Stichting NIOC en de NIOC kennisbank

Stichting NIOC (www.nioc.nl) stelt zich conform zijn statuten tot doel: het realiseren van congressen over informatica onderwijs en voorts al hetgeen met een en ander rechtstreeks of zijdelings verband houdt of daartoe bevorderlijk kan zijn, alles in de ruimste zin des woords.

De stichting NIOC neemt de archivering van de resultaten van de congressen voor zijn rekening. De website www.nioc.nl ontsluit onder "Eerdere congressen" de gearchiveerde websites van eerdere congressen. De vele afzonderlijke congresbijdragen zijn opgenomen in een kennisbank die via dezelfde website onder "NIOC kennisbank" ontsloten wordt.

Op dit moment bevat de NIOC kennisbank alle bijdragen, incl. die van het laatste congres (NIOC2025, gehouden op donderdag 27 maart 2025 jl. en georganiseerd door Hogeschool Windesheim). Bij elkaar zo'n 1500 bijdragen!

We roepen je op, na het lezen van het document dat door jou is gedownload, de auteur(s) feedback te geven. Dit kan door je te registreren als gebruiker van de NIOC kennisbank. Na registratie krijg je bericht hoe in te loggen op de NIOC kennisbank.

Het eerstvolgende NIOC vindt plaats in 2027 en wordt dan georganiseerd door HAN University of Applied Sciences. Zodra daarover meer informatie beschikbaar is, is deze hier te vinden.

Wil je op de hoogte blijven van de ontwikkeling rond Stichting NIOC en de NIOC kennisbank, schrijf je dan in op de nieuwsbrief via

www.nioc.nl/nioc-kennisbank/aanmelden nieuwsbrief

Reacties over de NIOC kennisbank en de inhoud daarvan kun je richten aan de beheerder:
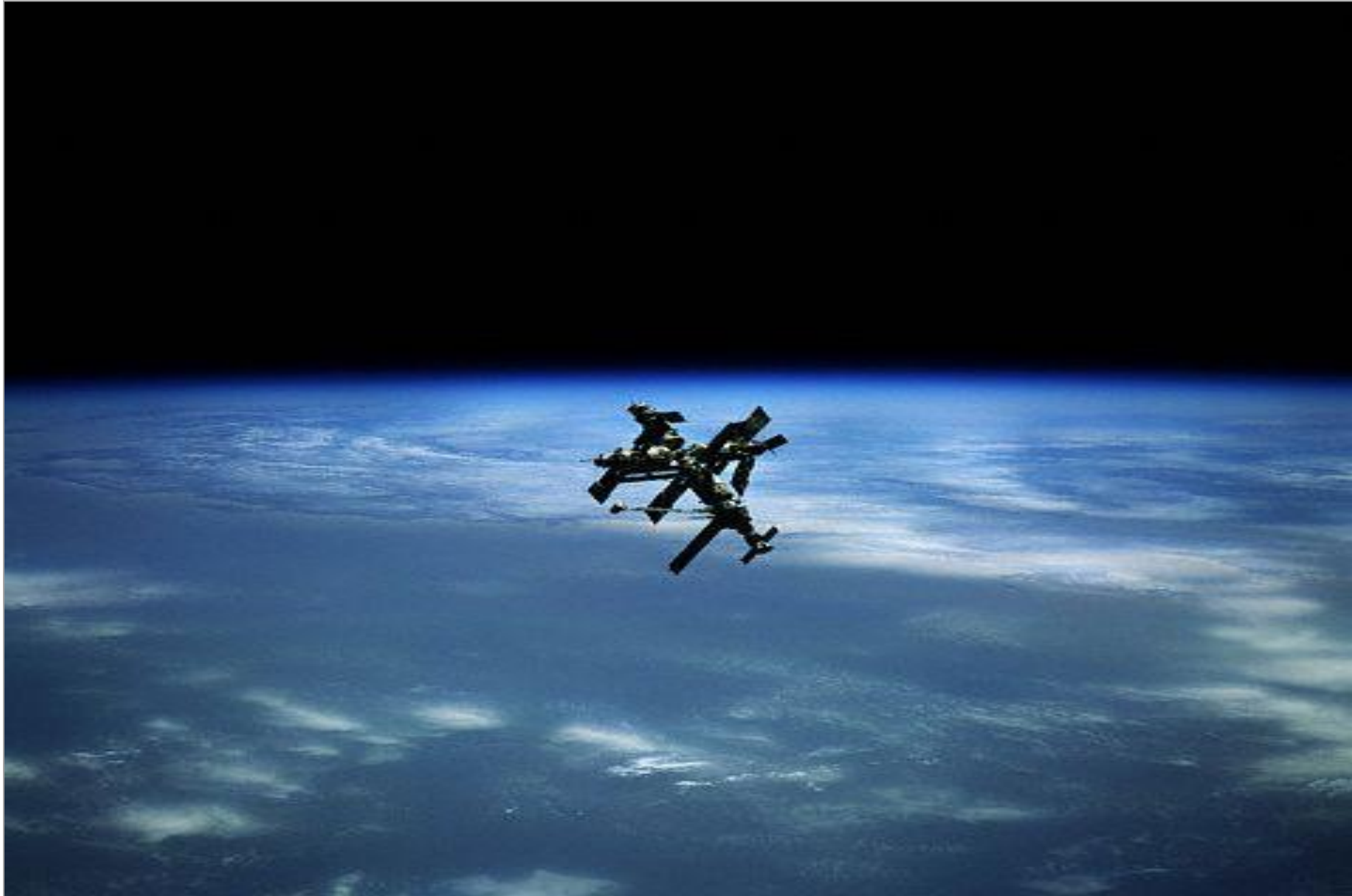R. Smedinga kennisbank@nioc.nl.
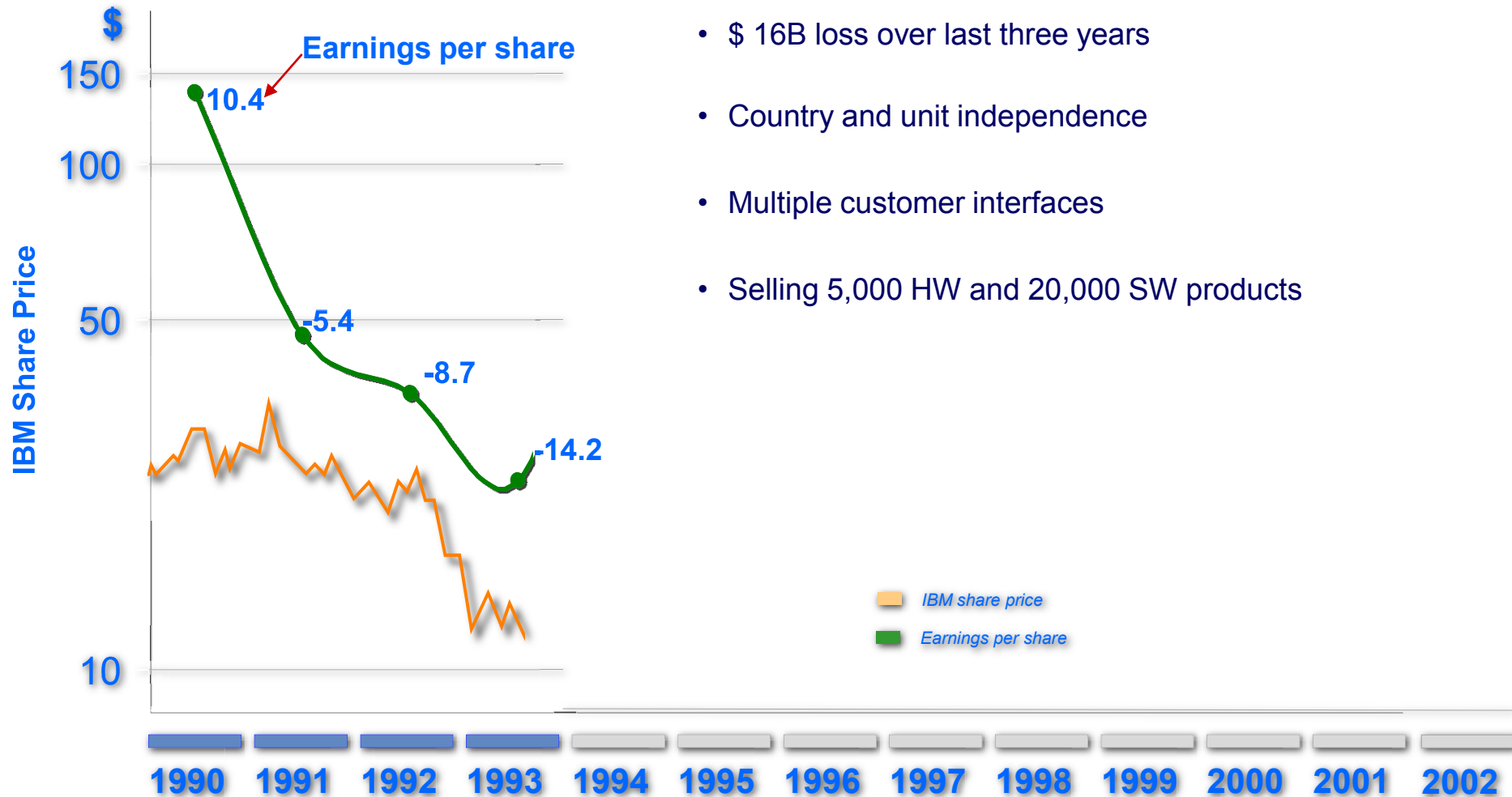Vermeld bij reacties jouw naam en telefoonnummer voor nader contact.

