IBM *at* 100

From the Selectric to Sabre to superconductors,
help us celebrate 100 years of progress

The information driven opportunity

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The world is getting more instrumented, connected and intelligent.

Global digital content will increase

30 times next 10 years

to 35 zettabytes – 1 trillion gigabytes

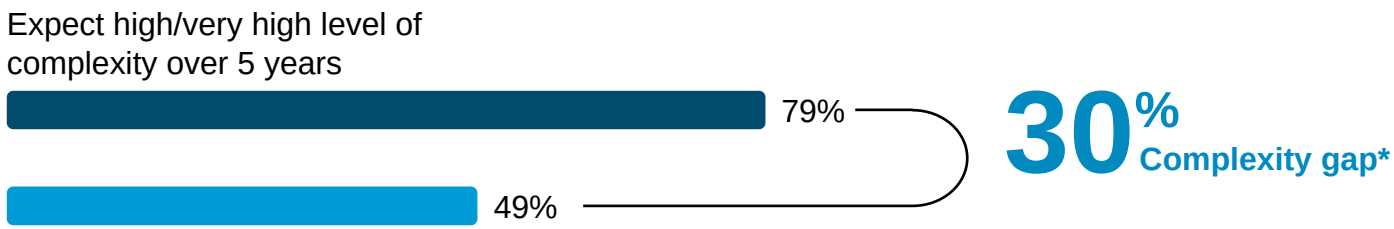
1.000.000.000.000.000.000.000 bytes

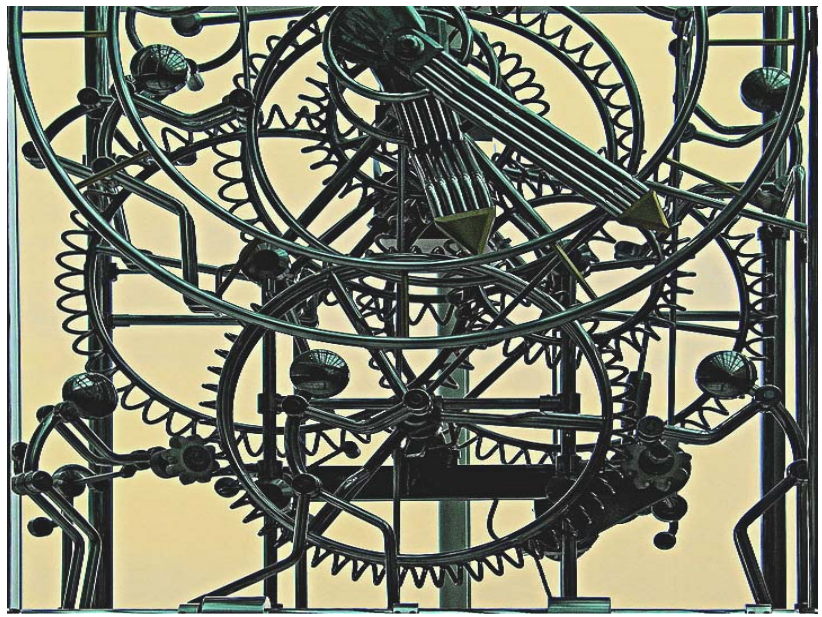
All this falls in the hands of CIOs!

Source: 2011 CIO Study, Questions D.C: "To what extent has your organization integrated business and technology to innovate?"; D.E: "What score would the entire senior management team give technology for its contribution to the business?" (n=3,018)

IBM CEOs study: CEOs expect increasing complexity

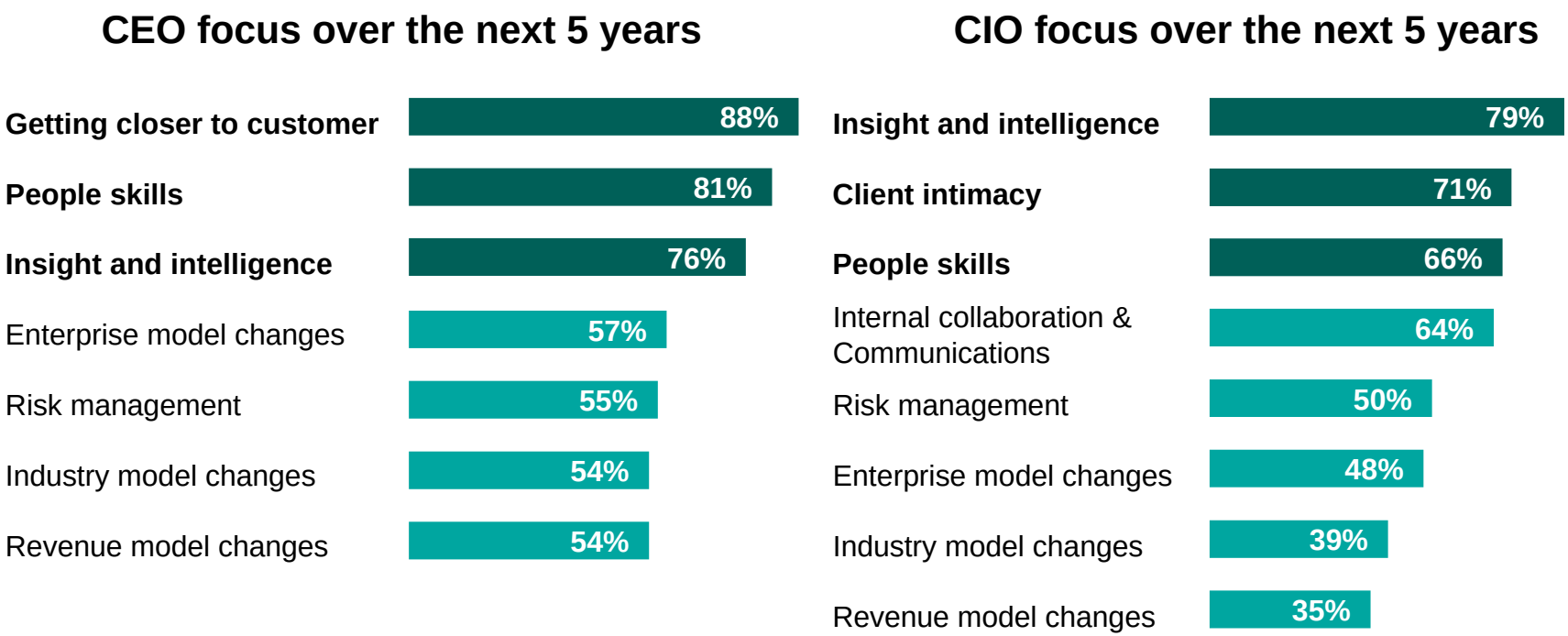
Expected level of complexity and preparedness to handle





