MEET IBM 2010
see it differently

IBM

Kees Donker (Executive for Innovation and Technology ,IBM)
Systems and Software for a Smarter Planet
15 september 2010

Lets build a Smarter Planet

Our world is becoming
INSTRUMENTED

+

Our world is becoming
INTERCONNECTED =

+

Virtually all things, processes and ways of working are becoming
INTELLIGENT

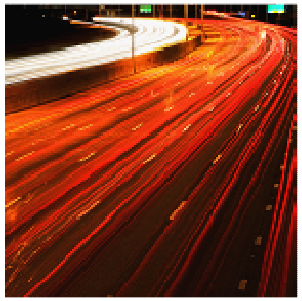

FORTUNE

SMARTER PLANET
IBM's grand plan to save the planet

Here is CEO Sam Palmisano's formula for changing the world: Find problems, throw in billions of dollars in R&D, add consultants and an earnest ad campaign - and watch the profits roll in.

CEO Palmisano has shifted IBM from selling tech services to hawking high-tech problem solving. **Guruna Johansson** helps Stockholm reduce car congestion. IBM gear tracks license plates so that the city can charge drivers who use roads at peak hours. Miami's **Walter Valash** and IBM's **Epsen Rouche** are trying to use RFID chips to track meat and produce shipments to ensure safe food. **Howard-Yana Shapiro** of Mars Inc. is seeking IBM's help in analyzing the cacao genome to ensure the future of the plant, which is being wiped out.

Smarter Planet IBM's strategy to think and act in new ways, economically, socially and technically



Smarter Transportation

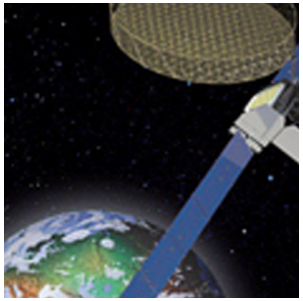
Smarter Oil & Gas

Smarter Food

Smarter Healthcare

Smarter Utilities

Smarter Retail



Smarter Telco

Smarter Supply Chains

Smarter Public Safety

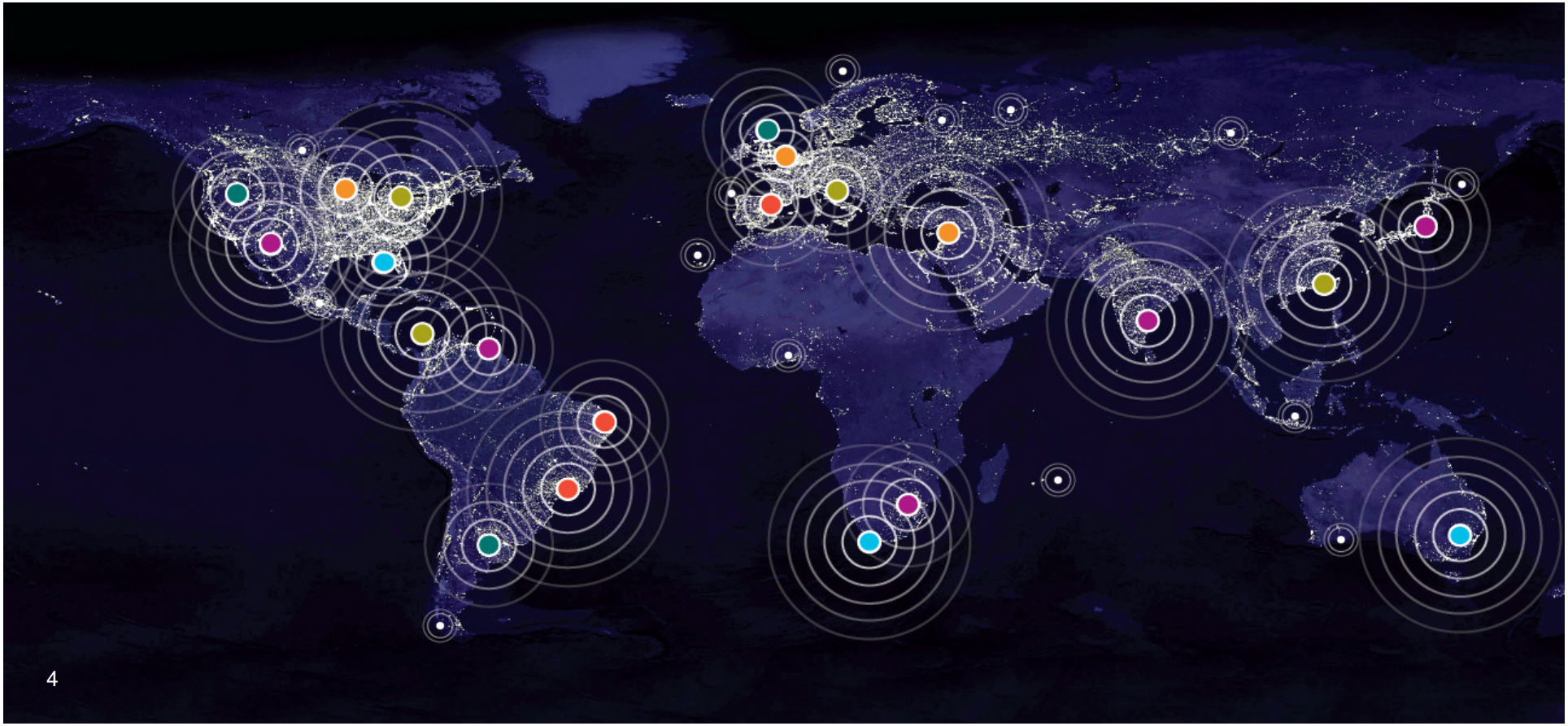
Smarter Money

Smarter Water Management

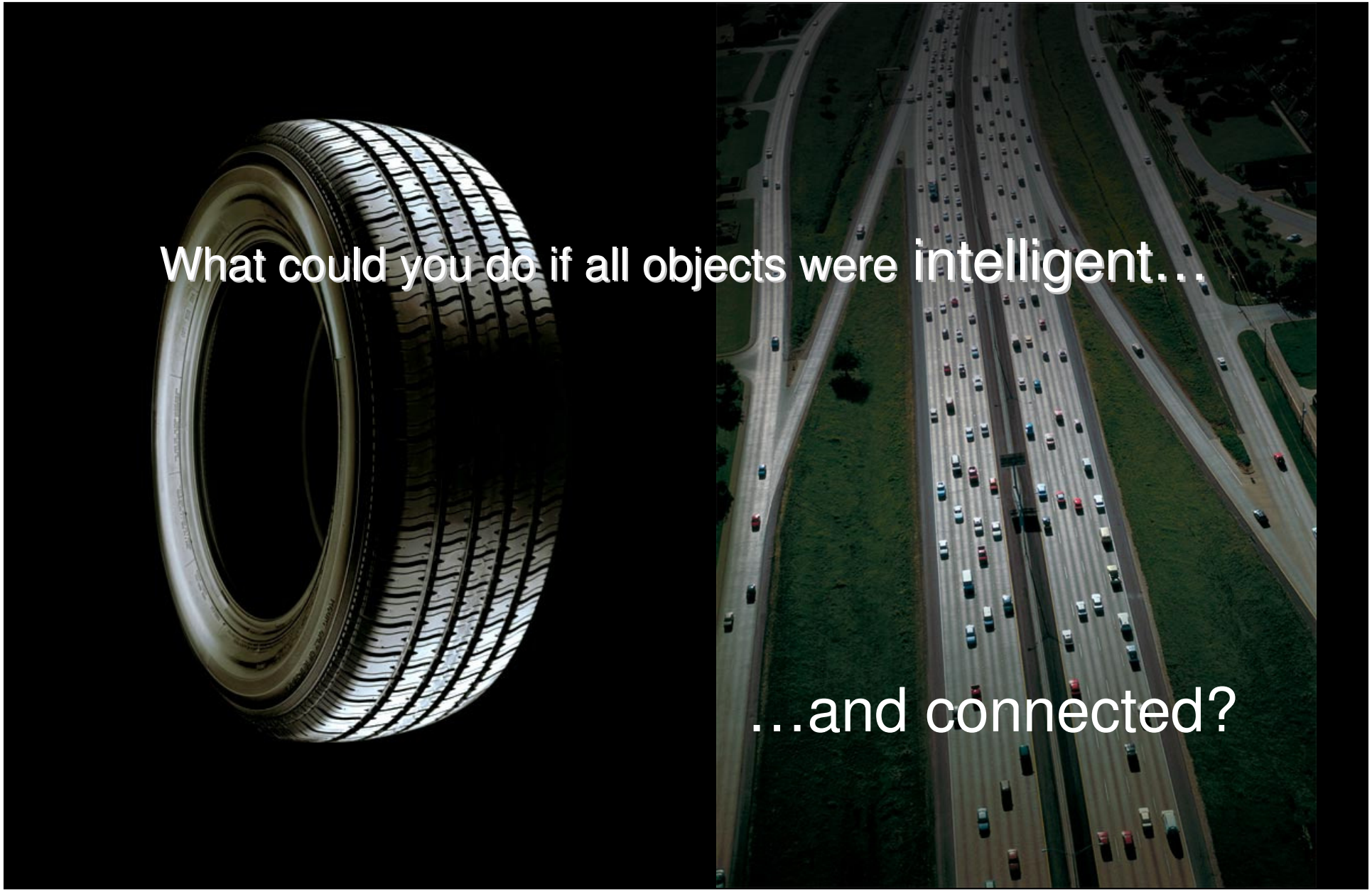
Smarter Cities

Smarter Cities

In 2007, for the first time in history, the majority of the world's population lived in cities – 3.3 billion. By 2050, city dwellers are expected to make up 70 percent of the Earth's total population – 6.4 billion.