Global Services trends, Past, Present and Future

Kees Donker (Executive for Government , Innovation and Technology , IBM Benelux /// Kees51 B.V.)
April the 5th 2013

The financial markets agreed – the case for transformation was clear

Earnings per share

10.4
-5.4
-8.7
-14.2

IBM Share Price

$
150
100
50
10

IBM share price
Earnings per share

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002

- $ 16B loss over last three years

- Country and unit independence

- Multiple customer interfaces

- Selling 5,000 HW and 20,000 SW products

IBM's Transformation: An Ongoing Journey

Focus Areas

- Keeping company together & stabilizing business

- Bringing massive decentralization under control (e.g., 128 CIOs to 1; 70 ad agencies to 1)

- From country to global brand P&L statements

- Move to integrated solutions

- Dramatic growth in services

> "I think the greatest challenge facing the company is … **to adapt our strategy, structure and culture to a world of constant change. I can't promise this journey will be easy or fast… the steps we will take will not be pussyfooting but bold strides.**" *-- Lou Gerstner, 1993*

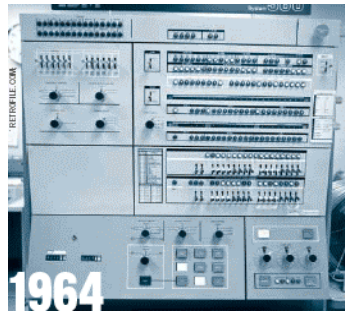1993   1995   1997   1999   2001   2003   2005   2007   2009

Phase One
Gerstner era ('93 thru 2002)

IBM has a long history of renewing itself in response to shifts markets, technology, customers and competitors

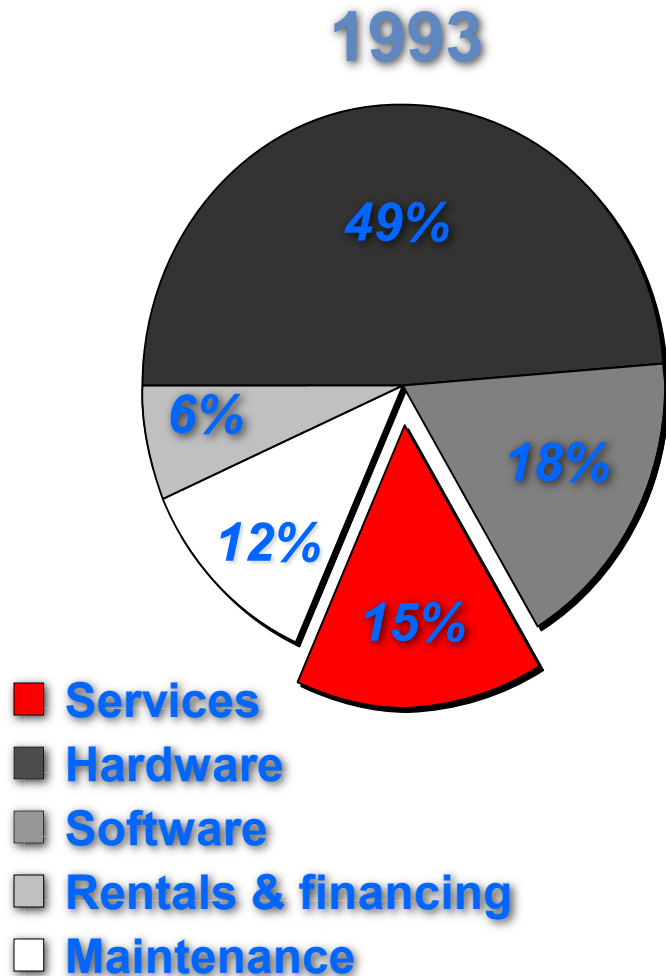**IBM's Revolutionary History**

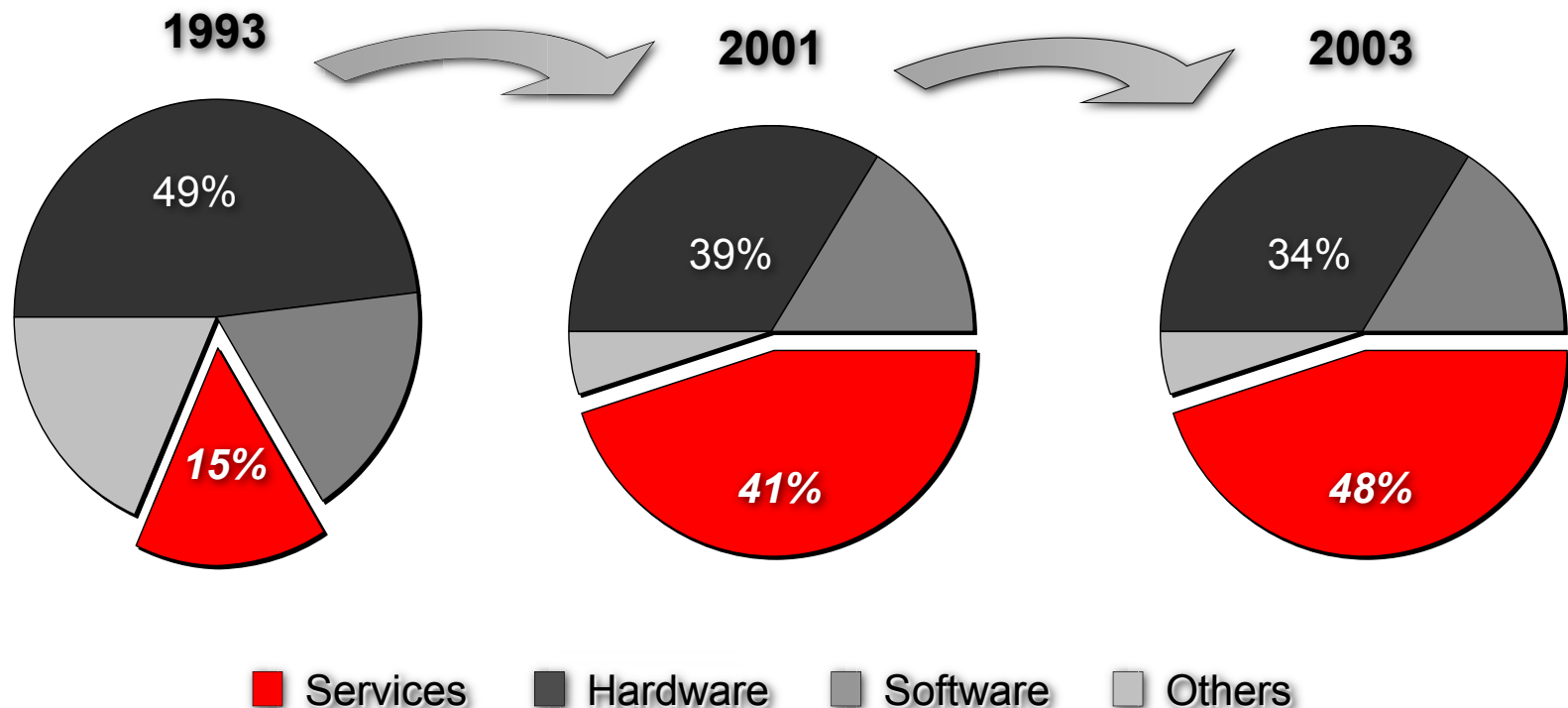| Accounting Machines | The First Mainframe | Personal Computers | Services Transformation | On-Demand Solutions & Delivery |

Market trends indicated that the future of the computer industry needed to move beyond hardware and software

1993

- **49%** Hardware
- **18%** Software
- **6%** Rentals & financing
- **12%** Maintenance
- **15%** Services

Legend:
- ■ Services
- ■ Hardware
- ■ Software
- □ Rentals & financing
- □ Maintenance