Source: Q10 How much complexity will your organization have to master over the next 5 years? n=1,512; respondents who selected “More/significantly more complexity”; Q12 How prepared do you feel for the expected complexity ahead? n=1,508; respondents who selected “Fully prepared”

CEOs and CIOs are both highly focused on insights, clients and people skills

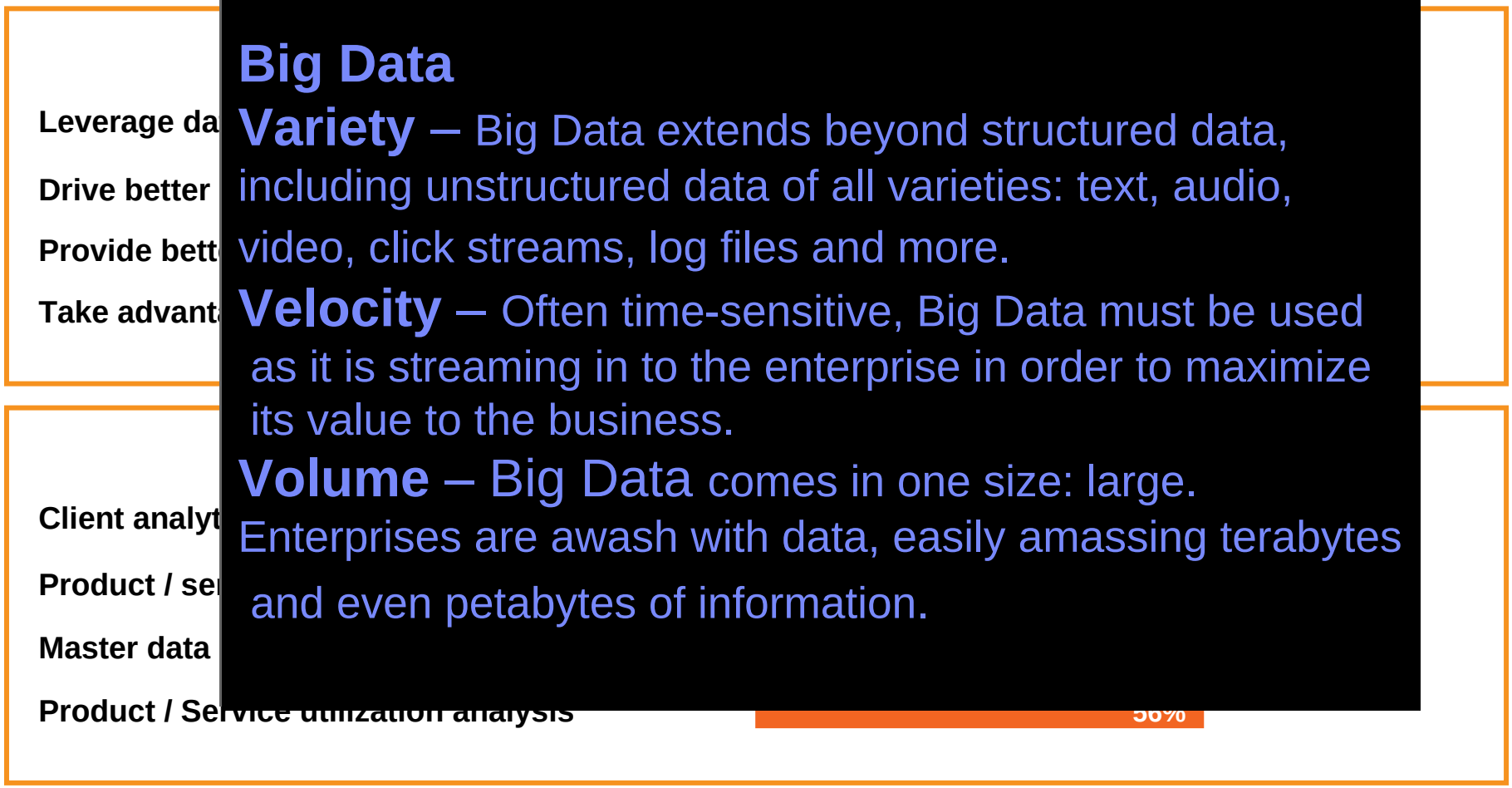


"Business Intelligence will provide information to the company that no one in the industry has ever seen, and will open up opportunities that were not previously considered."

Utilities CIO, USA

Source: 2010 CEO Study Q13: "Which of the following dimensions will you focus on more to realize your strategy in the new economic environment over the next 5 years?" (n=1,523); 2011 CIO Study, Q13: "Where will you focus IT to help your organization's strategy over the next 3 to 5 years?" (n=3,018)

A wide array of innovative tools and methods are actively deployed to turn data into real intelligence



Big Data

Variety – Big Data extends beyond structured data, including unstructured data of all varieties: text, audio, video, click streams, log files and more.

Velocity – Often time-sensitive, Big Data must be used as it is streaming in to the enterprise in order to maximize its value to the business.

Volume – Big Data comes in one size: large. Enterprises are awash with data, easily amassing terabytes and even petabytes of information.