IBM



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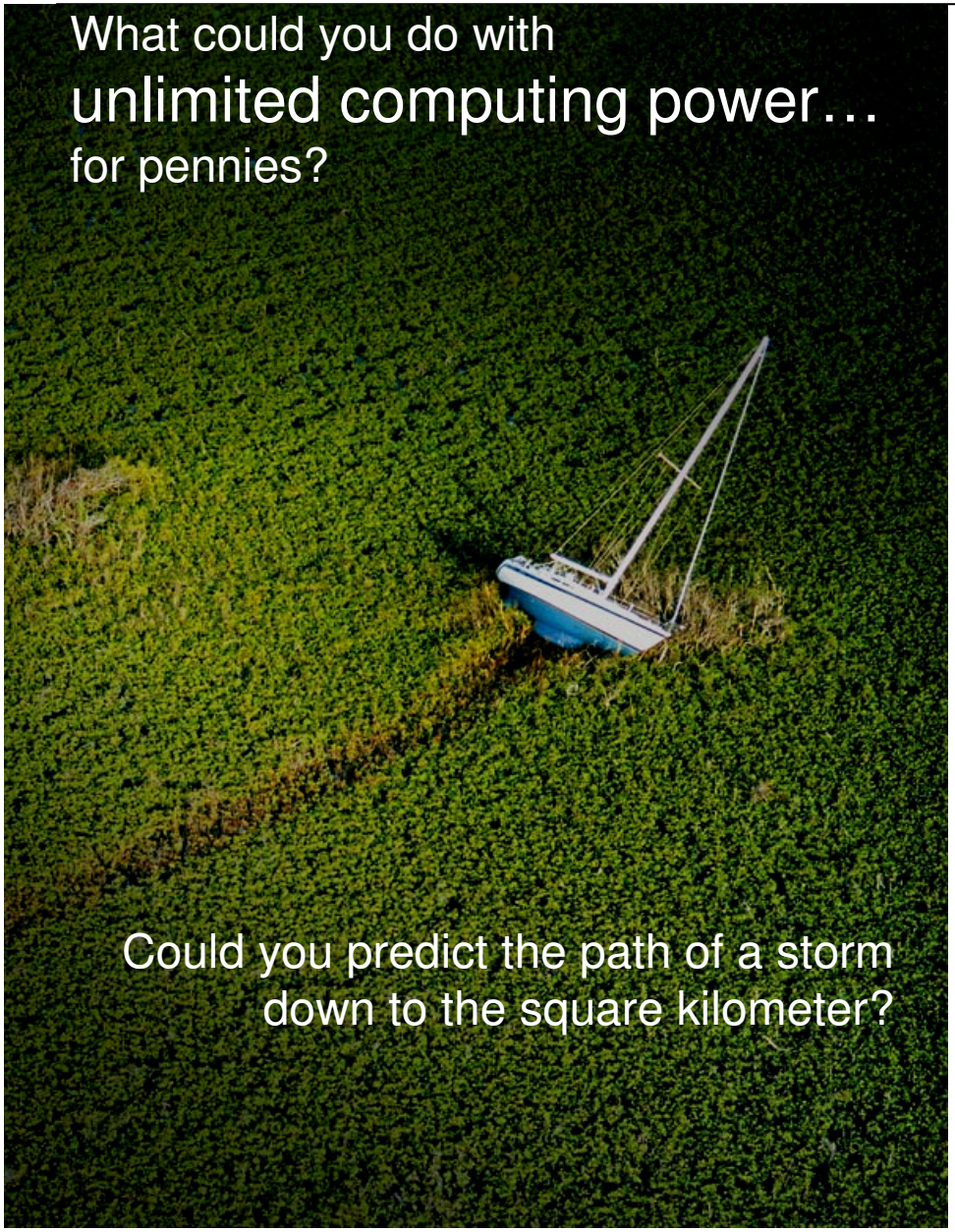
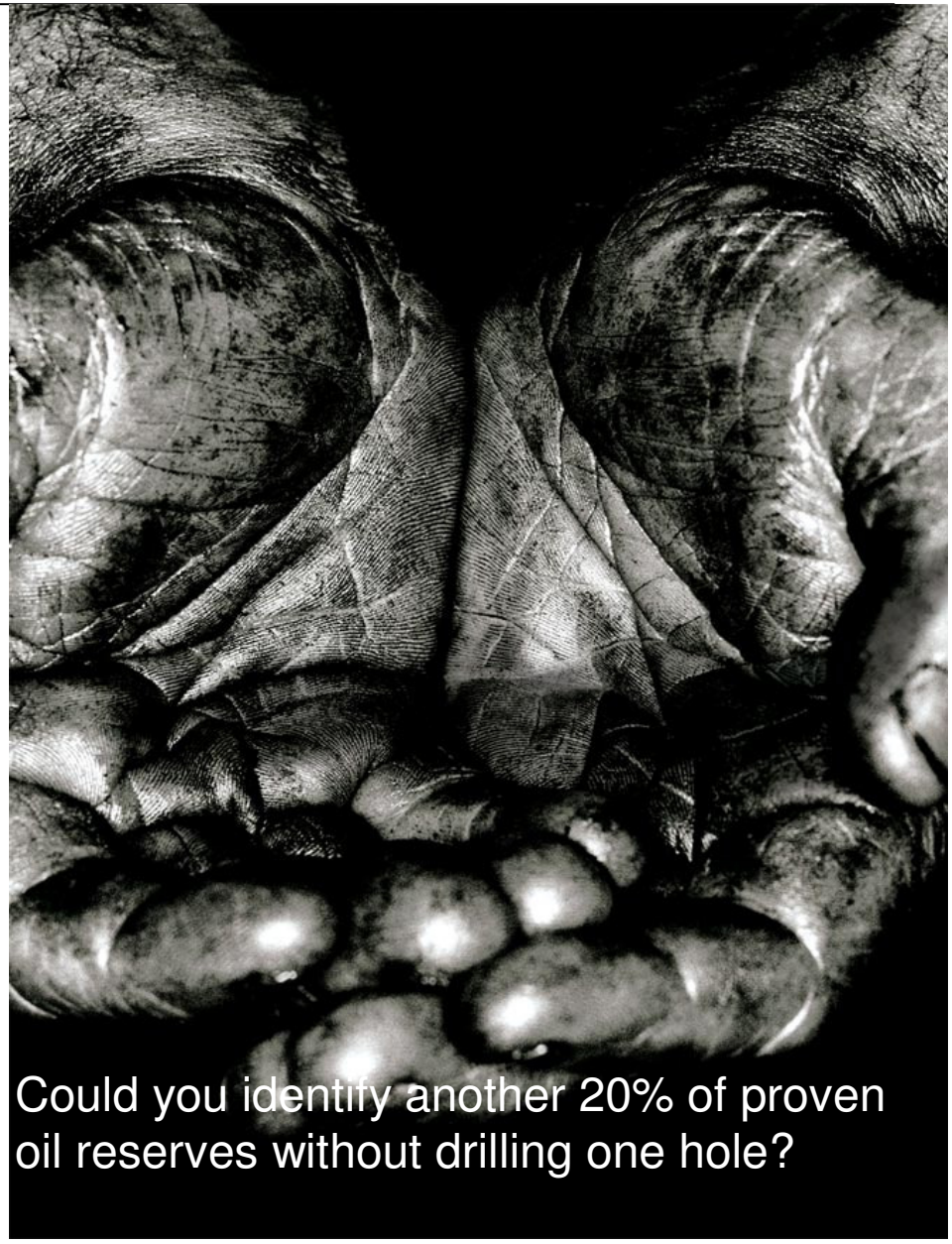
What could you do with
unlimited computing power…
for pennies?