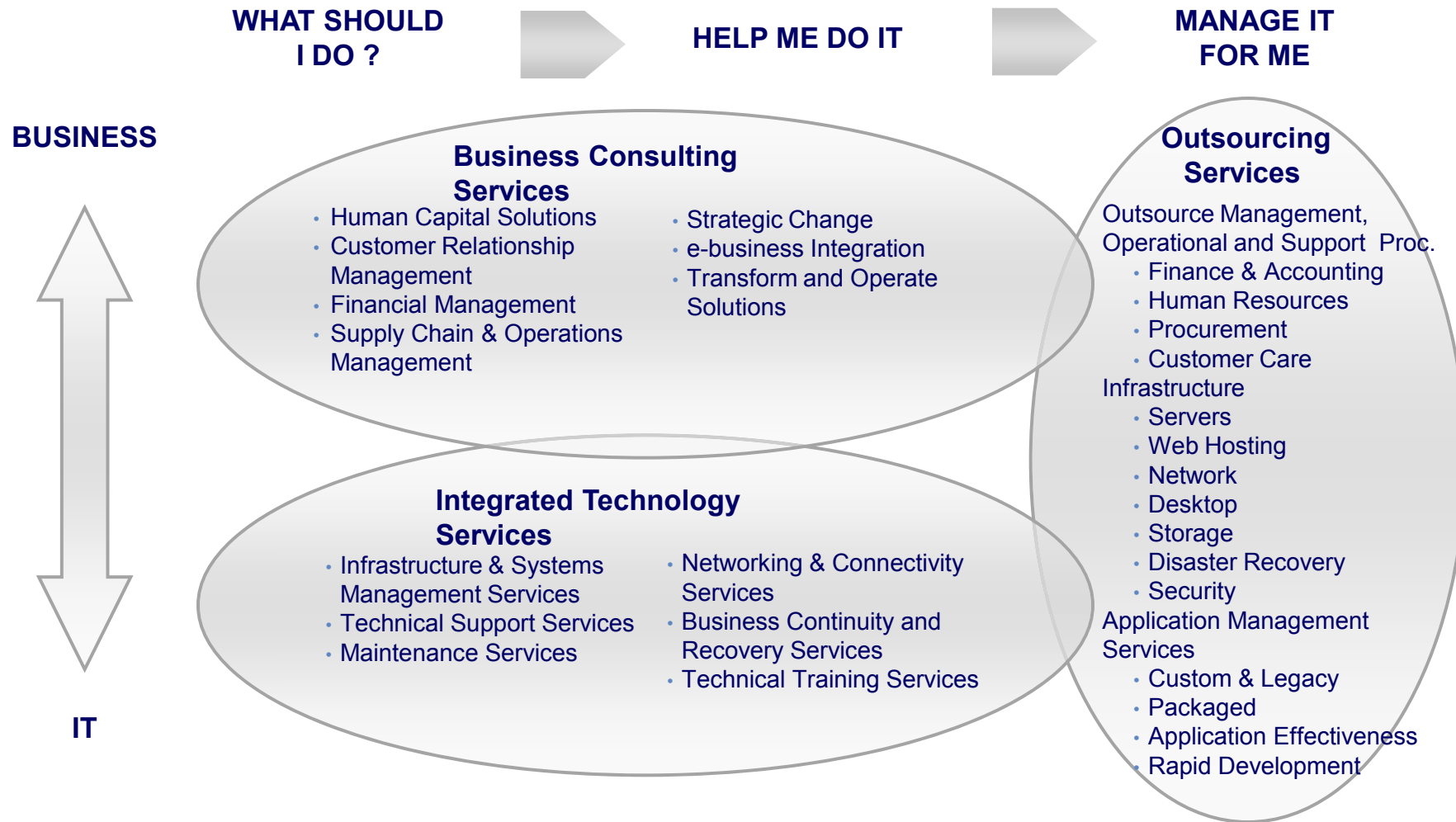## *Drives of Services Transformation*

- ■ **Erosion of margins in core markets**

- ■ **Hardware and related services became commodity with strong competition**

- ■ **Most IBM services was for free – but strong core capabilities existed**

- ■ **Trend to large and complex business solutions**

- ■ **Customer Demand for Integrators – Tired of Unique, Stand-alone Technologies**

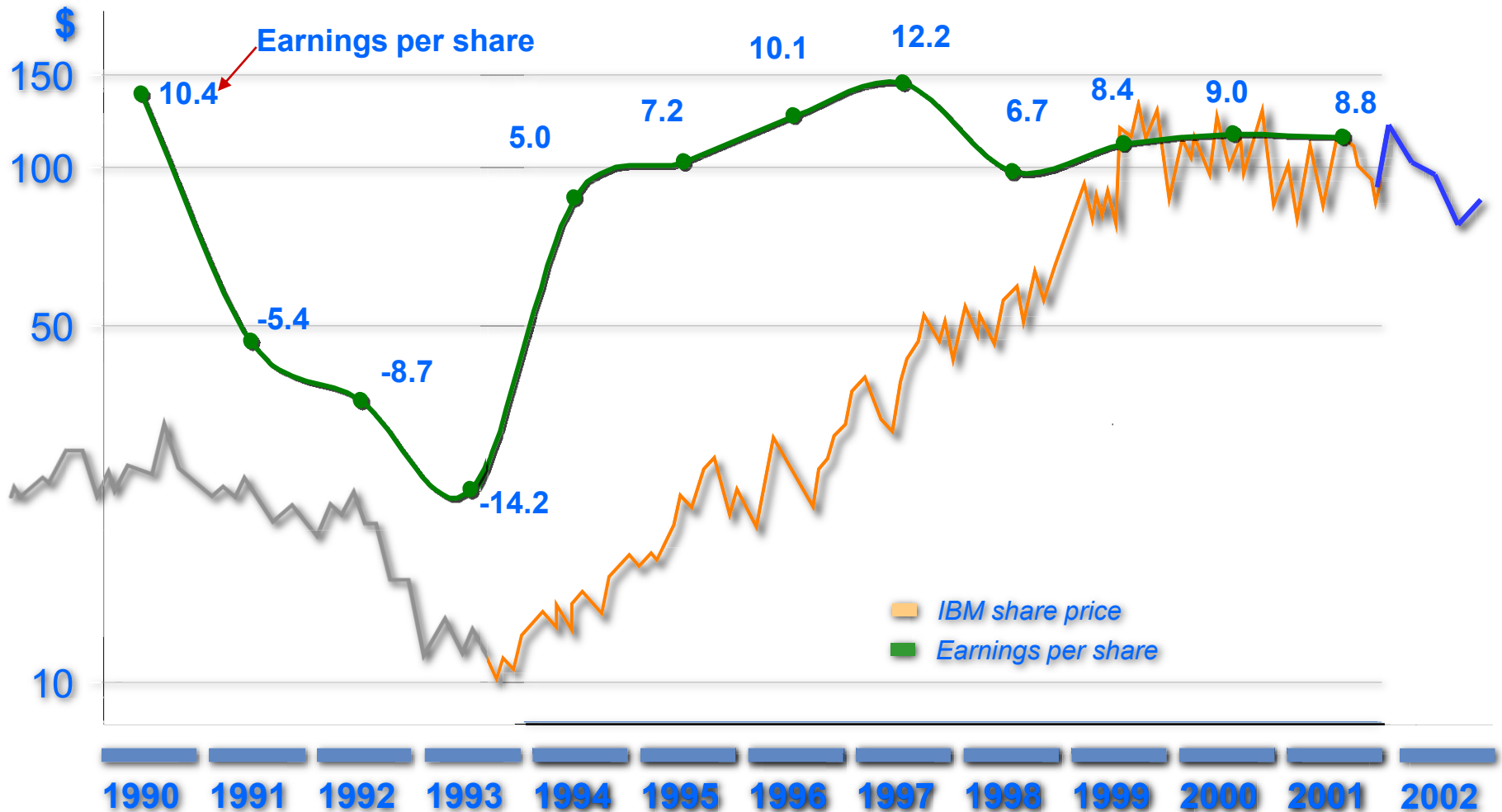# IBM Global Services grew 22% annually for 10 years to become the largest business within IBM

1993 → **2001** → **2003**

1993: 49%, 15%

2001: 39%, 41%

2003: 34%, 48%

Legend: ■ Services ■ Hardware ■ Software □ Others

Global Services has built a portfolio of end-to-end services in response to the market demand

WHAT SHOULD I DO ? → **HELP ME DO IT** → **MANAGE IT FOR ME**

BUSINESS

↕

IT

Business Consulting Services
- Human Capital Solutions
- Customer Relationship Management
- Financial Management
- Supply Chain & Operations Management
- Strategic Change
- e-business Integration
- Transform and Operate Solutions

Integrated Technology Services
- Infrastructure & Systems Management Services
- Technical Support Services
- Maintenance Services
- Networking & Connectivity Services
- Business Continuity and Recovery Services
- Technical Training Services

Outsourcing Services

Outsource Management, Operational and Support Proc.
- Finance & Accounting
- Human Resources
- Procurement
- Customer Care

Infrastructure
- Servers
- Web Hosting
- Network
- Desktop
- Storage
- Disaster Recovery
- Security

Application Management Services
- Custom & Legacy
- Packaged
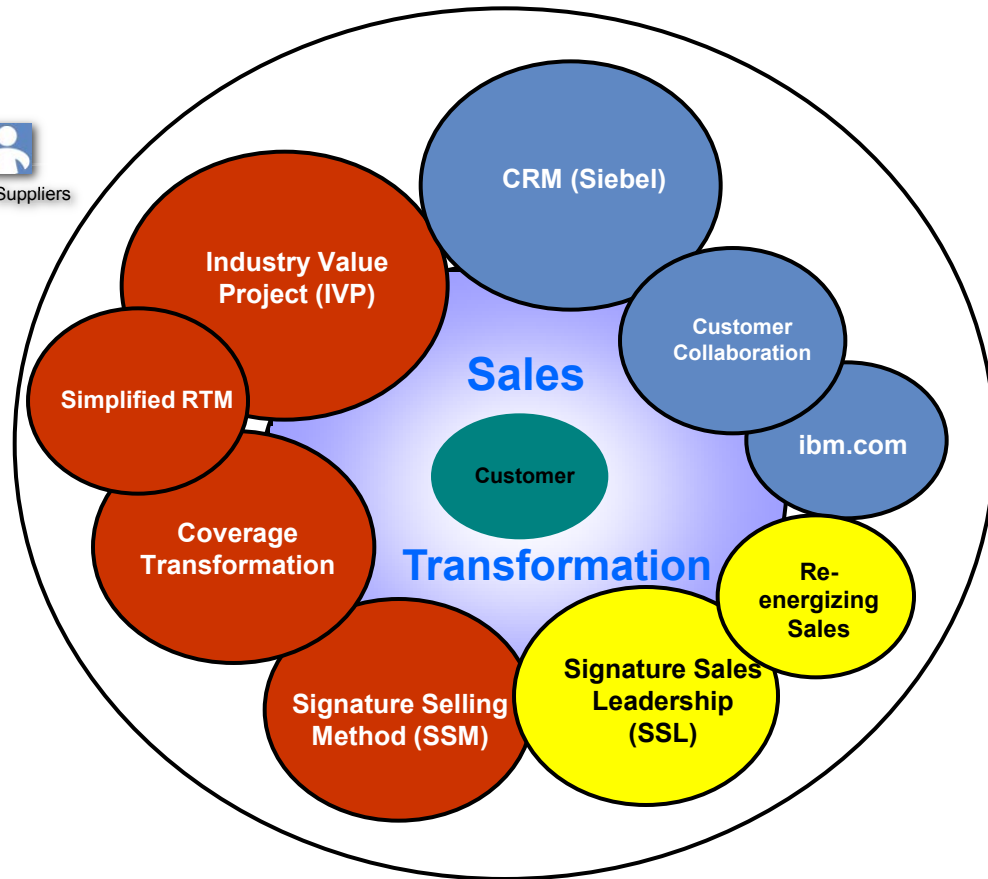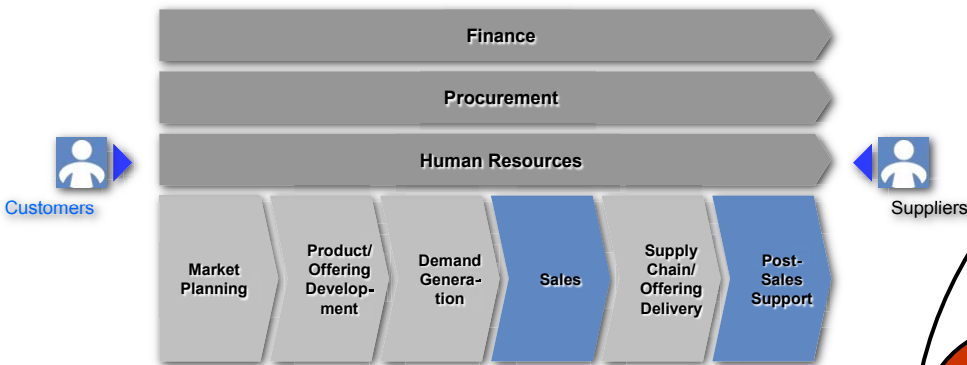- Application Effectiveness
- Rapid Development