Source: 2011 CIO Study, Q10: "How will you help drive the following initiatives?, Q13: "Where will you focus IT to help your organization's strategy over the next 3 to 5 years?", Q8: "How will information technology impact your industry and organization over the next 3 to 5 years?" (n=688)

The components of “smarter”

Instrumented

Measure, monitor and see exact condition

Connected

Intelligent

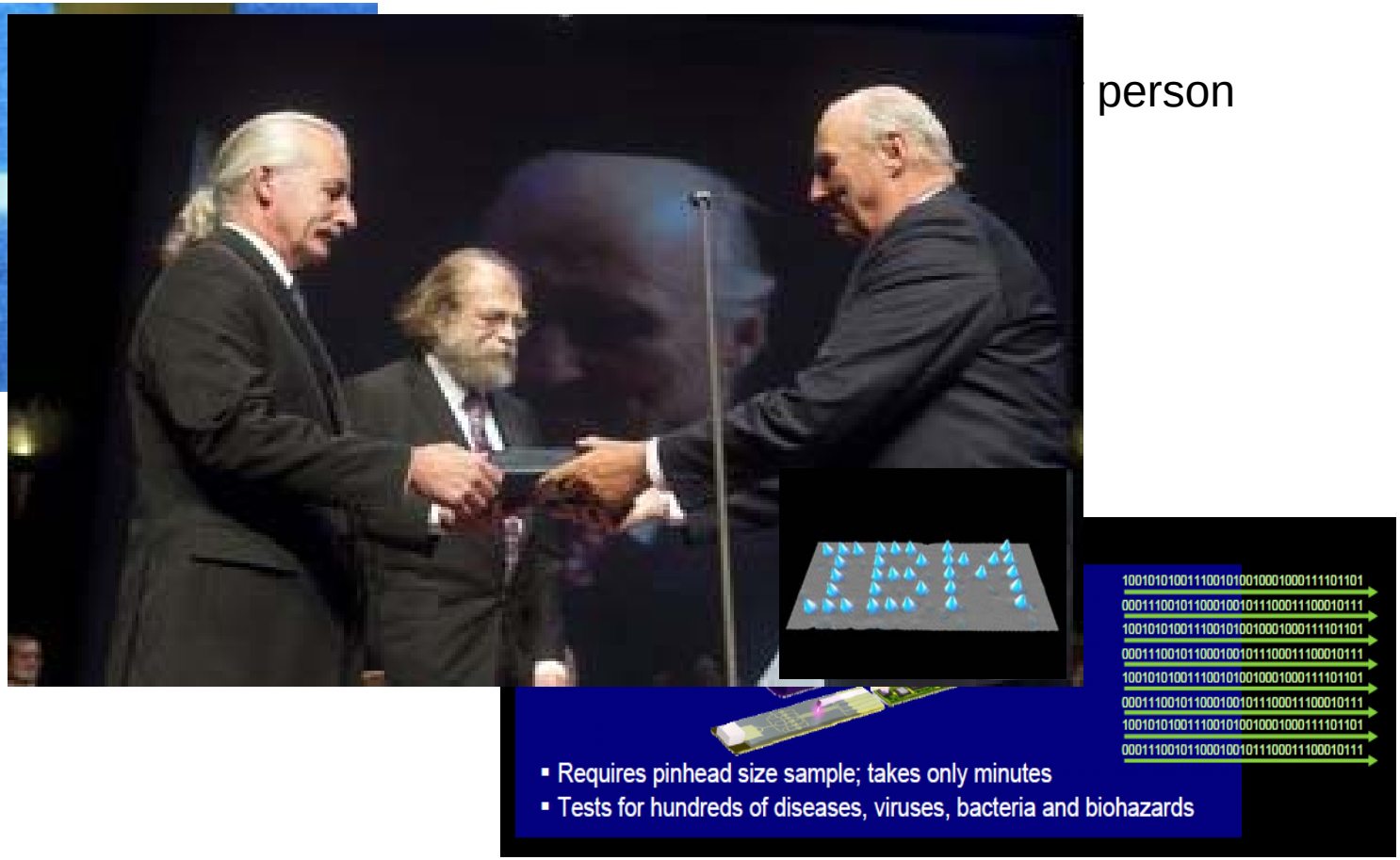
Respond to changes, Predict and optimize

Sources: IBM Institute for Business Value Analysis; IBM Smarter Planet – Healthcare, Electronics, Life Sciences

Instrumented

Measure, monitore and see exact conditions

person



A semantic data model is an abstraction which defines how the stored symbols relate to the real world.