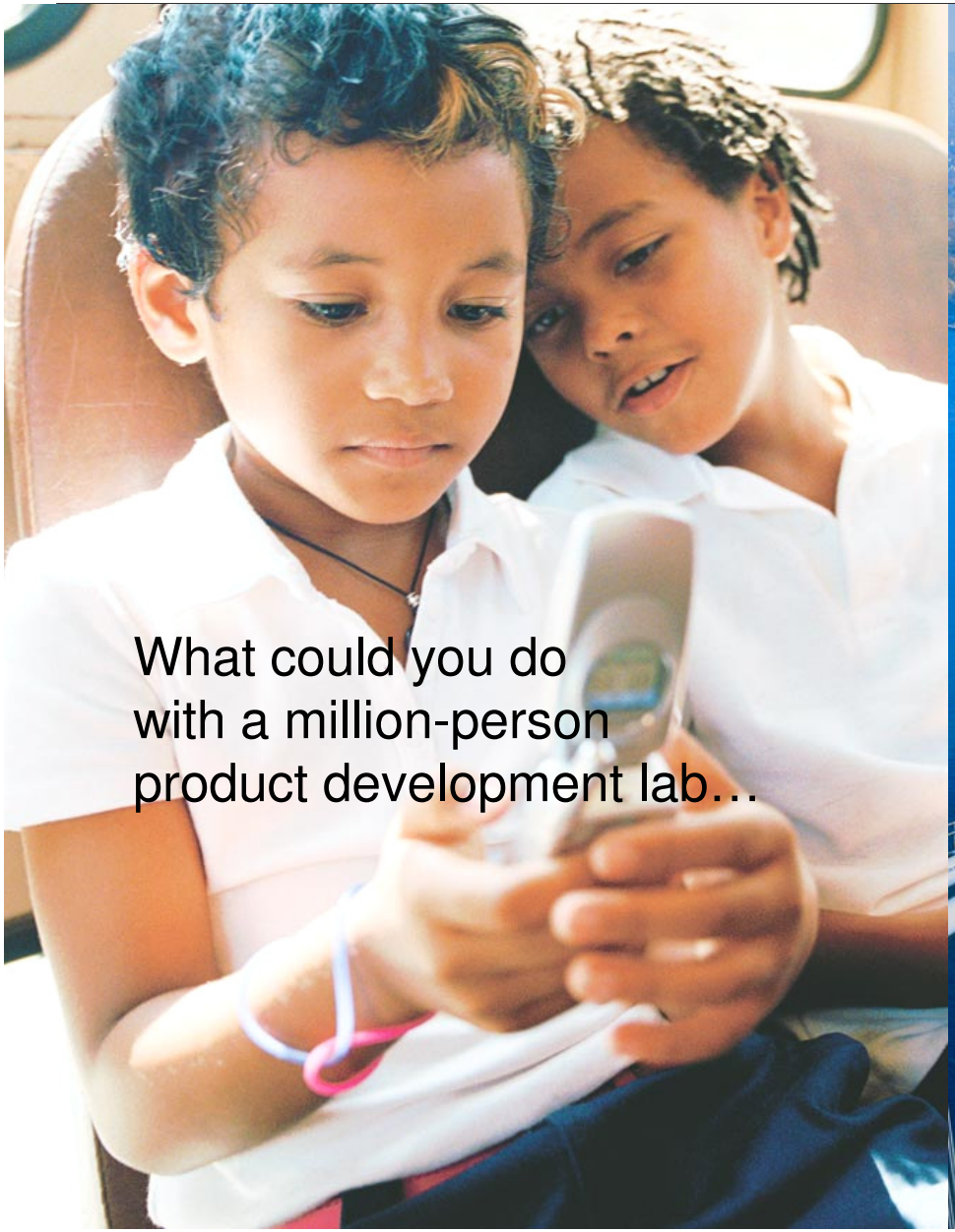


Could you predict the path of a storm
down to the square kilometer?

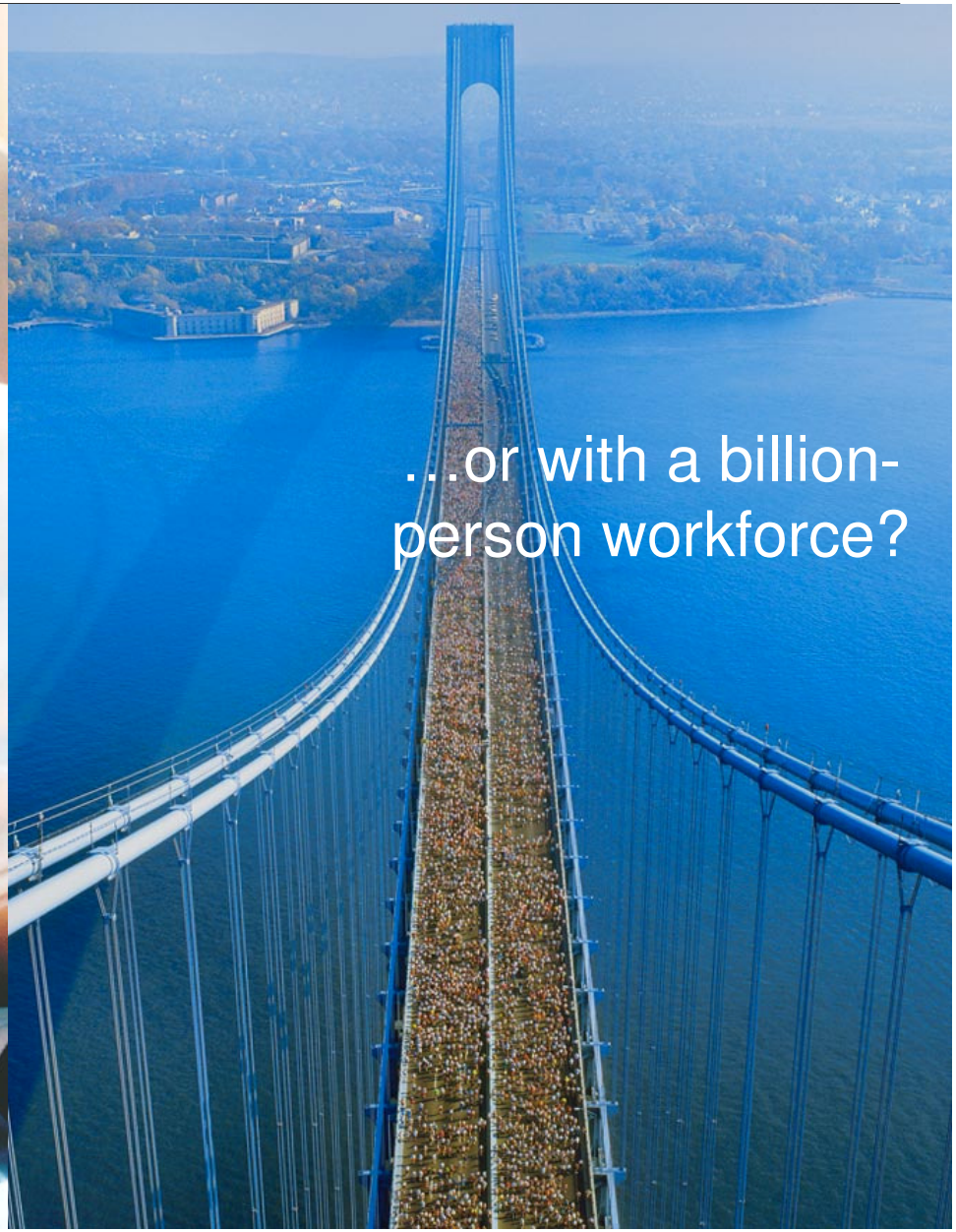


Could you identify another 20% of proven
oil reserves without drilling one hole?

IBM



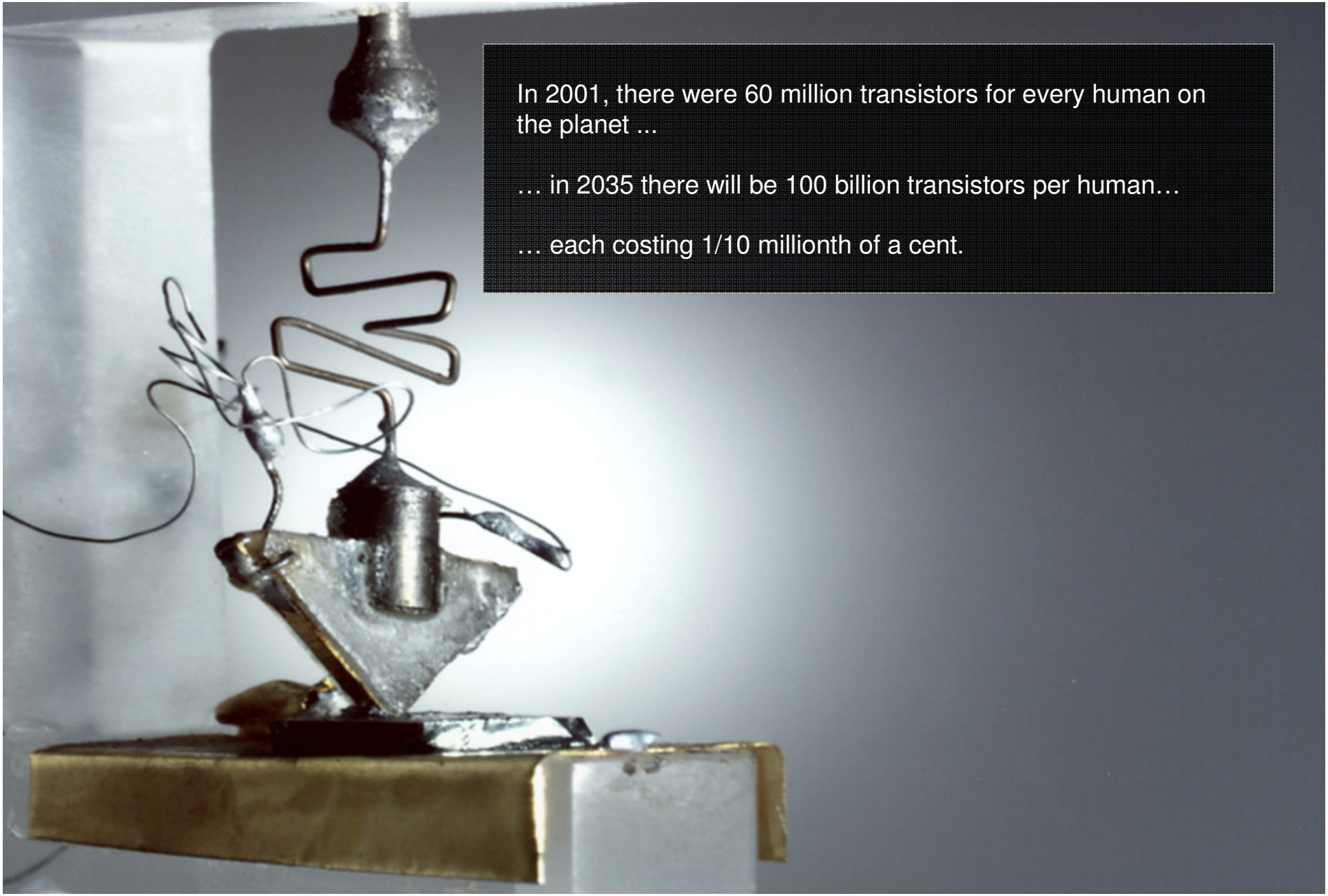
What could you do
with a million-person
product development lab…



…or with a billion-
person workforce?

It's time to take advantage of….

- smart objects
- the connectedness of everything
- supercomputing for everyone
- information put to work
- collaboration & co-creation
- the marketplace for expertise
- the virtual corporation


In 2001, there were 60 million transistors for every human on the planet ...
… in 2035 there will be 100 billion transistors per human…
… each costing 1/10 millionth of a cent.