The transformation activities have paid off

A Customer Centric Sales Transformation Initiative was launched that contained a portfolio of activities

Value Chain Transformation model

Customers

Finance

Procurement

Human Resources

Suppliers

| Market Planning | Product/ Offering Develop-ment | Demand Genera-tion | Sales | Supply Chain/ Offering Delivery | Post-Sales Support |

= **Process Initiative**

= **Organizational Development Initiative**

= **Technology Initiative**

CRM (Siebel)

Industry Value Project (IVP)

Customer Collaboration

Simplified RTM

Sales

ibm.com

Coverage Transformation

Customer

Re-energizing Sales

Transformation

Signature Selling Method (SSM)

Signature Sales Leadership (SSL)

The IBM transformation provides insight into the key success factors of building a solutions business

"I have worked in services companies and product companies. I will state unequivocally that services businesses are much more difficult to manage…the skills required in managing services processes are very different …the business model is different. The economics are entirely different.

This is the kind of capability you simply can't acquire. The bet you're really making is on your own commitment to invest both the years and capital, then build the experience and discipline it takes to succeed"

-**Louis V. Gerstner,**
"Who Says Elephants Can't Dance"

Commit for long run to business and cultural change
– Services unprofitable for years, divisional boundaries need to be overcome

Invest in people and processes to support them
– Services depend on knowledge and active community

Align resources closely to customer demands
– Build skills and solutions that are customer specific

Stick to core strengths and stay focused on strategy
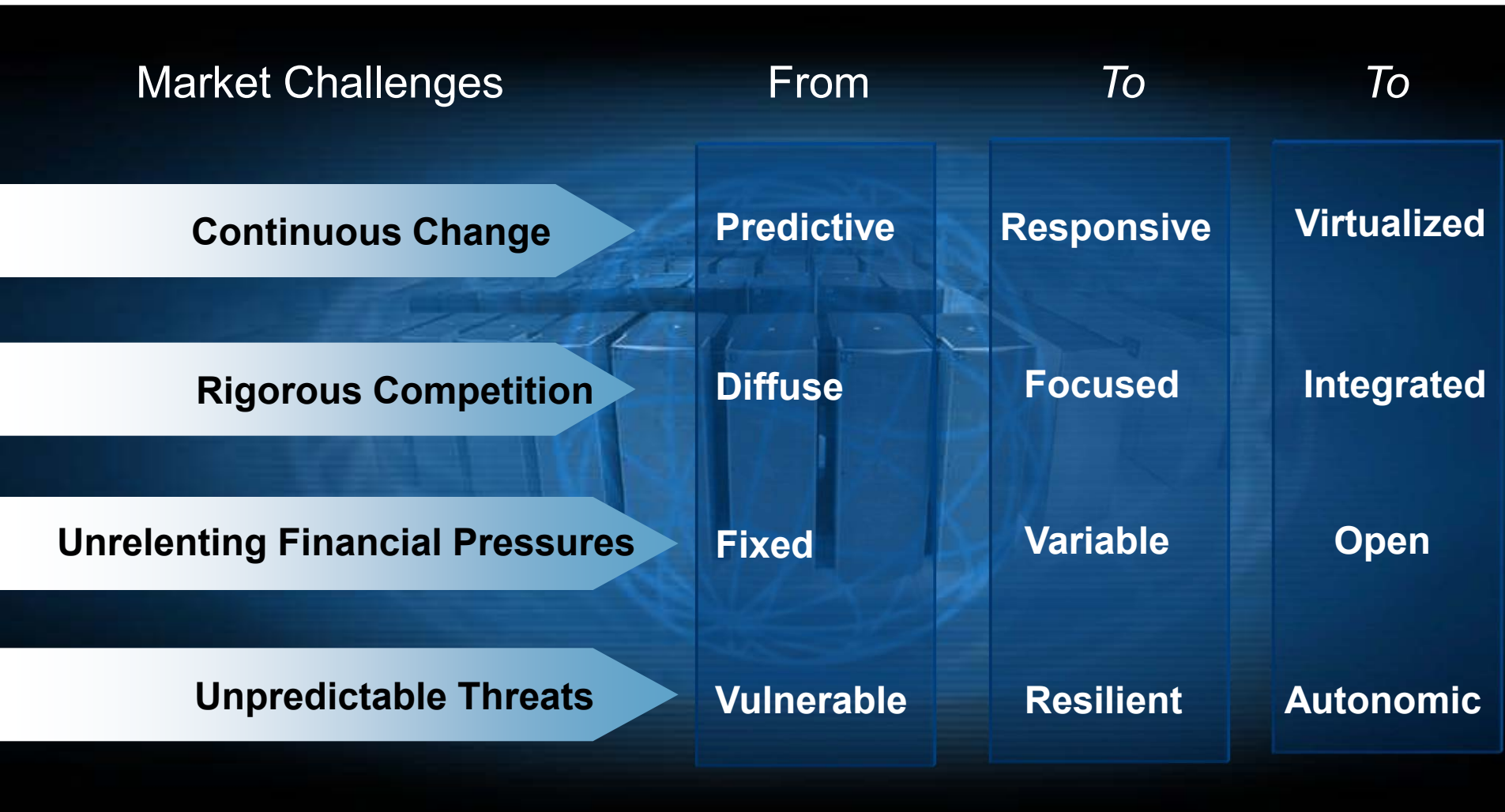– Avoid distractions and understand brand permission

Build and leverage multiple value chains
– Alliances and co-opetition become a way of life

Adapt, anticipate – be quick to innovate
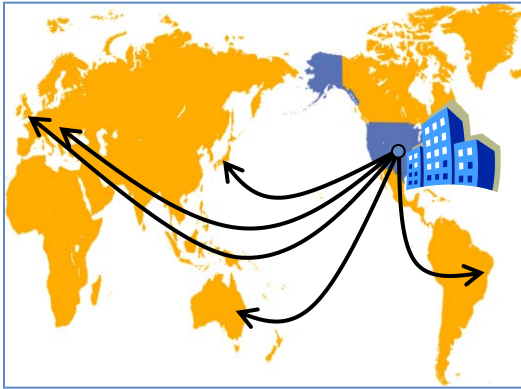– Continuously review, refocus and regenerate portfolio

Traditional models are no match for current realities: Business and IT architectures need to evolve

Market Challenges	From	*To*	*To*
Continuous Change	Predictive	Responsive	Virtualized
Rigorous Competition	Diffuse	Focused	Integrated
Unrelenting Financial Pressures	Fixed	Variable	Open
Unpredictable Threats	Vulnerable	Resilient	Autonomic

A Globally Integrated World asks for a Globally Integrated Enterprise

International

HQ in one country
Sell in many
Export/Import

Multinational

Replicate operations
in many countries
(HQ, R&D, Manu, etc.)