Defense needs more and better information

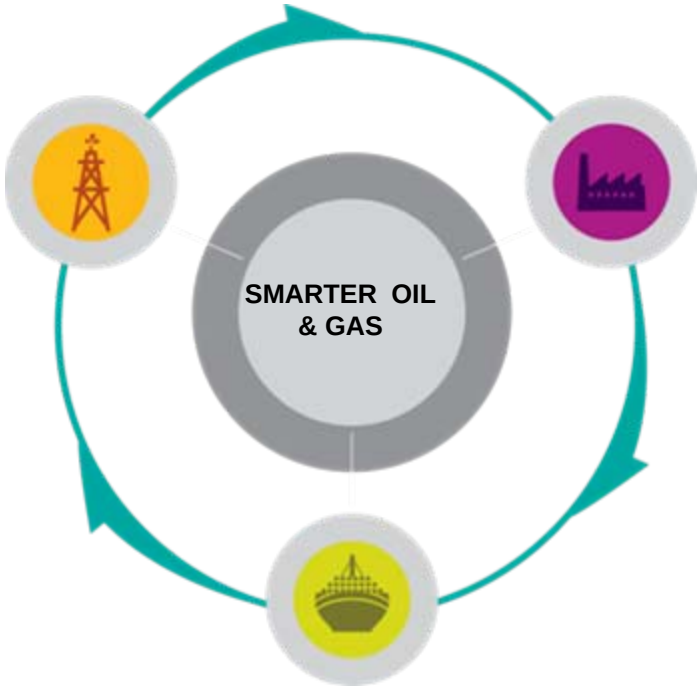
GAIN PEACEKEEPING OPERATIONAL EFFECTIVENESS BASED ON INTEROPERABILITY

Oil & Gas needs more and better information

Improve exploration and production

Find oil&gas faster and lift it more efficiently

A 1.5% increase in recovery rate will cover 50% of global yearly consumption



Improve asset management

10% improvement and reduced downtime by utilizing leading tools and methods

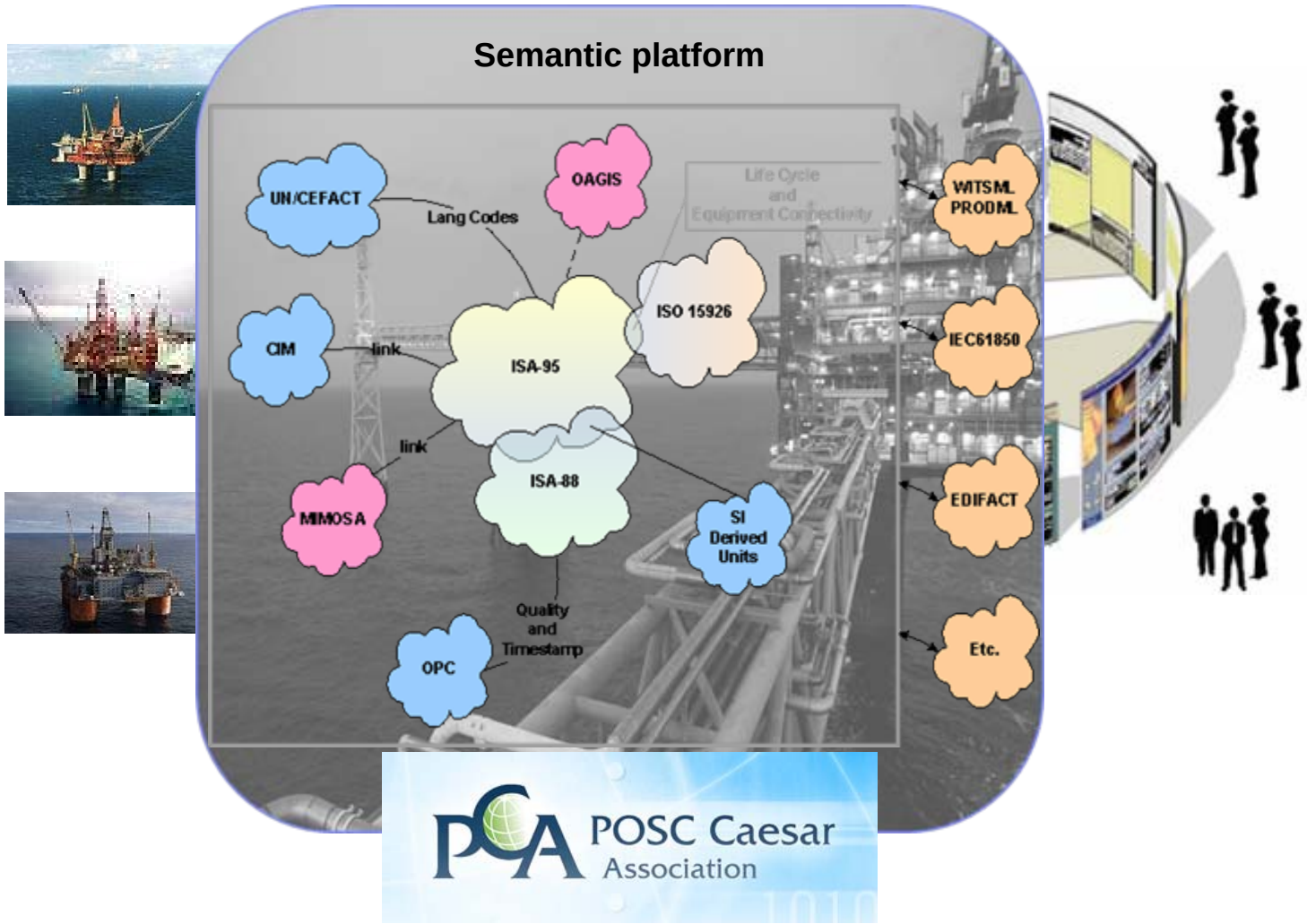
Optimize Operations

More efficient, reduced risk, and reduces cost in the supply chain

5% - 30% of logistics cost by utilizing best practice tools and applications

1 - BP Statistical Review of World Energy June 2008 (www.bp.com/statisticalreview); IBM Analysis
2 - Aberdeen Group: Enterprise Asset Mgmt: Maximizing ROA and Emerging Trends, June 2008
3.- IBM Team Analysis

Connected oil&gas



Statoil Global Operations Data Integration

Reference Semantic Model is reqruired for a Smarter Physical Infrastructure

Problem

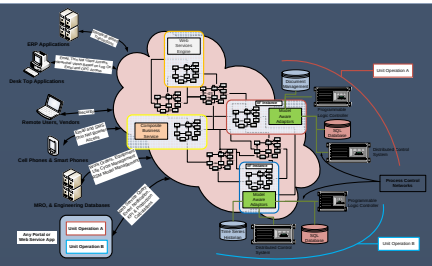
- Lost volume / production
- Inefficient operations & maintenance
- Lack of standard ways to find & update data
- Incident detection & reporting

Solution

- Use industry standards
- RSM for consistent data
- Model aware adapters
- Performance monitoring calculations

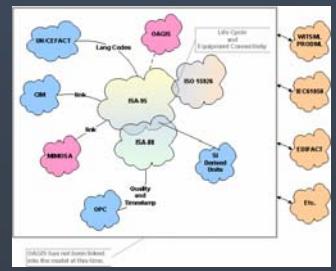
Business Value

- Visualize in business context
- Improved operations
- Lower maintenance costs
- Reduced production loss