Across the globe we must confront a crushing set of challenges

10 billion
Number of marketplace data messages handled by global trading systems each day, placing these systems under extreme stress[1]

40% to 70%
Loss of electrical energy around the world because of inefficiency

1 trillion
Number of devices that will be connected to the Internet by 2011[3]

US$4 trillion
Average daily volume in the world's currency marketplaces

78%
Percentage of CIOs who want to improve the way they use and manage their data

80%
Percentage of digital data growth that is predicted to be unstructured and require significant effort to understand and analyze

10x
Amount that digital data is projected to grow by 2011

Yet the reality can seem daunting

Numerous system integrations are required to make a city smarter

Tremendous analytic power is needed to discover new treatments for cancer

Massive amounts of data flowing from hundreds of thousands of smart meters must be read multiple times per hour

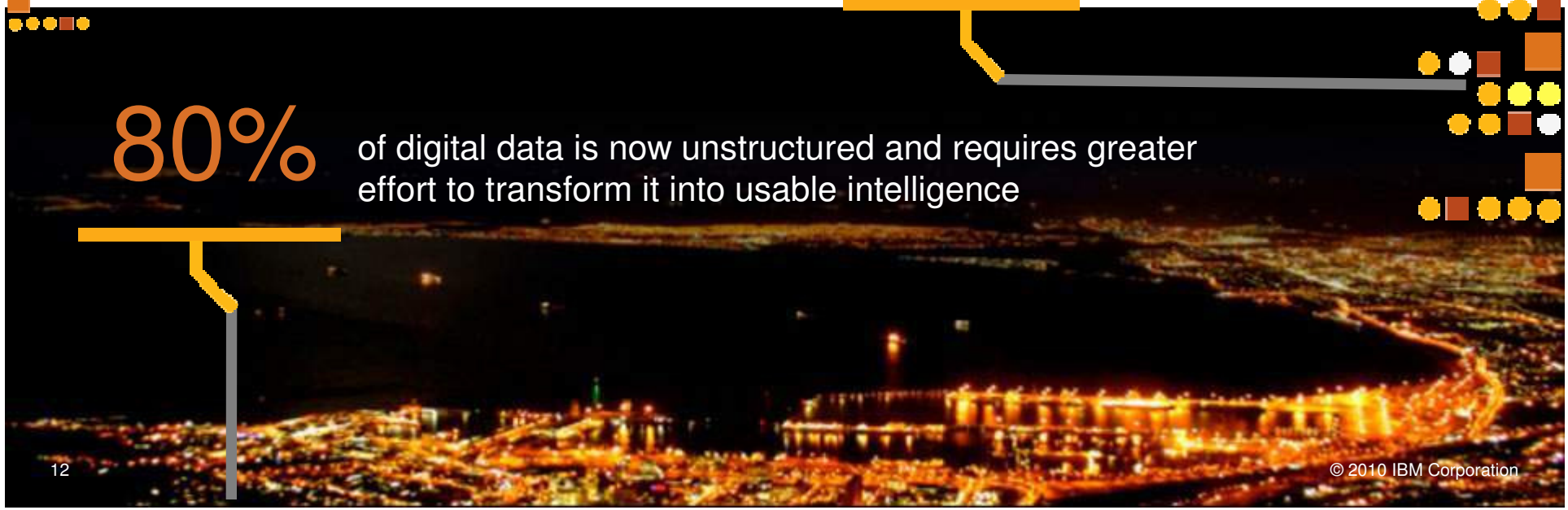
Staggering numbers of images must be captured, stored, managed and linked to billing and collection systems in real time

Especially in light of today's challenges

41% of data center managers claim their data centers will max out their energy capacity within one to two years

Processor power doubles every 18 months, but up to **85%**

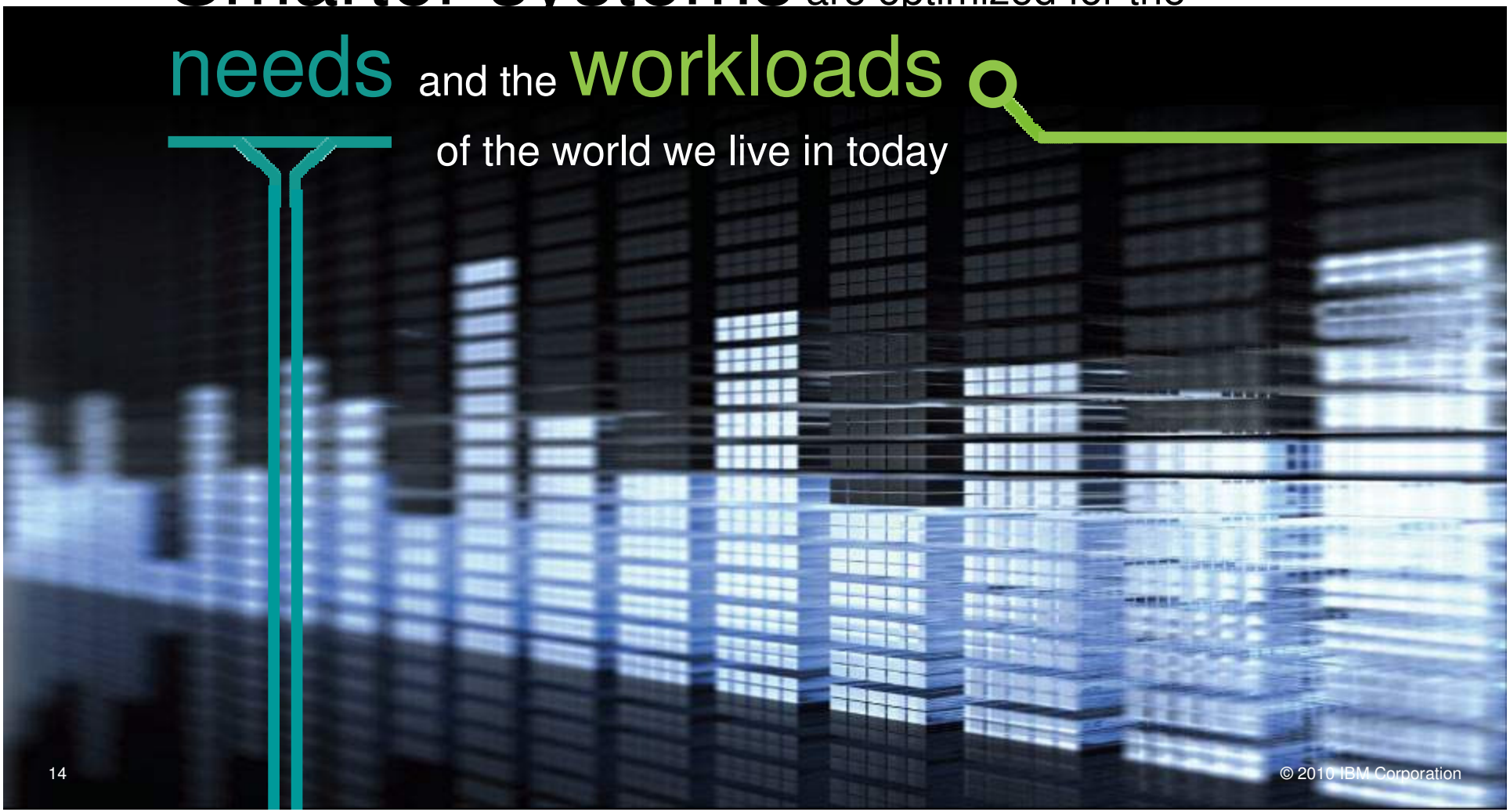
80% of digital data is now unstructured and requires greater effort to transform it into usable intelligence



We need Smarter Systems for a Smarter Planet

Intentionally designing integrated systems—that redefine performance and optimize resources to deliver the highest possible value.

Smarter systems are optimized for the needs and the workloads of the world we live in today



The needs

Reduce the cost and complexity of managing data

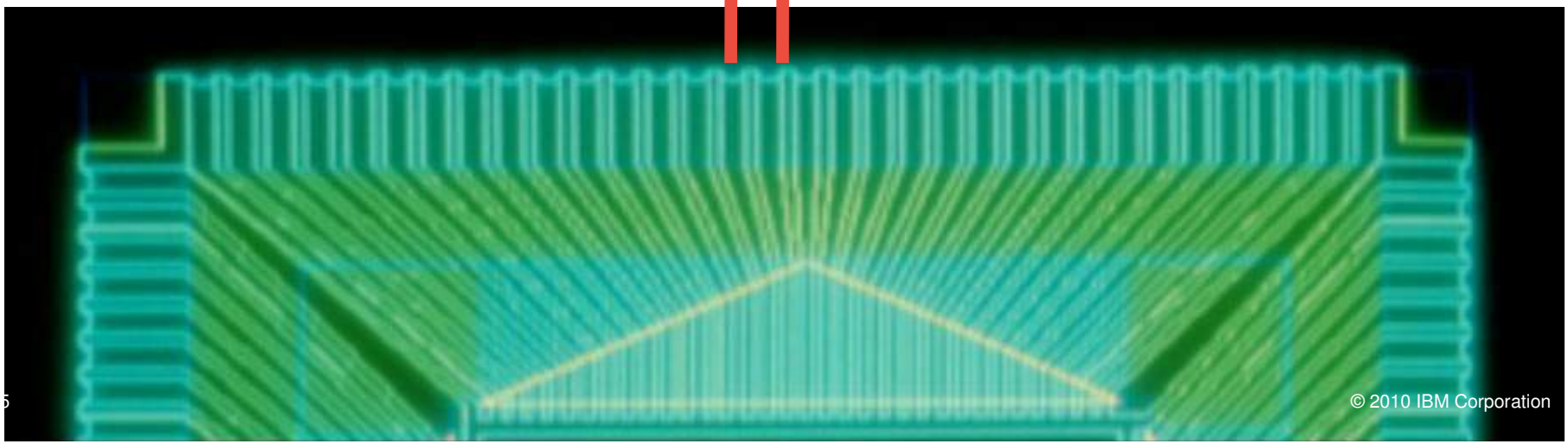
Discover insights and optimize processes – in real time.

