo
Affiliations: Al Qaeda



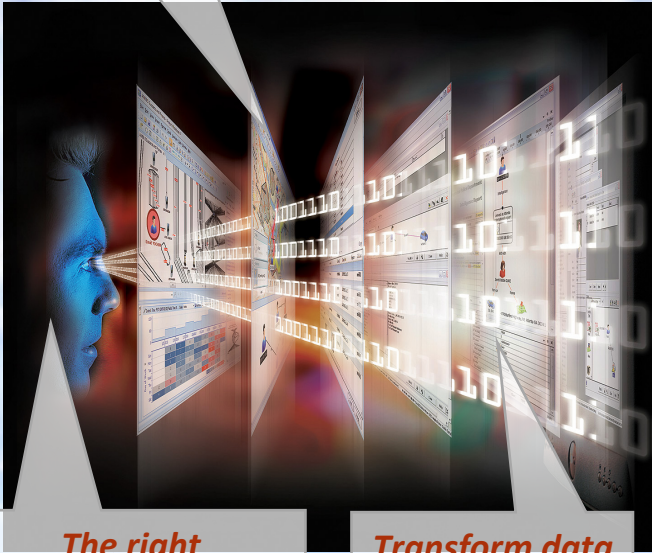


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- Information paralysis - Overload of information from disparate data sources makes it difficult to ingest, process and analyze all available information
- Ability to understand the rapidly changing nature of increasingly sophisticated criminal networks
- Exploiting all of your data – structured and unstructured
- Visual analysis capabilities to identify relationships to efficiently unlock insight and support decision making and support effective communication of complex situations/information
- Leveraging historic data for insight and to understand behaviors and actions that are good predictors of new risk/threat
- Case work overload causing some cases to be left behind

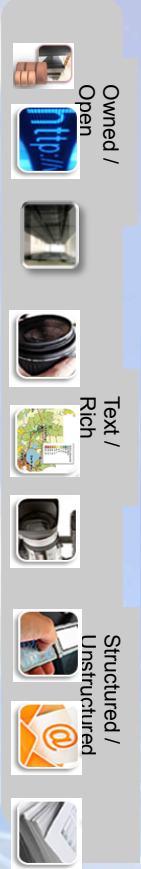
Intelligence generation through iterative analysis and process

Integrate ever-evolving data and content from many different sources



The right information, to the right people, at the right time

Transform data into useful, in-context information



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- Data will be the basis of competitive advantage – it is the next natural resource
 - The explosion of data is allowing criminals to hide in the data
 - Inability to find that needle in the needlestack
- Access to data does not guarantee success



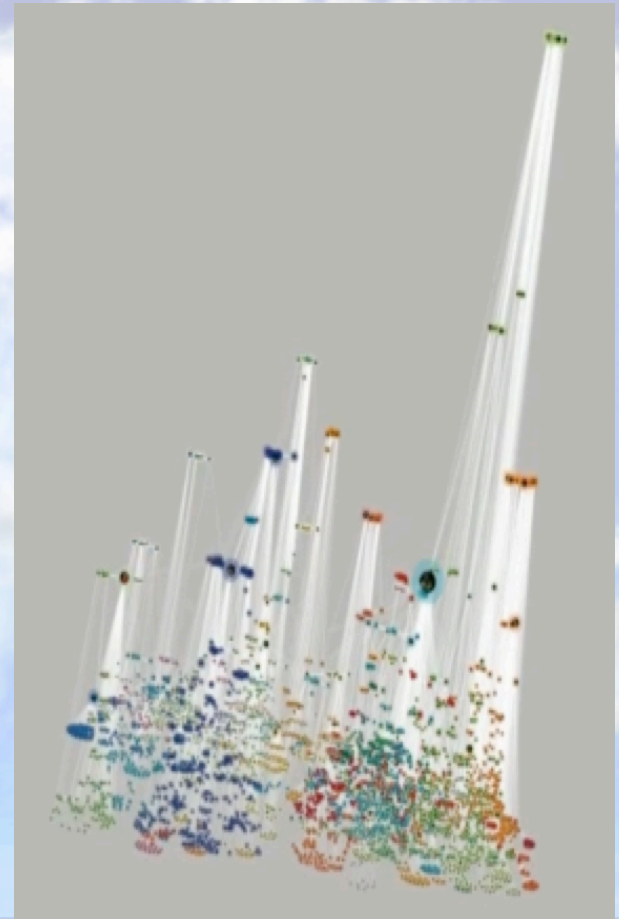
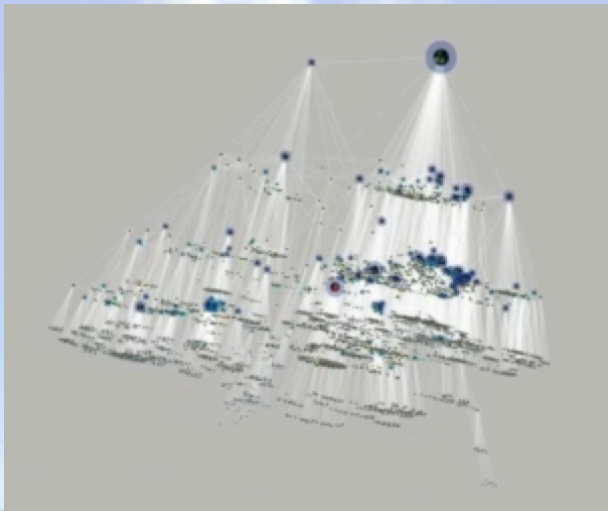
The promise of technology is that it can move *“at or faster than the speed of threat.”* The challenge of technology is that it can make it very difficult for analysts to assimilate what the technology is trying to say.

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- New visualization techniques allow easier assimilation of the information
- Provide density and amplitude
- Delivering insights not available in traditional single dimensional analysis



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Summary

- Data is the new natural resource
- In order for Cities to become Smarter and the Planet to become Safer, this new natural resource must be mined
- The Volume, Variety and Velocity of new data requires use of new analytical tools and techniques
- Today, we saw some tools that allow ingestion, analysis and assimilation of this new natural resource
- Our expectation is that the Vs of data will only accelerate over time and that we must keep up with the tools and techniques if we are to make use of the data to create and maintain Smarter Cities and a Safer Planet

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