Globally Integrated

Draw on global skills
and global delivery.
Tasks performed in
one location for
customers in many
Countries

C 19th > C 20th > C 21st

IBM's Transformation: An Ongoing Journey

"The crisis in our financial markets has jolted us awake to the realities and dangers of highly complex global systems. But in truth, the first decade of the 21st century has been a series of wake-up calls with a single subject: the reality of global integration." - *Sam Palmisano, Nov. 6, 2008*

Focus Areas

- Shift to high-value solutions
- Move to Values-based culture
- Lowering center of gravity for decision-making
- Becoming premier globally integrated enterprise
- Maintain focus and execute in a radically shifting market
- A Smarter Planet

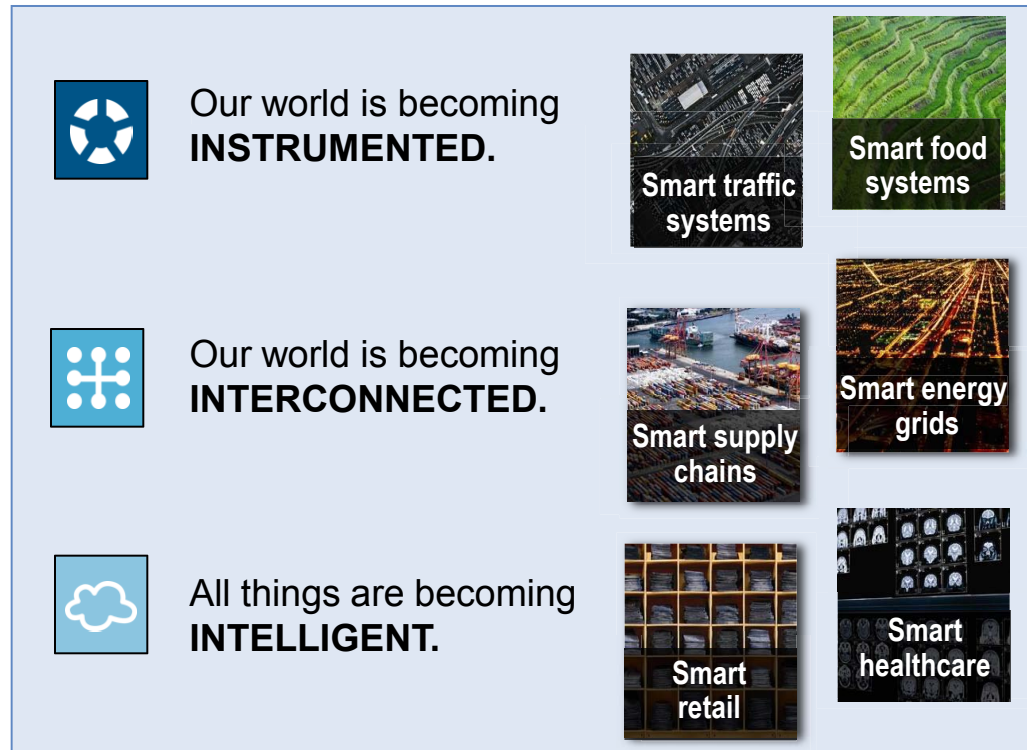1993   1995   1997   1999   2001   2003   2005   2007   2009

Phase Two
Palmisano era ('03 thru present)

1992   2004

IBM Strategy and Values

... Building a Smarter Planet

Focus on open technologies and high- value solutions

Deliver integration and innovation to clients

Become the premier Globally Integrated Enterprise

Our world is becoming **INSTRUMENTED.**

Smart traffic systems

Smart food systems

Our world is becoming **INTERCONNECTED.**

Smart supply chains

Smart energy grids

All things are becoming **INTELLIGENT.**

Smart retail

Smart healthcare

IBMers Value

Dedication to every client's success.

Innovation that matters—for our company and for the world.

Trust and personal responsibility in all relationships.
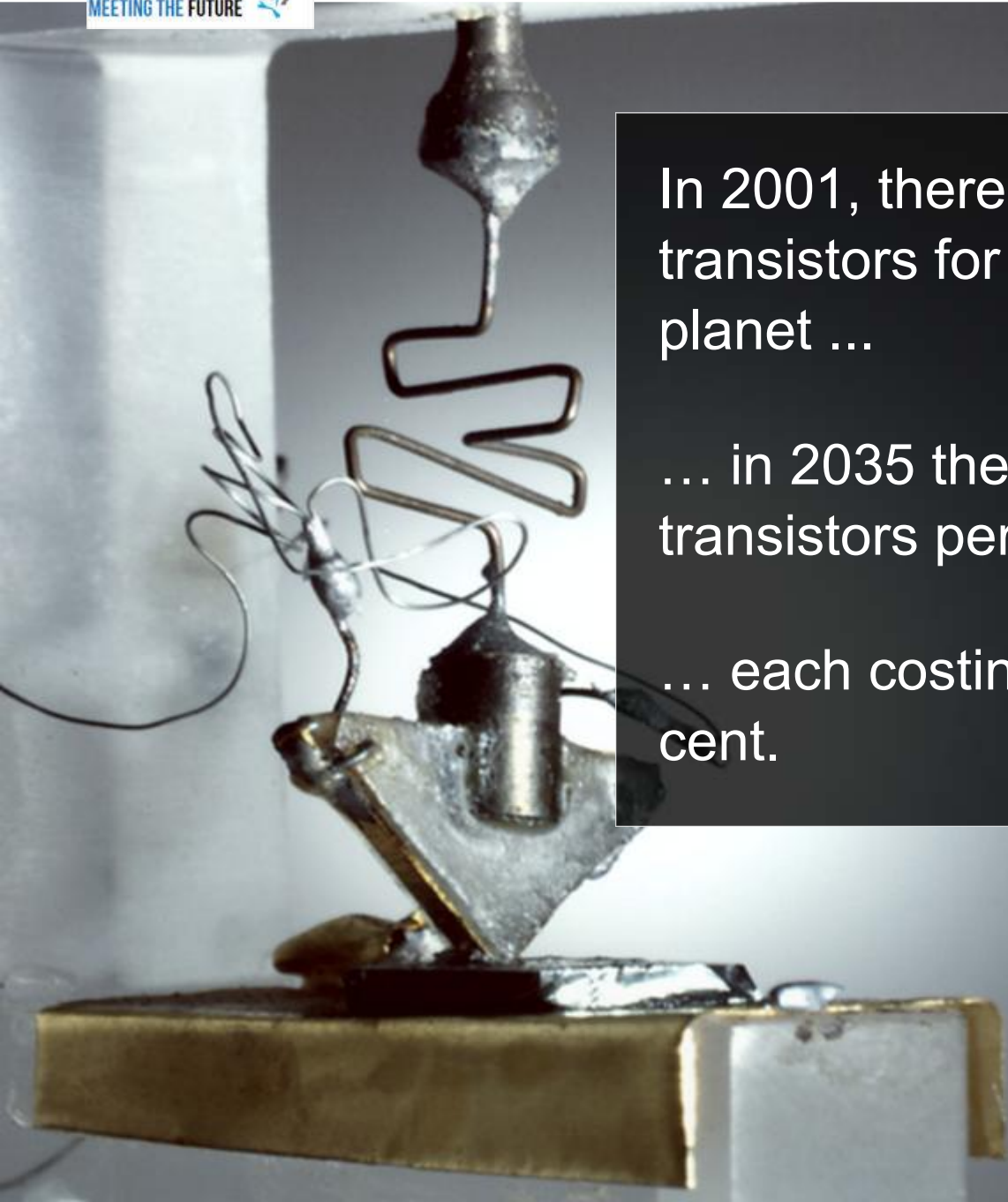
In 2001, there were 60 million transistors for every human on the planet ...

… in 2035 there will be 100 billion transistors per human…

… each costing 1/10 millionth of a cent.

Examples of big data explosions

- Google receives per day 10 years speakrecognition questions

- 400 million tweets per day

- More than 2000 cameras along the Dutch motorways , on Manhatten only there are 20.000 cameras along the streets and avenues

- 3.2 billion likes per day

- 1 billion users of Facebook

- 4 billion movies watched by 800 million users of the internet

- The amount of medical information is doubling every 5 years

- 60 hours of video actions every minute

- 1,85 million security cameras in Great Britain

- 300 million fotos uploaded

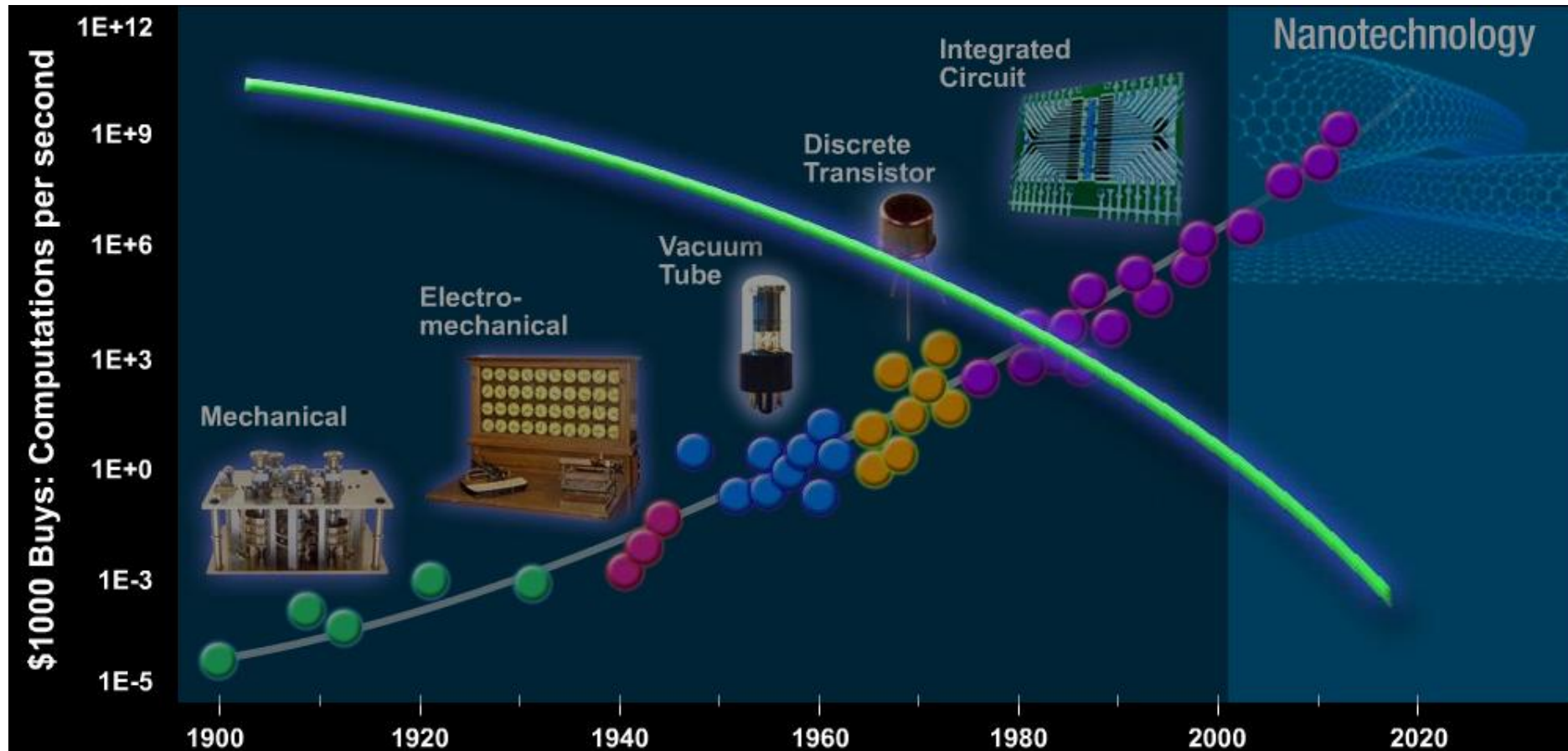- In 2020 24 billion devices will be connected with the internet.