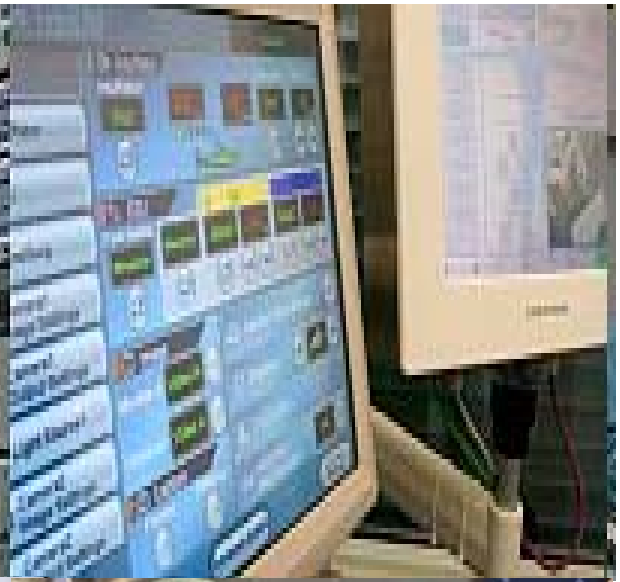
Aggregation

Visualization



Standards

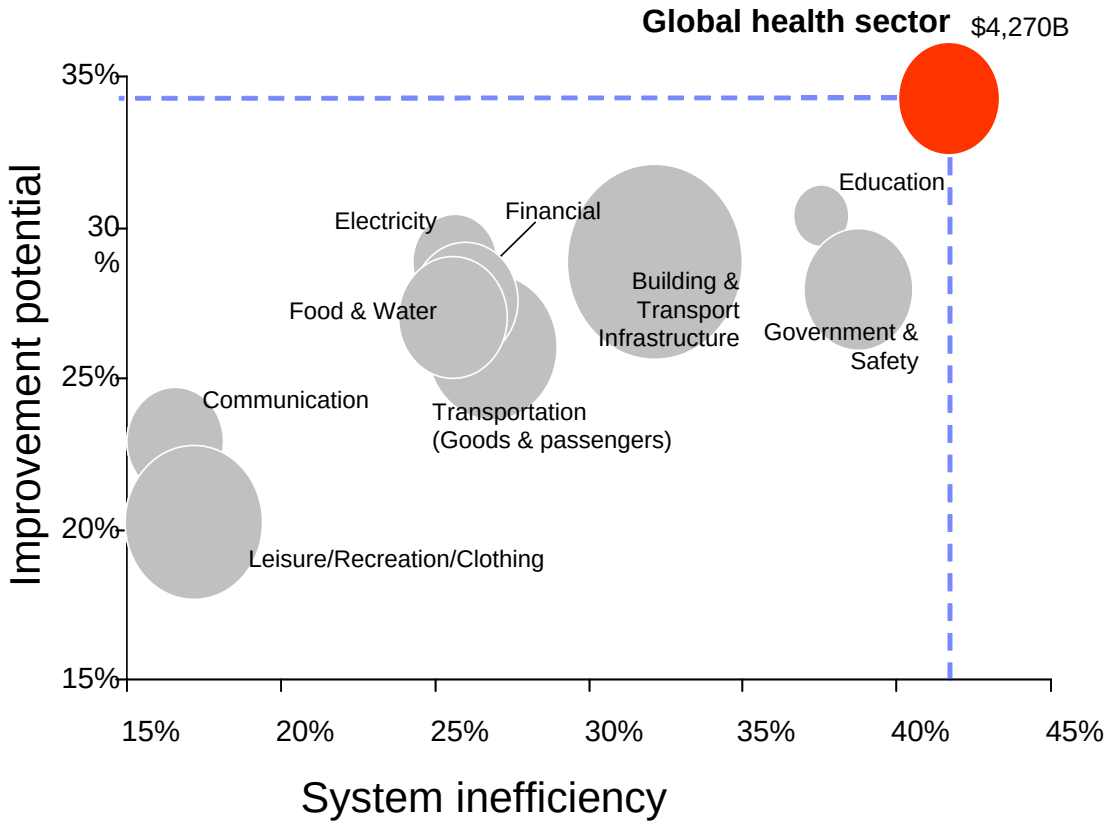
Great things are done in healthcare!



Healthcare: the world's 4 trillion dollar challenge

- **2.5 trillion dollar lost due to ineffeciency**
- **Total healthcare budget in UK, France, Japan, India and China**
- Degree of inefficiency can be **reduced by 35%**
- Main cause: **inefficient collection, sharing and use of information**