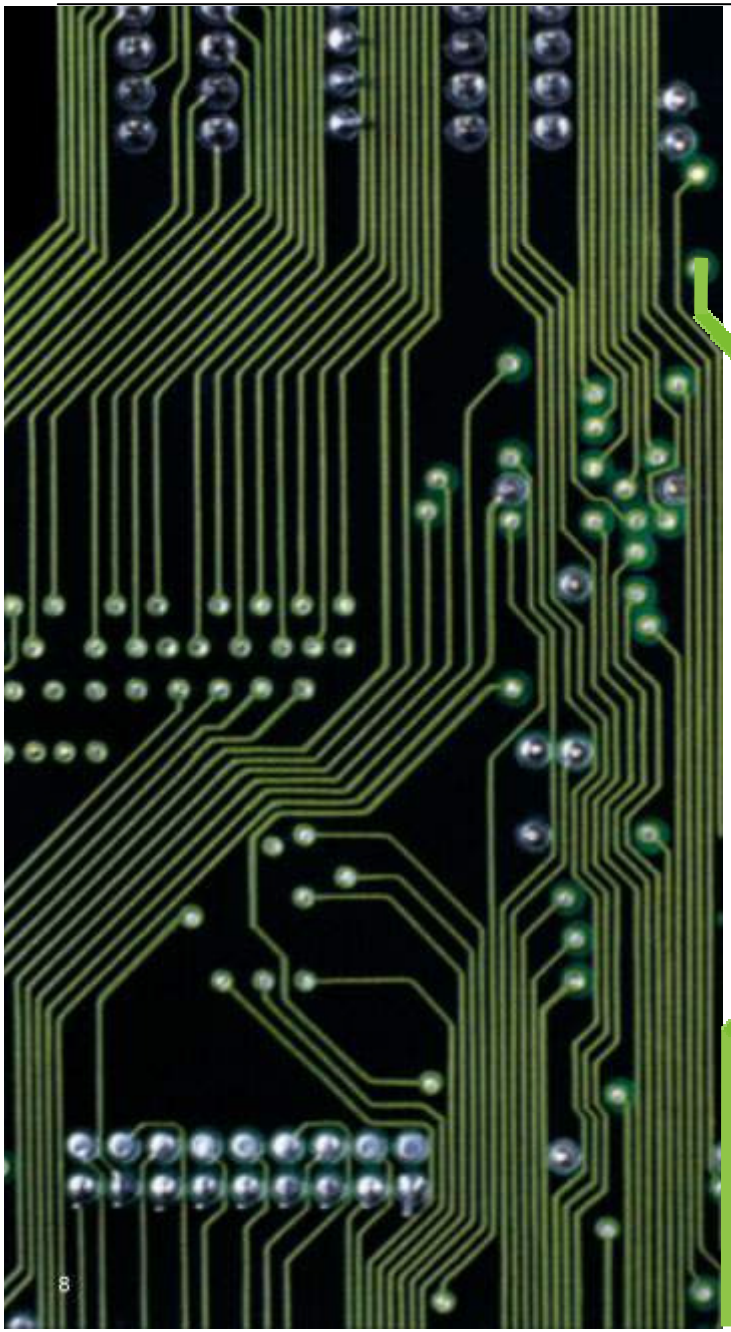
Achieve the business performance and scale required

Deliver operational efficiency & business agility

Manage risk, security and compliance

The empowered workforce





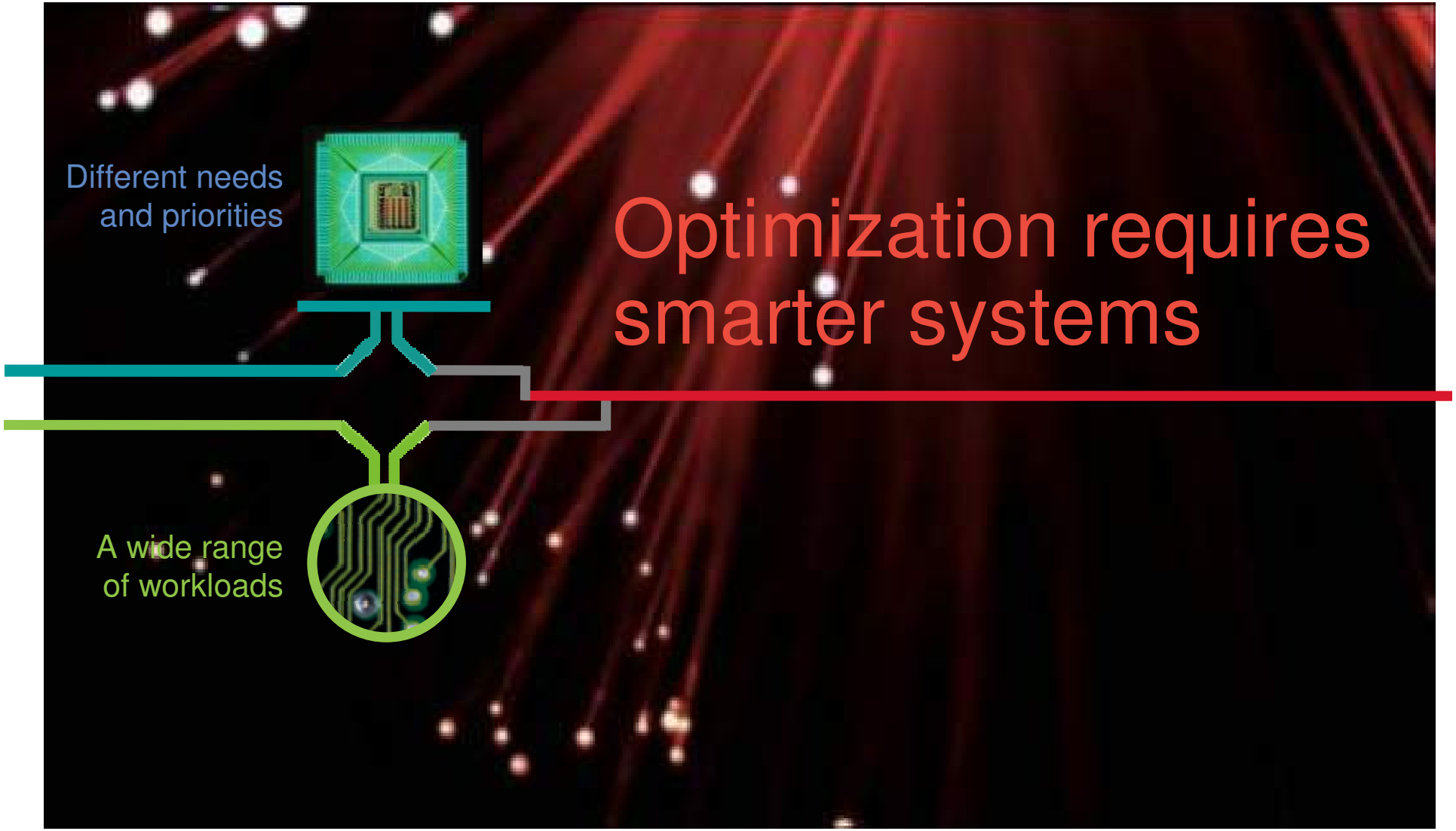
The workloads

Transaction Processing and Database Applications

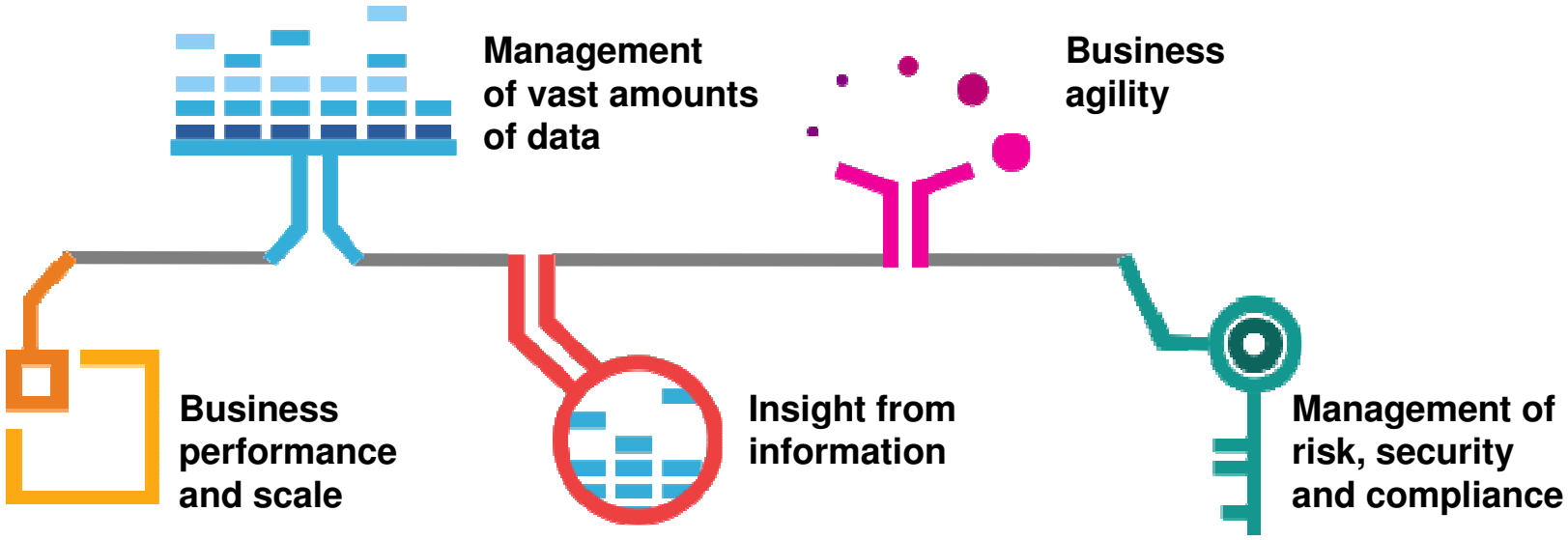
Business Intelligence and Analytics

Business Process Management

Collaboration and Infrastructure Applications



IBM is building Smarter Systems for a Smarter Planet



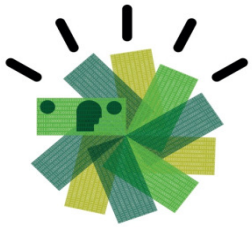
With smarter solutions on e.g smart Hardware Systems and smart IBM Software, clients of all sizes are leveraging new capabilities for significant benefits.