Accelerating Advances in Technology
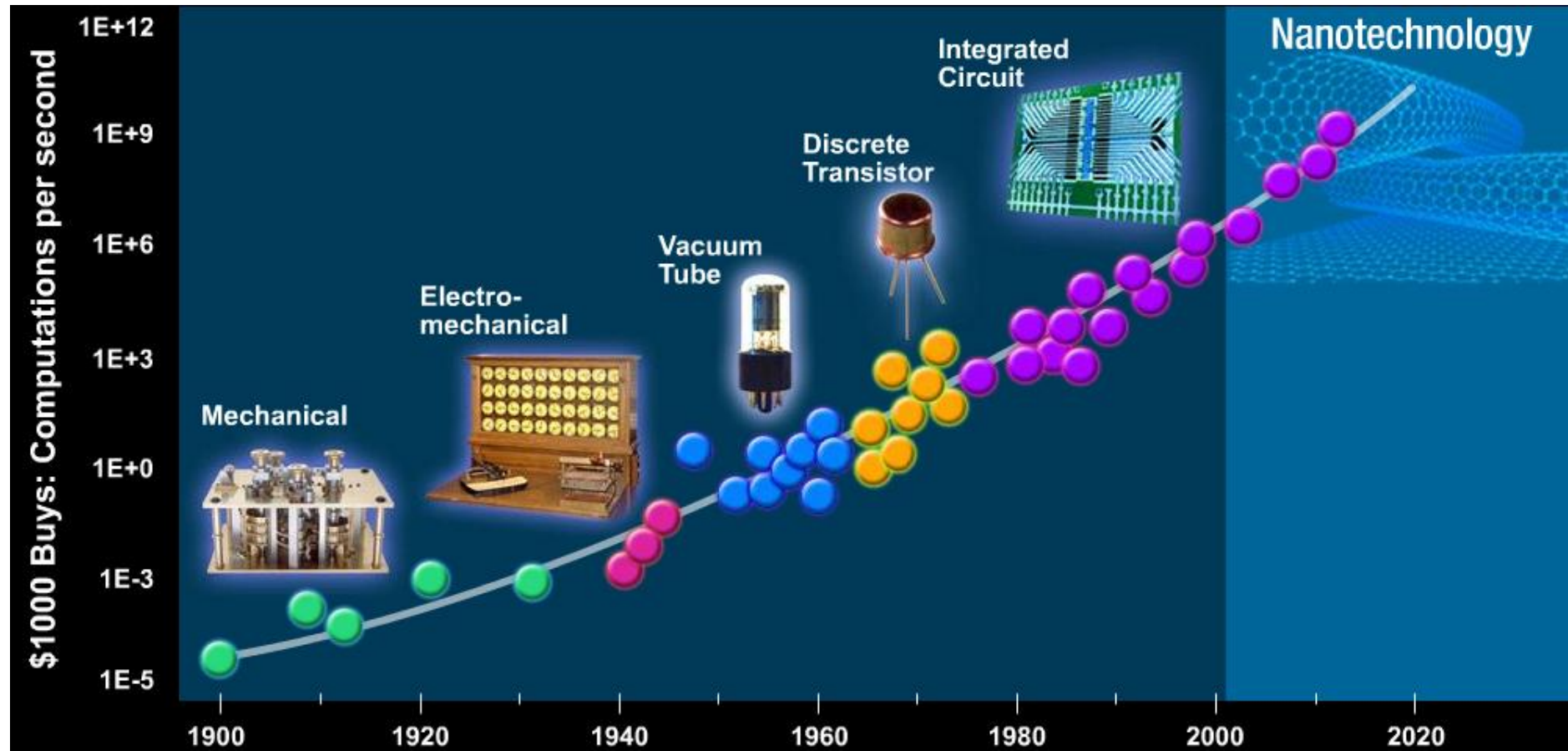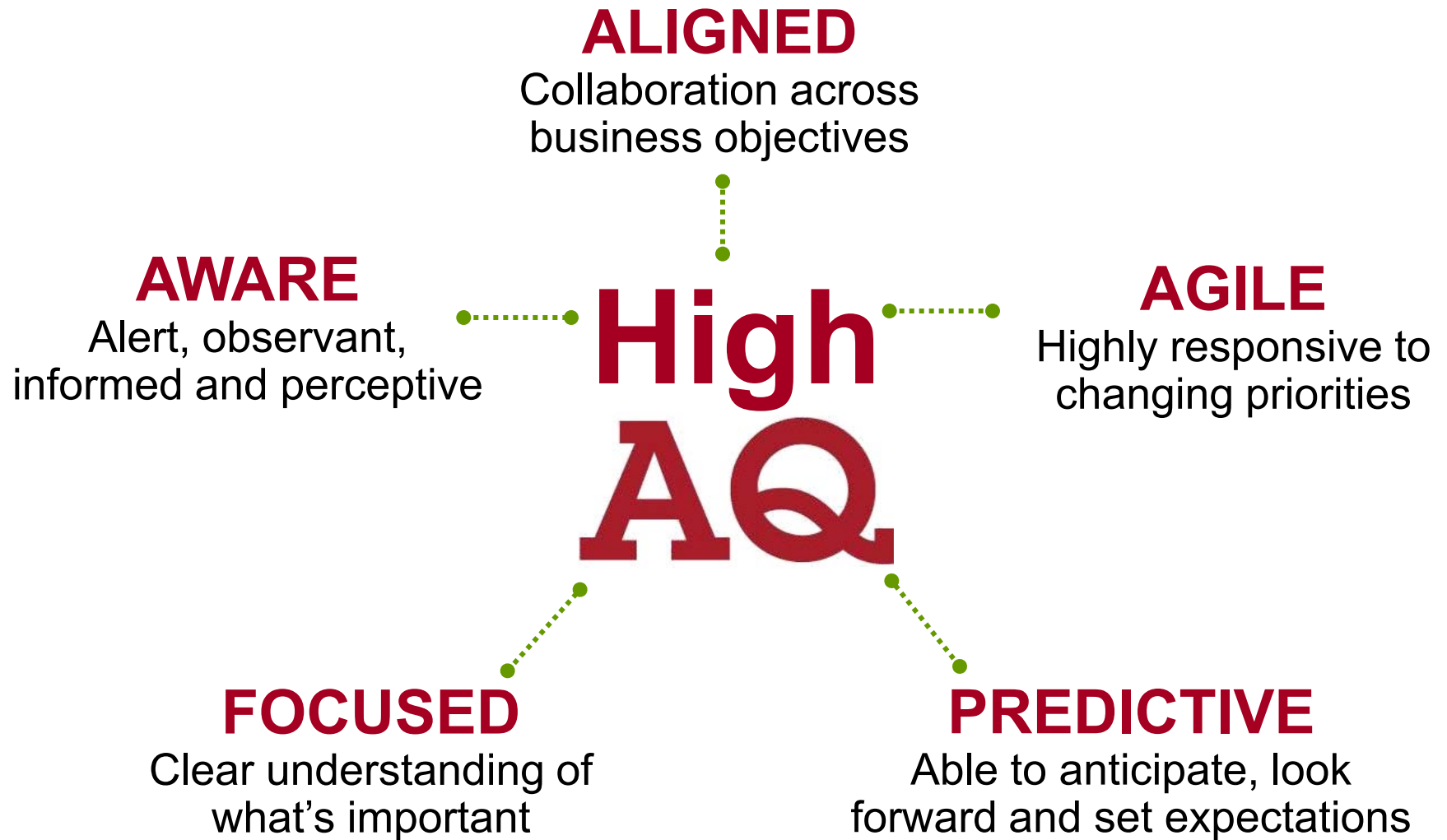

Source: Kurzweil 1999 – Moravec 1998

Accelerating Advances in Technology
Driving Costs Steadily Downward

AQ = Analytics Quotient

$$= \frac{\text{Realized}}{\text{Potential}}$$

The more you infuse analytics into your business, the higher your AQ and the better you and your business will perform

Elementary, My Dear Watson

Can we design a computing system that rivals a human's ability to answer questions posed in natural language, interpreting meaning and context and retrieving, analyzing and understanding vast amounts of information in real-time?