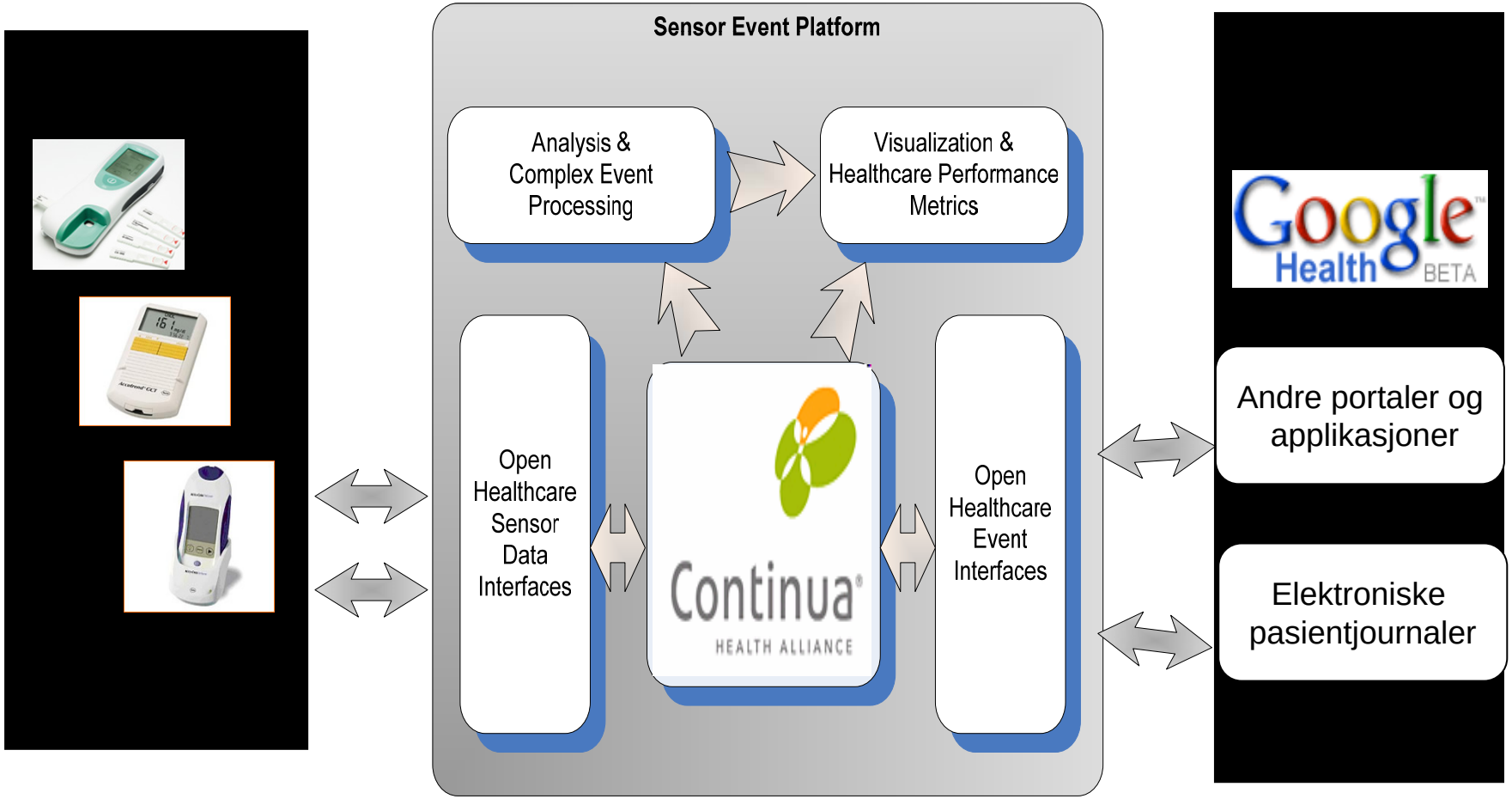
Efficiency analysis: a systems of systems



Sources: IBM Institute for Business Value "The world's 4 trillion dollar challenge", January 2010
1) IBM Institute for Business Value analysis based on 2009 survey of 518 economists.

Connected health

Reference Semantic Model is reqruired for a Smarter Physical Infrastructure



Open standards

Healthcare intelligence

Tromsø Telemedisin Laboratorium (TTL)

NST | Norwegian Centre for Telemedicine
UNIVERSITY HOSPITAL OF NORTH NORWAY
WHO Collaborating Centre for Telemedicine

TROMSØ TELEMEDICINE LABORATORY

Centre for Research-based Innovation
Established by the Research Council of Norway

Public/private consortium for Research based innovation in eHealth

Vision:

To become a world leading centre for research and innovation in the field of advanced telemedicine and eHealth systems for chronic, age, and lifestyle related diseases.

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Detect spread of infections earlier