Retail

10k

per day

Transactions automatically tracked and analyzed by **SuperPharm in Trinidad** after implementing a smarter retail solution with WebSphere and DB2 on Power.



Banking

600

billion

Number of Japanese Yen deposited into 400,000 new accounts after only 18 months since startup of **SBI Sumishin Net Bank in Japan** – an internet-only bank on Power.

Telecom

1.5

million

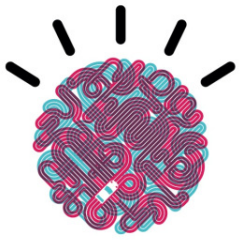
Number of new customers per month processed by **Bharti Airtel of India** on Power Systems and IBM Storage – now servicing over 110 million total mobile phone customers.

Healthcare

1.67

million

Number of annual cases with records entered into a new open, digital medical records system on Linux on Power improving disease management at **Peking University People's Hospital.**



Traffic

20 million

Number of fare transactions per day on Power – 2x previous capacity – allowing single card payment across tolls, buses and trains for **Singapore Land Transport Authority**.

Cities

500

thousand

Number of devices monitored on the **City of Austin**, Texas's smart energy grid that offers 1 million consumers dynamic pricing and lower energy bills, running on Power Systems.

A possible example ..... Highway A2 in 2025

Smarter Traffic

Stockholm implemented an intelligent toll system in the city center, which resulted in 20% less traffic, 40% lower emissions and 40,000 additional users of the public transportation system.

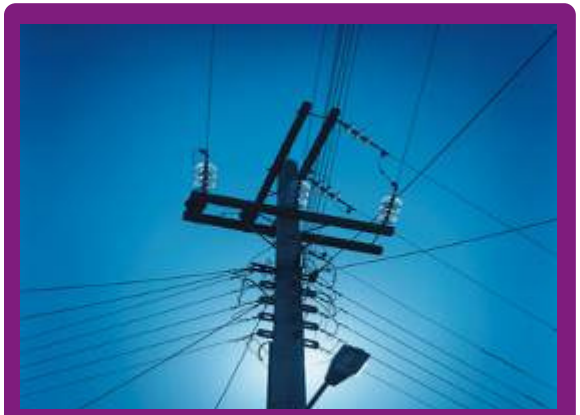
DAF Trucks wanted to make their fleet management smarter. DAF engaged IBM to facilitate a solution in which DAF and it's customers could use telemetry data. This system uses real-time data gathered from the fleet's trucks, providing options to better interact with the fleet and optimize processes in real time.

The first Dutch road charging trial done by IBM and NXP in the **city of Eindhoven** demonstrates that Road User Charging has a positive effect on driving habits which are necessary to improve mobility. The results show that 70% of trial participants improved behavior by avoiding rush hours and using highways instead of local roads.

Smarter Grids and Utilities

Malta is building a nationwide smart grid and a fully integrated electricity and water system. This system, 250,000 interactive meters, will be able to identify water leaks and electricity losses in the grid, allowing the utilities to more intelligently plan their investments in the network and reduce inefficiency.

In **Amsterdam**, 500 households will participate in a pilot program of IBM and Nuon for smart meters in that city. Citizens, governments and companies are working together to make more efficient use of energy, water and mobility to create a more sustainable city.



In the **GridWise Olympic Peninsula Project** in Washington state, IBM helped to tie intelligent devices (e.g. thermostats) in consumers' homes to the grid system, which automatically controlled power consumption based on pricing signals and customer preference. Electricity bills were decreased by an average of 10 percent.

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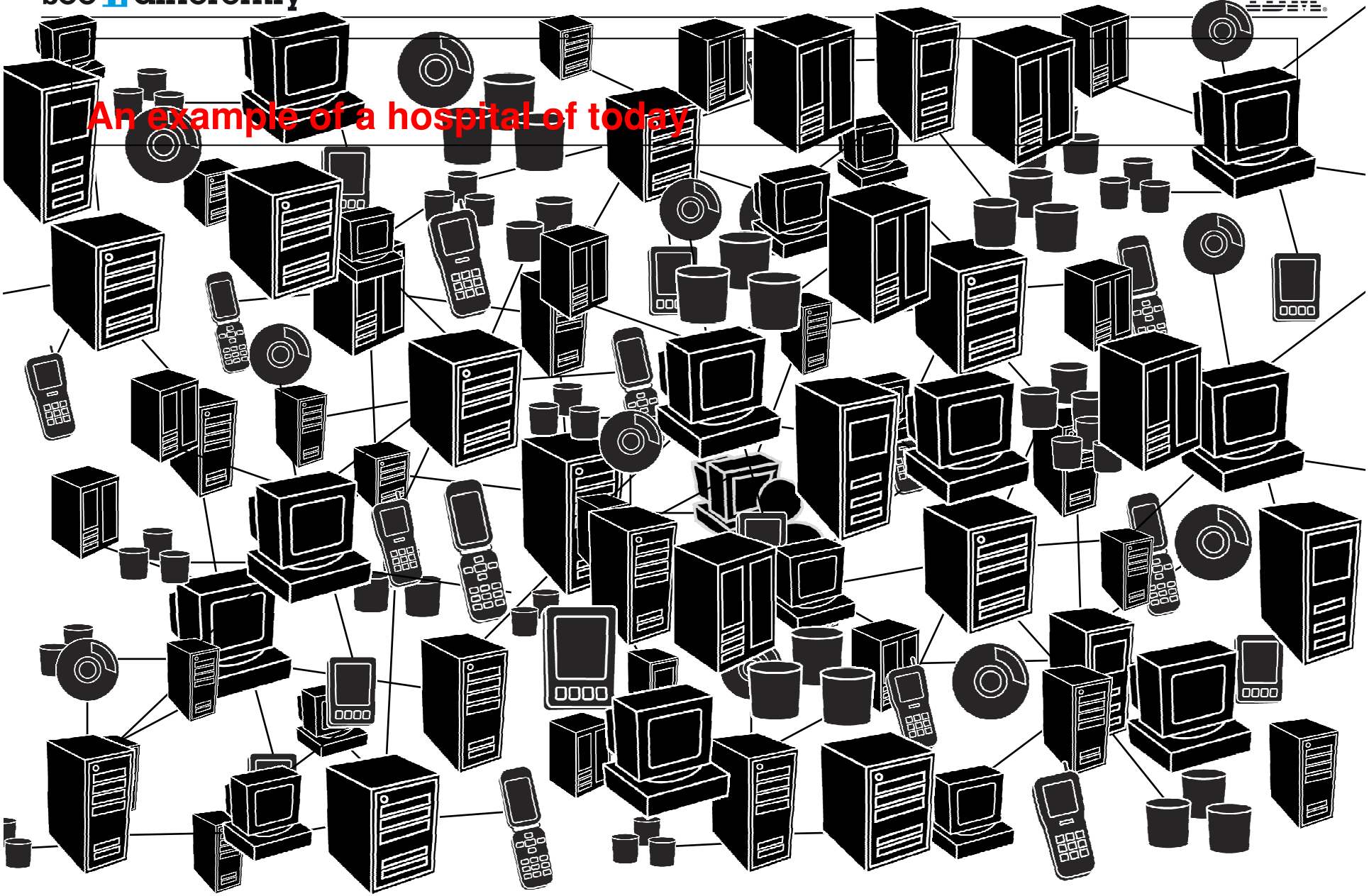
An example of a hospital of today