What is Watson?

- A computing system named after our founder Thomas J. Watson.
- Rivals a human's ability to answer questions posed in natural language with speed, accuracy and confidence.
- Leverages the power of IBM Content Analytics to perform lexical analysis as part of natural language processing.
- Harnesses a cluster of IBM's commercially-available POWER7 system optimized to process thousands of simultaneous tasks at rapid speeds.
- Incorporates a number of IBM exclusive technologies for the specialized demands of processing an enormous number of concurrent tasks and data while analyzing information in real time.
- **This is not search**, where a query retrieves a list of links to potential answers based on popularity and page ranking.
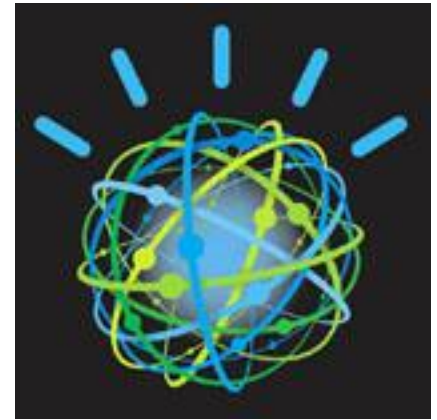
Watson's ability to understand the meaning and context of human language, and rapidly process information to find precise answers to complex questions, holds enormous potential to transform how computers can help people accomplish tasks in business and their personal lives.

We need a different kind of education and a better use of IT to keep , increase and continue success in our beautiful world

Do one brave thing today … then run like hell !

Thank you for your attention

BACK – UP

Innovation @ IBM | Aug 2008

Imagine If You Had All the Answers You Need to Win
IBM Business Analytics and Optimization Solutions Can Ensure That You Do!

Used by Watson

IBM Content Analytics
Natural Language Processing and content analysis leveraging UIMA

InfoSphere BigInsights
"Big Data" analysis (Hadoop)

IBM Power Systems
Thousands of parallel processes

Workload Optimized Systems
Integrated, Optimized by Workload *such as the Smart Analytics System*

Related Innovations

InfoSphere Warehouse DB2, Informix, Netezza
Aggregating and storing data and content

InfoSphere Streams
Massively parallel analysis

Business Analytics
BI, Predictive Analytics and more

ECM Solutions
IBM eDiscovery Analyzer
IBM Classification Module
IBM OmniFind Enterprise Search

IBM Global Business Services
Research, expertise and analytical assets

Big Data Example: The 360   Multi-Channel Customer Sentiment Analysis

Business Processes

Events and Alerts

Big Data Platform

Internet Scale Analytics

Streaming Analytics

Website Logs Social Media

Call Detail Reports (CDRs)

Master Data Management

Campaign Management

unica
An IBM Company

Cognos Consumer Insight

Web Traffic and Social Media Insight

Information Integration

**Data Warehouse**

Call Behavior and Experience Insight

Summary

- Our customer are outperforming and have a high "AQ"
- They are advancing their journey by upping their:
  - Decision-making savvy
  - Readiness and capacity to leverage analytics across critical roles and processes
  - Mastery of information
- We are delivering a comprehensive, unified business analytics system that meets both the growing demands of the business user, while enabling Finance and IT to deliver the appropriate level of enterprise governance and control
- IBM Business Analytics empowers:

  All People

  …for All Decisions

  …with Analytic Freedom
- Only IBM can enable <u>total</u> solutions…*now and in the future*

What's Your AQ?

IBM Business Analytics

There has been a change in the world
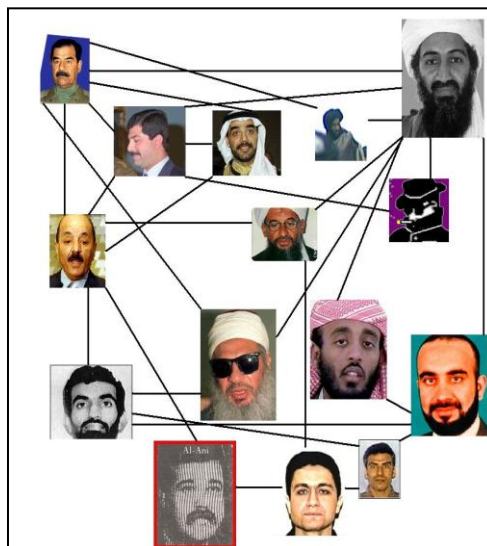
- President 2.0
  - Barak Obama becomes first African-American President of the United States after a campaign promising **Change**

- War 2.0
  - Al Queda is "Enemy #1" worldwide, representing a **Change** in the way wars are fought
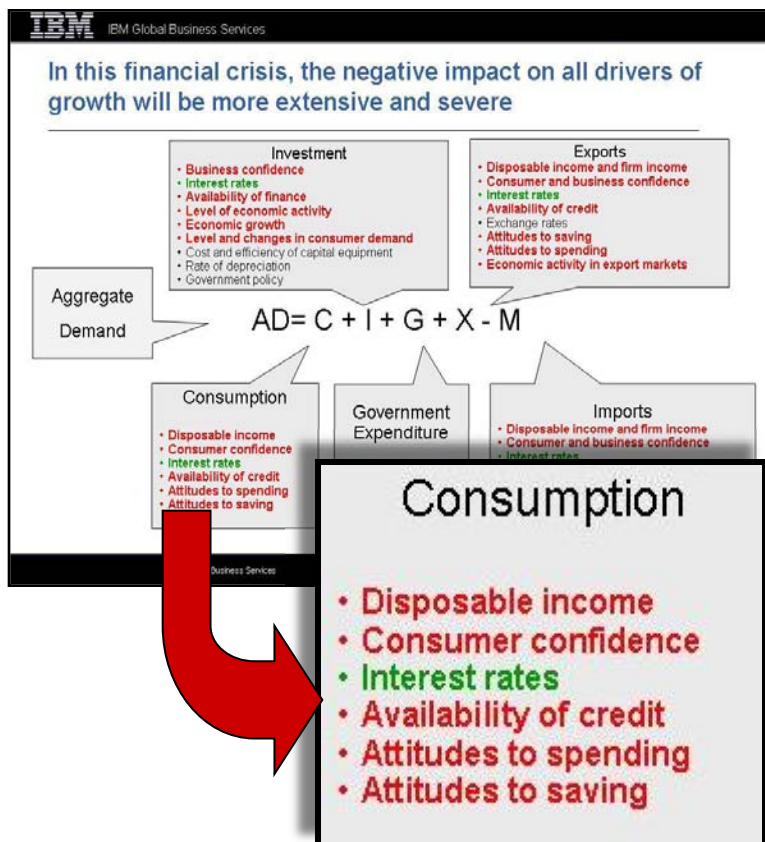
- Web 2.0
  - The internet goes through a **Change** and becomes a social network platform, connecting people like never before

And now we are undergoing Economic Change . . .

These economic changes impact companies

Economic Change

IBM IBM Global Business Services

In this financial crisis, the negative impact on all drivers of growth will be more extensive and severe

$$AD = C + I + G + X - M$$

Consumption
· Disposable income
· Consumer confidence
· Interest rates
· Availability of credit
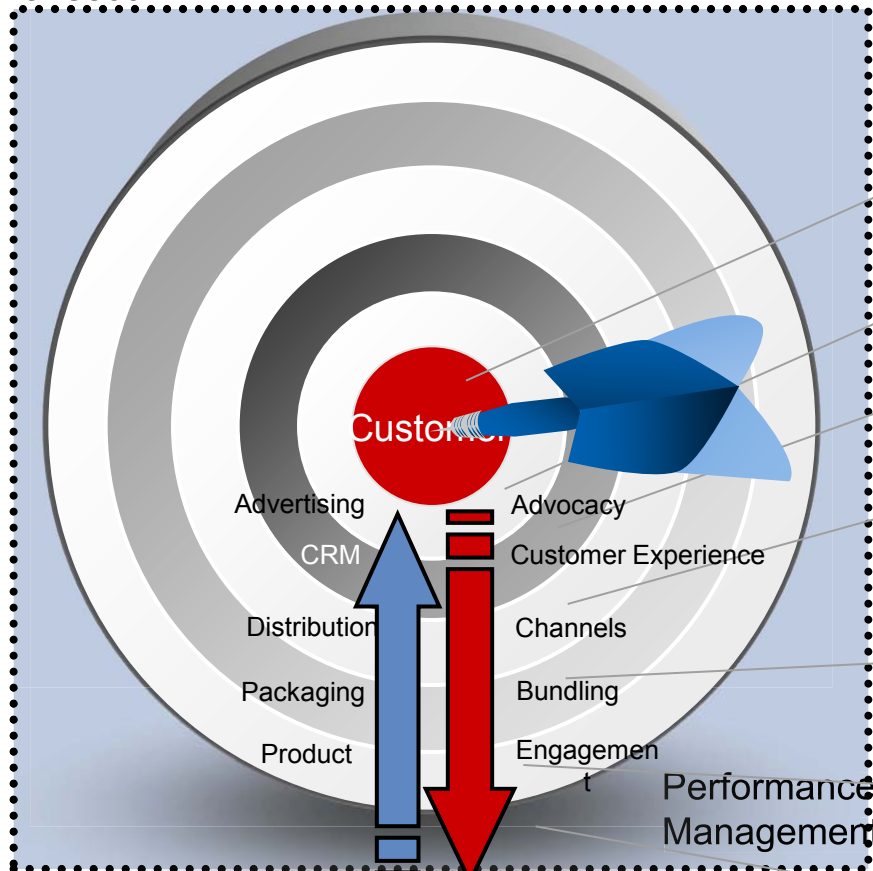· Attitudes to spending
· Attitudes to saving