Consultation with physician

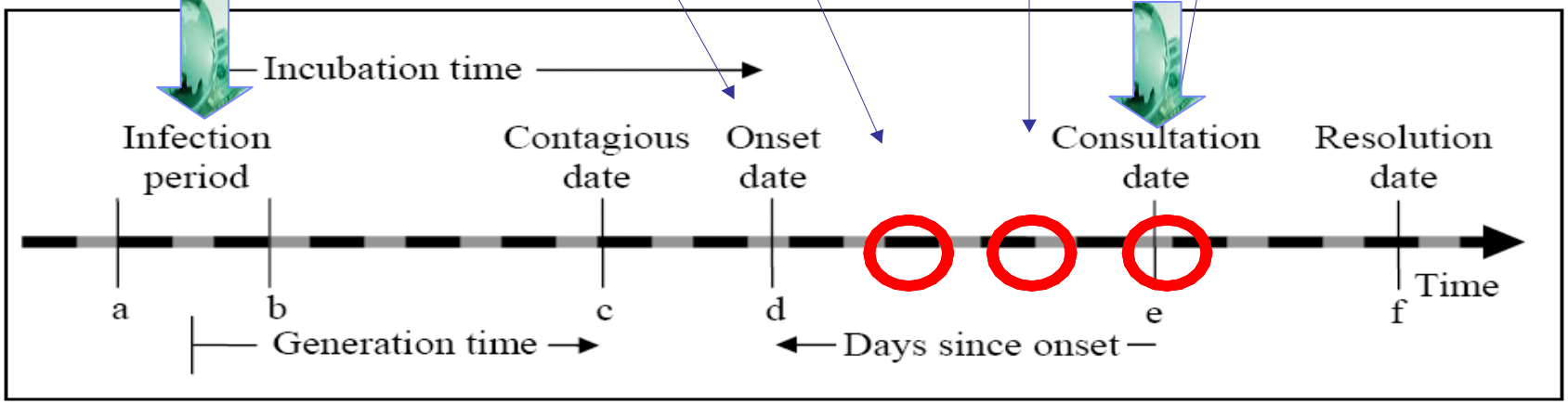
Absenteeism

Medication from pharmacy

s

New first detection point

Earliest detection point now



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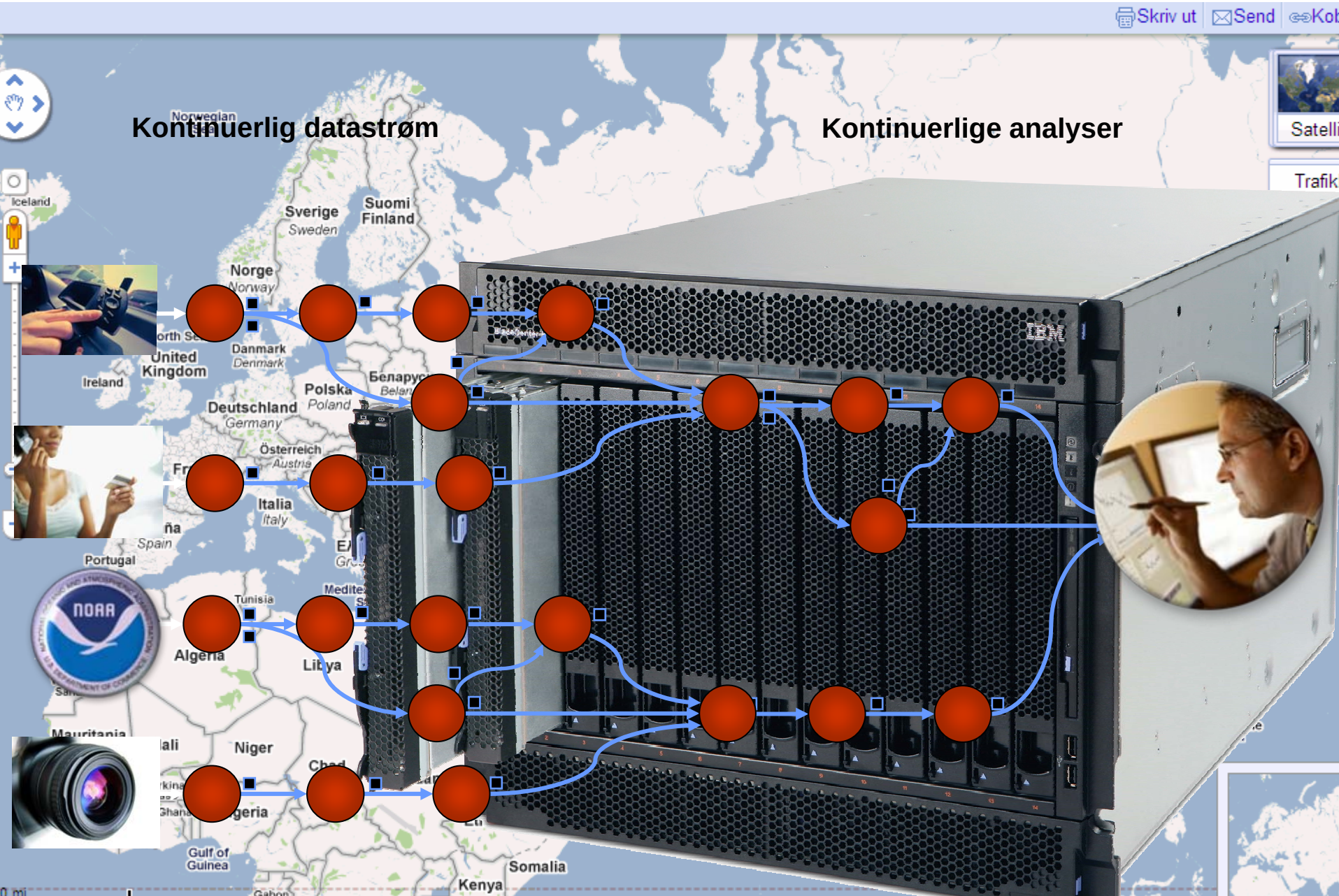
Stream Computing