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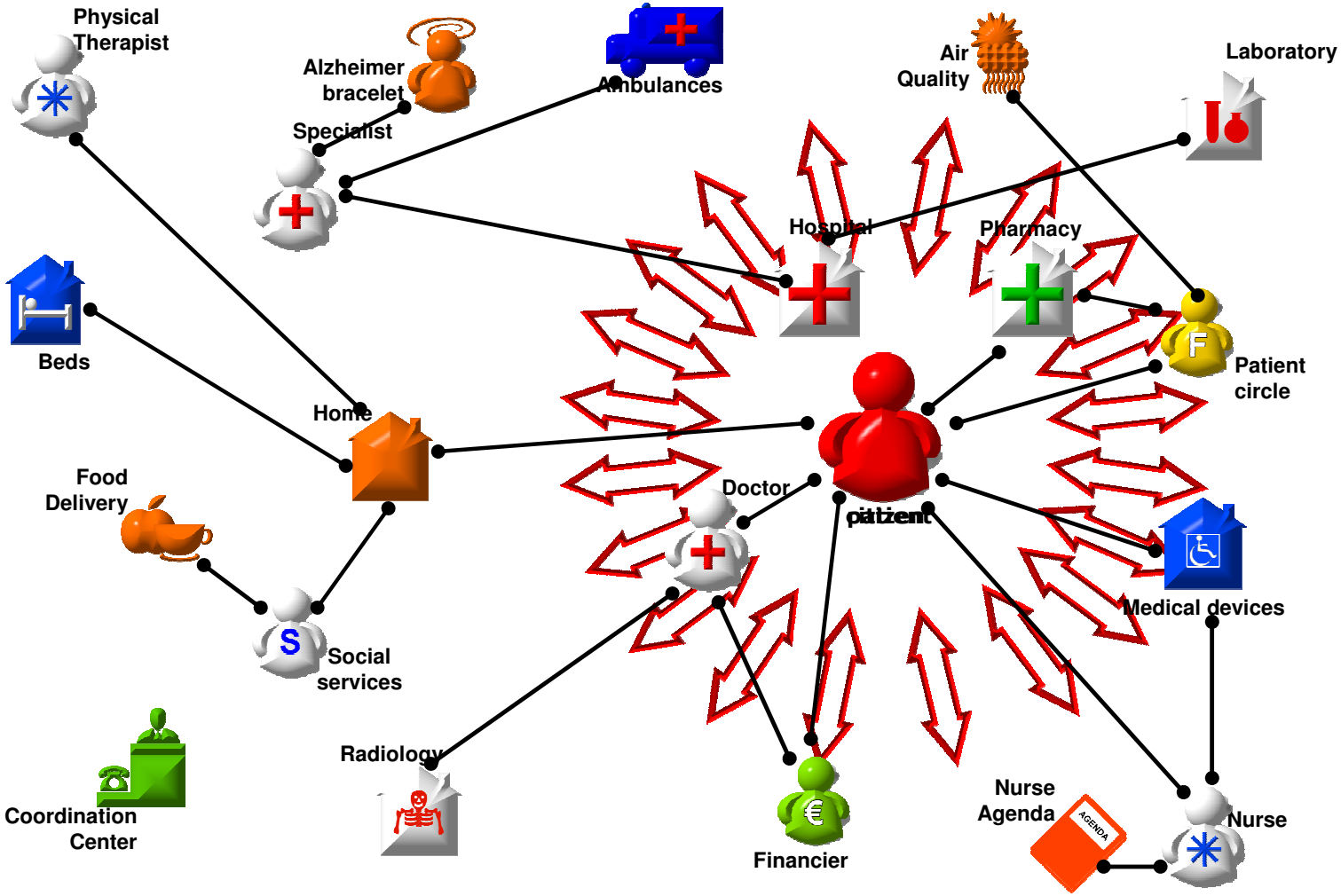
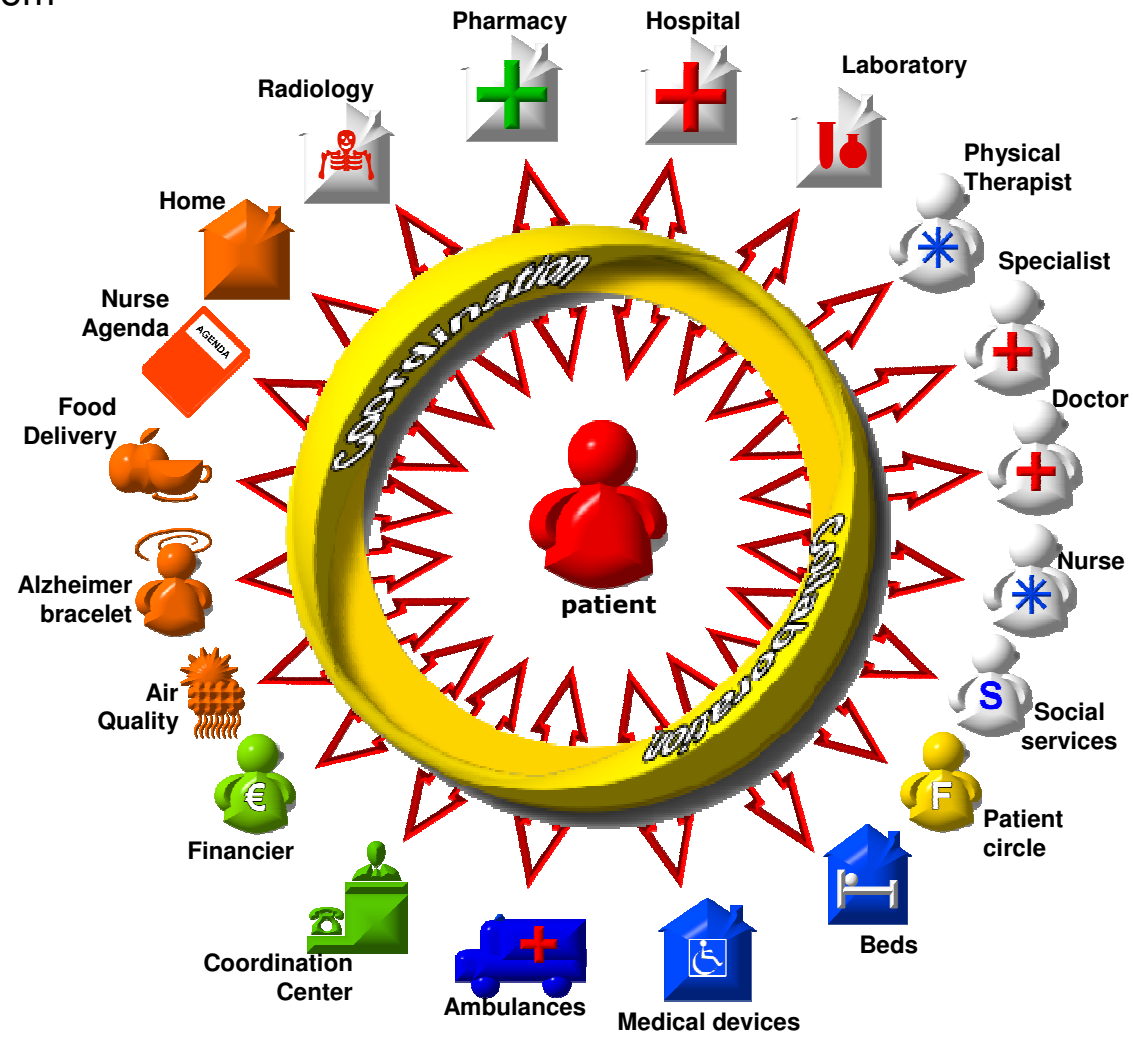


TO: a Smarter Healthcare System



IBM software reduces the guesswork—20 times faster

Smarter healthcare

Researchers at EuResist can predict how a patient with HIV will respond to treatment by instantly comparing a blood sample against 33,000 HIV treatment histories.

Doctors treat patients based on insights that are more than 76 percent accurate and come up to 20 times faster than anything in the marketplace.

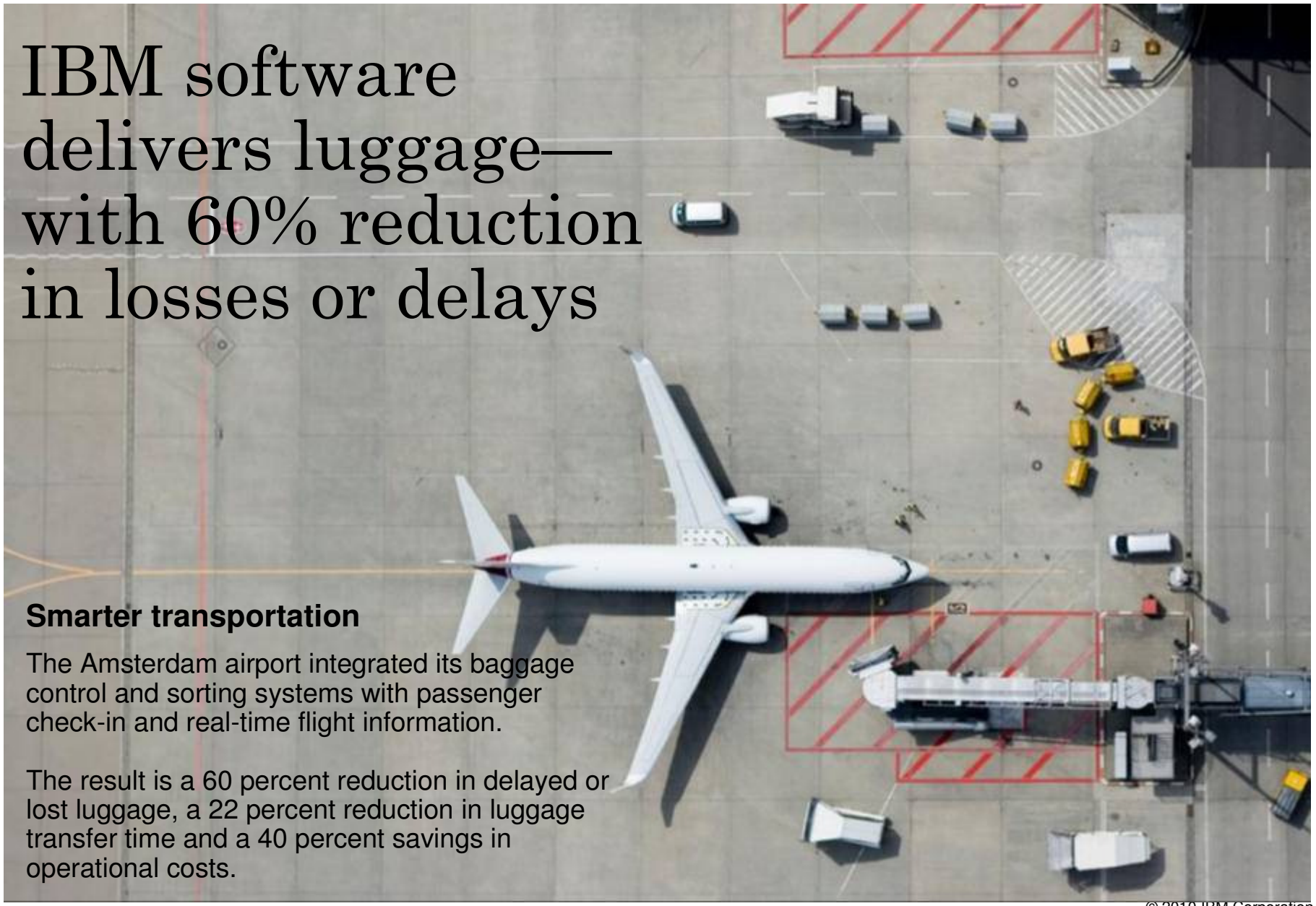
Smarter Healthcare

In **Rochester** in the US, Mayo Clinique and IBM are collaborating to help physicians the ability to register medical images up to 50-times quicker and provide critical diagnosis, such as the growth or shrinkage of tumors, in seconds instead of hours.