Corporate Response

Cost Takeout

- Shrink unprofitable segments
- Reduce marketing costs
- Reduce service costs
- Reduce labor and operating costs
- Reduce cost of sales
- Reduce R&D cost and risk
- Identify new cost takeout opportunities

The Change from "You Sell" to Customer 2.0

The direction of marketing processes become two-way, opening up new opportunities for Cost Takeout

Customer Management Opportunities

Cost Takeout

Customer

Advertising

CRM

Distribution

Packaging

Product

Advocacy

Customer Experience

Channels

Bundling

Engagement

Performance Management

New marketing interacts with consumers to understand and meet their needs consumers
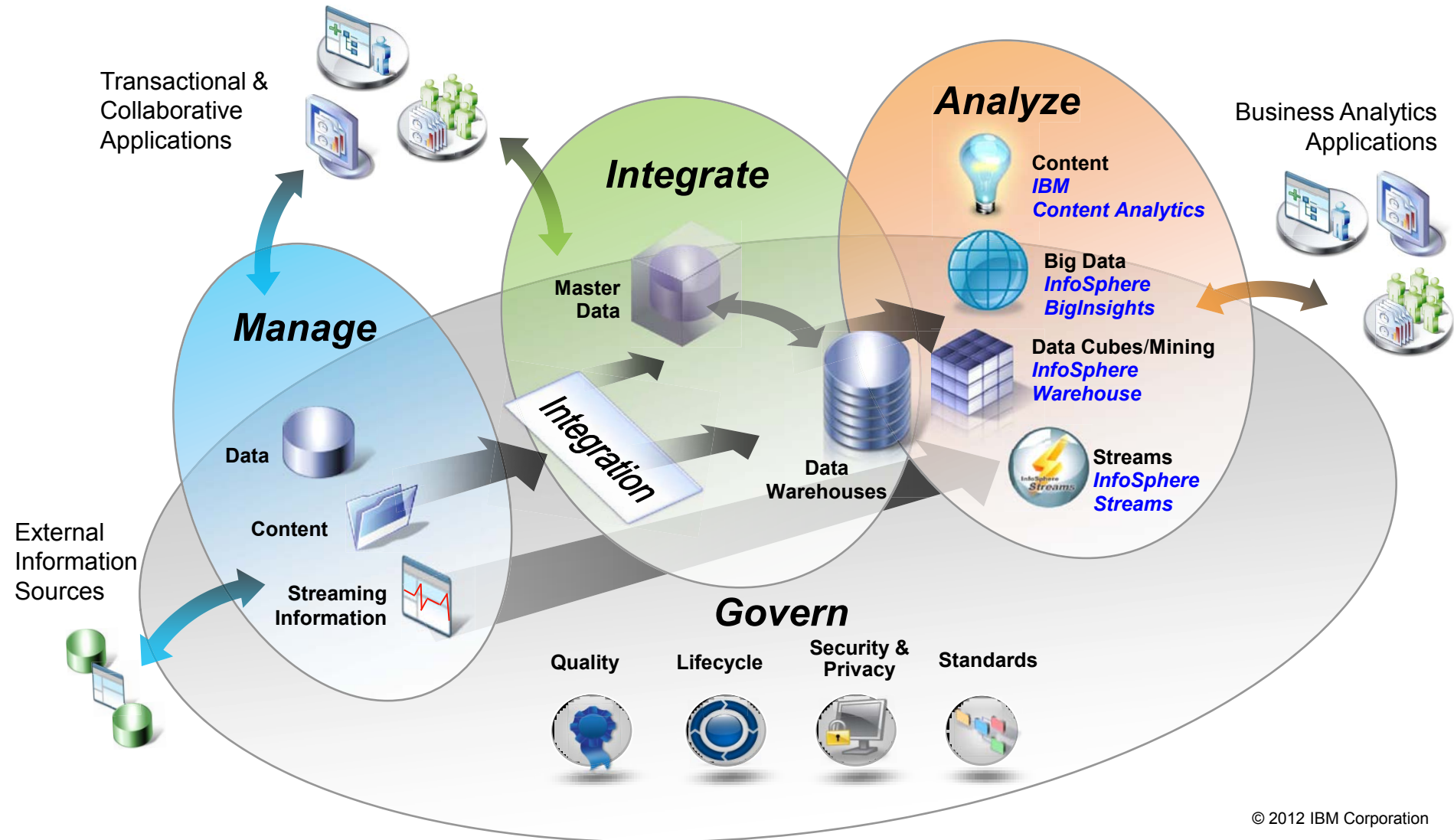
Customer Management Opportunities	Cost Takeout
Create improved customer insight that generates revenue	**Shrink unprofitable segments**
Harness word-of-mouth and rely less on advertising	**Reduce marketing costs**
Streamline processes to improve customer service models	**Reduce service costs**
Determine good paths to migrate customers to reduced cost channels while improving the customer experience	**Reduce labor and operating costs**
Increase sales productivity and provide value to customers by bundling products and services	**Reduce cost of sales**
Engage customers through digital channels and communities	**Reduce R&D cost and risk**
Monitor the right metrics to spot potential issues	**Identify new cost takeout opportunities**

# Delivering trusted information for smarter business analytics

Transactional &
Collaborative
Applications

Analyze

Integrate

Content
*IBM
Content Analytics*

Business Analytics
Applications

**Master
Data**

Manage

Integration

Big Data
*InfoSphere
BigInsights*

Data Cubes/Mining
*InfoSphere
Warehouse*

Data

**Data
Warehouses**

Streams
*InfoSphere
Streams*

Content

External
Information
Sources

**Streaming
Information**

Govern

Quality   **Lifecycle**   **Security &
Privacy**   **Standards**

Next Best Action Decisioning Flow

Value Tiers

Micro-Cluster:1	Micro-Cluster:3
Micro-Cluster:2	Micro-Cluster:N

Existing customer classification

24% New	Gold 25%
Uncommitted 9%	Silver 31%
Lapsed 11%	
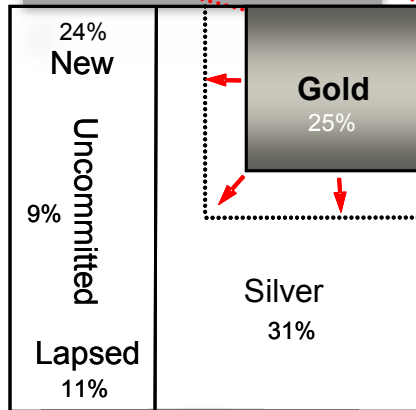
Clustering & Segmentation

Priors

"Remember Me"
How has the customer engaged in the past?

Analytics we customize

Bayesian Network

Posteriors

"Relevant Action"
Highest probability action bet accounting for Priors and current Conditions.

Complex Event Processing

Conditional

"Recognize Me"
How is the customer interacting right now?

Event processing tools we bring

Decisions we model

Decision Trade-off

(ActionEngine)

Actions, messages, offers are pieced together based on Posterior bet.

Action Repository

(Activities or Actions)
Exact 'action' is aligned with appropriate assets (creative, copy, scripting, 'hot button', etc.)

API

Knowledge database we codify

Objects we bring

Call Center **Internet** **Mobile**

API's we develop

Channel or Device Execution

The Future of Industry Transformation

Watson represents the ability to gain meaningful insights from massive amounts of data, confidently make decisions, and make sense of structured and unstructured data (such as natural language). Beyond Jeopardy!, the technology behind Watson can be adapted to solve problems and drive progress across many industries:

See next page >>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Healthcare:
Growing volumes of structured text, including medical records containing non-standard data formats, are untapped. Physicians are battling information overload, which can contribute to inaccurate or incomplete diagnoses. There is a growing demand to integrate information and apply analytics to improve healthcare quality and reduce costs.

Technical Support and Contact Centers:
Contact center representatives and tech support providers are overwhelmed with content. The ability to automatically analyze disparate sources of natural language content would help technicians identify the best information to assist users most efficiently and effectively.

Enterprise Knowledge Management:
Governments and businesses worldwide manage huge amounts of internal and external data. It is difficult to provide key information where and when needed for decision-making. Technology can help manage this complexity by handling vast quantities of natural language content to provide for and even anticipate a user's information needs.

Getting Started: Lay the foundation for tactically increasing sales pipeline

Call to Action:

Engage with your clients and prospects to educate them on Watson, and the possibilities Watson's capabilities present for their businesses

Set the agenda with clients about the need for workload optimized systems, ECM, analytics, "Big Data" management and how applying these technologies can transform businesses

Work with your sales leaders to invite clients and prospects to participate in Jeopardy! Watch Events, and visit IBM Labs, and Briefing Centers

Resources:

Educate yourself and your clients with video, articles

- YouTube Videos
- Watson Overview Package
- Watson External Site

Download papers to use with clients as door-openers and leave-behinds

- **Solution Briefs** (2 pgs each)
  - Watson and BAO
  - Watson and Workload Optimized Systems
  - Watson and Industry Transformation
- **High Impact Collateral**

Watch Watson play on Jeopardy! with your clients

Invite clients to a Jeopardy! viewing party in designated cities

Event in a Box- to organize your own viewing event

THE END