ExtremeBlue project: Build a Prototype

Collect digitial patient information

Analyze data in real time to detect outbreak

Collect | Publish | Analyse | Decide | Act *(Inform /Alert)*

Publish data and make it available

Health Surveillance

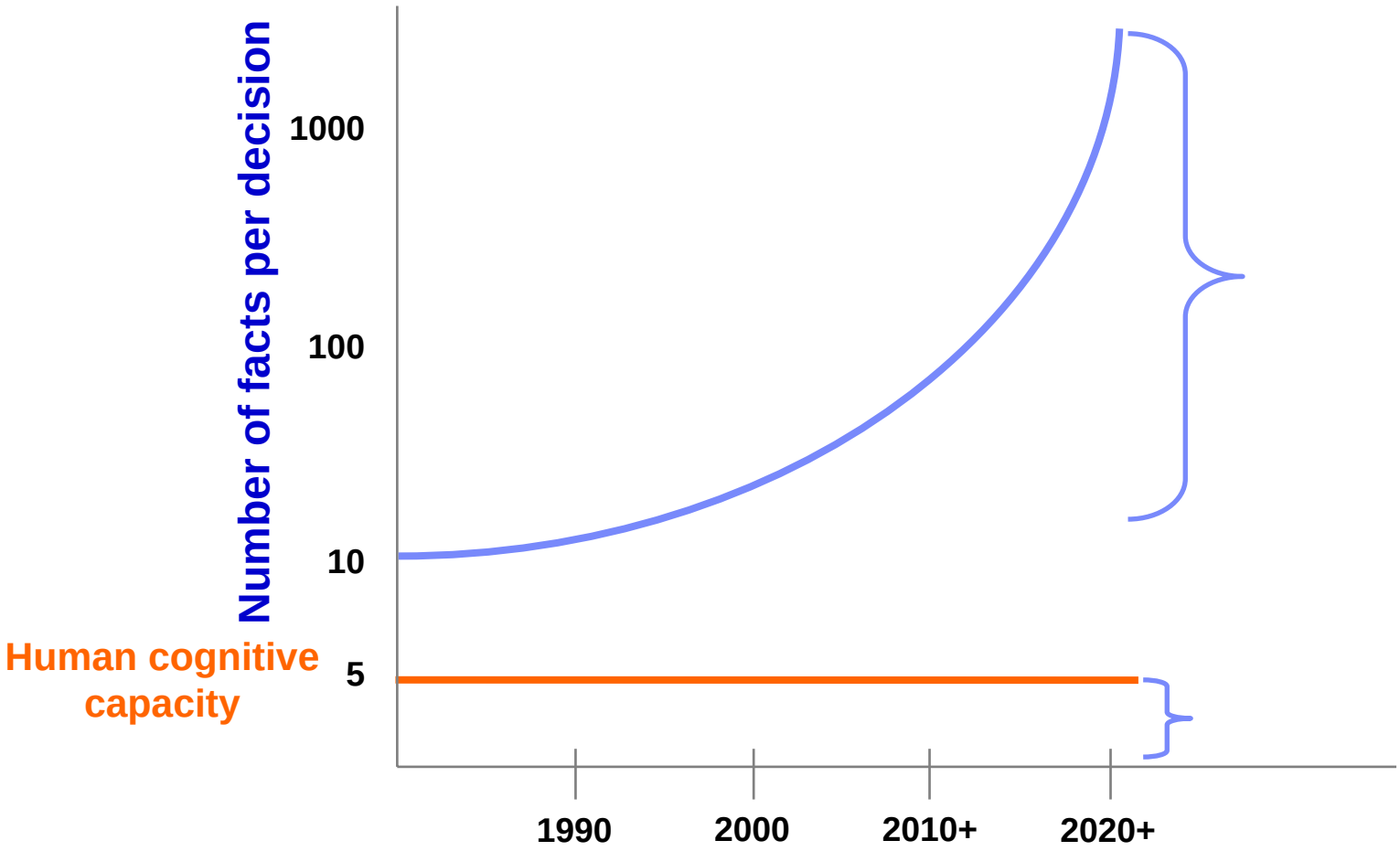
cSiZer

Analytics & Predictive

Reporting

Take decisions

Intelligent



Source: William Stead MD, IBM Global Business Services and IBM Institute for Business Value

Up until now computer intelligence has always been challenged by the nuances of human language

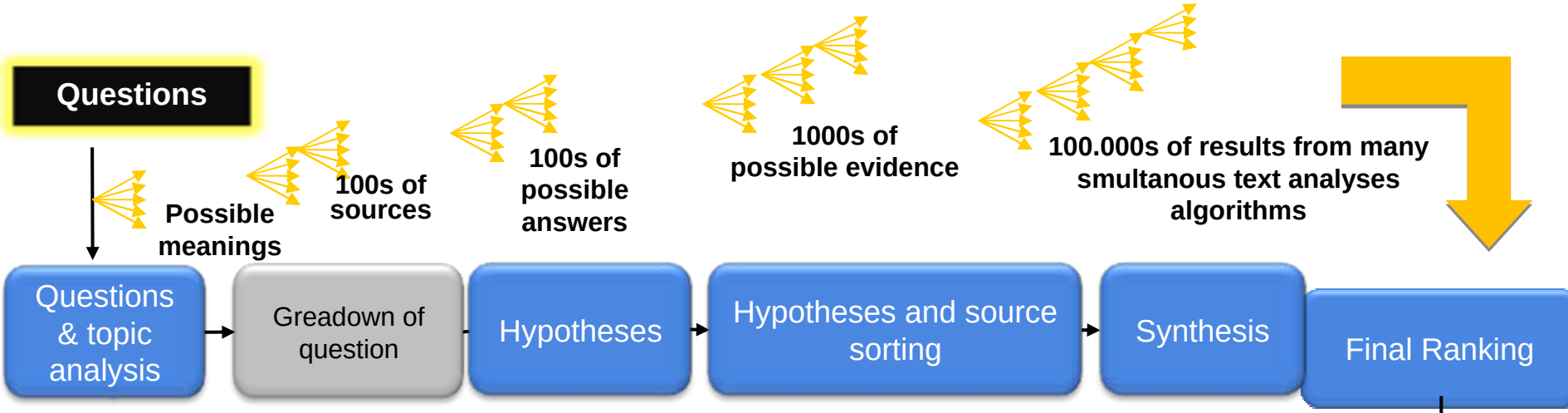
What if …

…a computer system could understand natural human language which is

- implicit
- highly contextual
- ambiguous
- often imprecise

IBM

IBM WATSON



- ***Understanding natural language.***
- ***Rivals a human's ability to answer questions***
- ***Not connected to the Internet***
  - ***own database of 200 million pages of content.***
- ***Gives a precise answer and confidence instead of a ranked list of web pages.***
- ***analyzing subtle meaning, irony, riddles, and other complexities***

INSTRUMENTED CONNECTED INTELLIGENT ***SMART***

Open and global integration platform connects everything

Industry Integrated Solution Domains

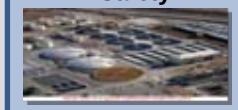
Cross-Industry Solution Domains

IBMs Smarter Solutions

Smarter Cities


Intelligent Public Safety


Intelligent Transportation


Intelligent Water


City Operations Center

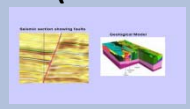

Intelligent Buildings[2]

E&U


Intelligent Generation

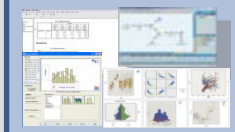

Intelligent Grid

Natural Resources (C&P + Mining + Metals)

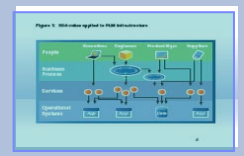

Intelligent Exploration


Intelligent Plant Operations

Smarter Industries


Advanced Condition Monitoring


Intelligent Supply Chains


Manufacturing Operations


Intelligent Field Service Optimization[2]


Real-Time Asset Locator

Integrated Information Core


Intelligent Operations Center


Geo-Spatial Information & Analytics[2]

Physical Infrastructure


Grid


Traffic


O&G facilities


Plant


Trains


Machinery


Cities


Buildings

THANK YOU!