In **Antwerp** IBM helped the Universitair Ziekenhuis Antwerpen to develop a platform to improve the knowledge and diagnostic capability of rare diseases.

In **Alkmaar** we are building the hospital environment for the future. This is to gain a higher efficiency and open possibilities to build a new IT platform that makes these hospitals ready for the new ways of communication within Healthcare.

IBM software delivers luggage—with 60% reduction in losses or delays



Smarter transportation

The Amsterdam airport integrated its baggage control and sorting systems with passenger check-in and real-time flight information.

The result is a 60 percent reduction in delayed or lost luggage, a 22 percent reduction in luggage transfer time and a 40 percent savings in operational costs.

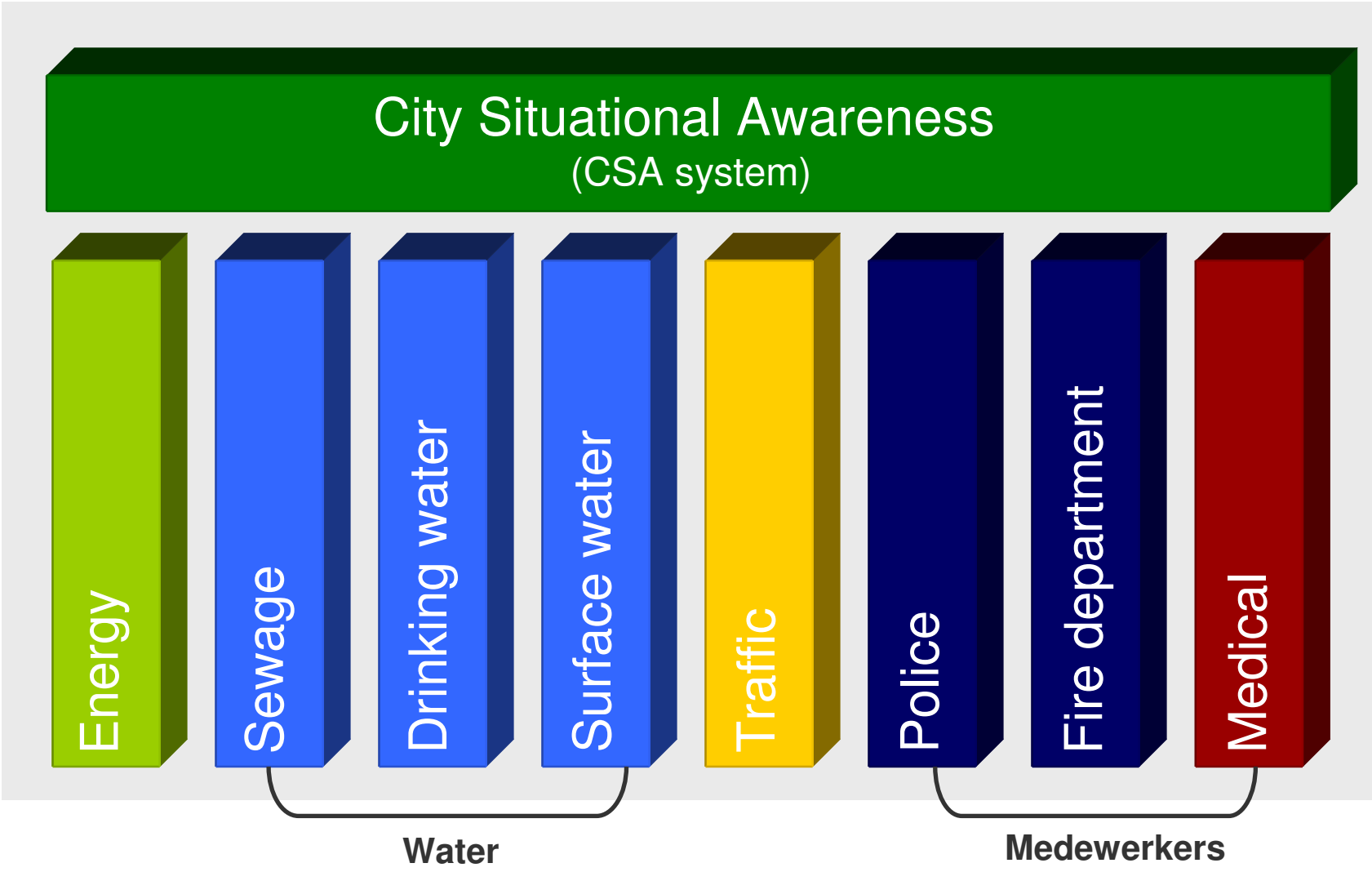
Smarter Transportation

Aeroports De Paris uses an IBM resource optimization solution to coordinate equipment and facilities. As a result, there are fewer flight delays, passengers move through the airport faster and operating costs are lower. Also, creating a plan for aircraft parking stands and ground equipment takes 3 minutes instead of more than 4 hours.

In 2013 **Schiphol airport** in Amsterdam will have the capability of transferring 70 million pieces of baggage a year. When the hall opens in 2011, six robots will mechanically manage baggage, handling 60 percent of the loading. With this new baggage hall Schiphol will be able to manage the future growing stream of passengers

NS is using the IBM ILOG Development System to enhance its rolling stock allocation for better resource utilization. The NS has been able to improve its operating efficiency by as much as six percent, netting the railway a cost savings of over EUR 20 million annually.

The CSA System: integrating several ‘stovepipes’



Rotterdam Demo Scenario

1

Melting snow in Alps & rainwater

2


Rhine level above normal

3

UK storm & NL Dyke inspections

4

Fast rising water in Rhine and Maas

5

Dyke inspector reports

6

Arriving storm & Pumping activity

7

Preparation of water plazas

8


Heinenoord Tunnel flooded & GPS messages

9


Sea water rising & Maesland barrier

10

Centre Dordrecht flooded & SMS messages

11

Information release / Distribution

Energy

Water

Decision Support

Traffic

Resources

Medical

Hoe stellen we de prioriteiten in informatie aan brandweer en politie? (energie,verkeer ,waterpleinen etc)

Hoe stellen we een goede balans vast tussen pomp en afvoer?

Smarter Cities

IBM is helping the City of **Rotterdam** to monitor real-time data regarding climate change and energy management, enabling the local government to reduce the amount of CO2 in the city, realize better water management and create a better environment for its citizens.

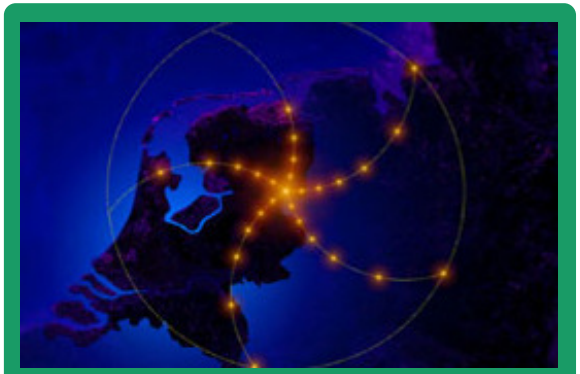
Brussels & Leuven are lining up to showcase the solution IBM and partners developed. Next to the road charging functionality, other capabilities of the solution and value added services will be tested and demonstrated

In the city of **Mons**, IBM partners with the Walloon Region and Cisco for the creation of a non-profit initiative: the "Euro Green IT Innovation Center". Purpose of this Center is to launch innovative pilot projects in the Region

Enorme hoeveelheden data,..... er is 4 miljoen jaar over gedaan om alle data tot het jaar 0 te genereren>>> de eerste verdubbeling rond de Renaissance na zo'n 1500 jaar , tweede verdubbeling elke150 jaar (rond 1650), in de zestiger jaren elke 6 jaar een verdubbeling , nu elke 6 maanden een verdubbeling en het blijft stijgen !!!!!

Supercomputers

MareNostrum is an IBM supercomputer in Europe, the most powerful in Spain. The supercomputer is used in human genome research, protein research, astrophysical simulations, weather forecasting, geological or geophysical modeling, and the design of new drugs.



LOFAR Development of a radio telescope 100 times more sensitive than current technology. Development of IBM Blue Gene/L supercomputer. Multi-disciplinary collaboration and spin-offs: Astrophysics, Geophysics, Agriculture, Information Technology.

Ghent University has earned a position on the TOP500 list of fastest supercomputers in the world by taking delivery of a supercomputer capable of performing more than 15 billion computations per second. With this performance, this computational work horse is also the fastest academic supercomputer in Belgium. The system was designed, delivered and installed by ClusterVision in close collaboration with IBM.

Going towards the future with new technologies takes courage …

…..Thank you for your attention