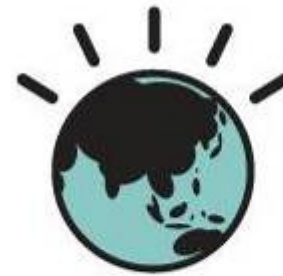**IBM ASEAN Leadership Exchange**
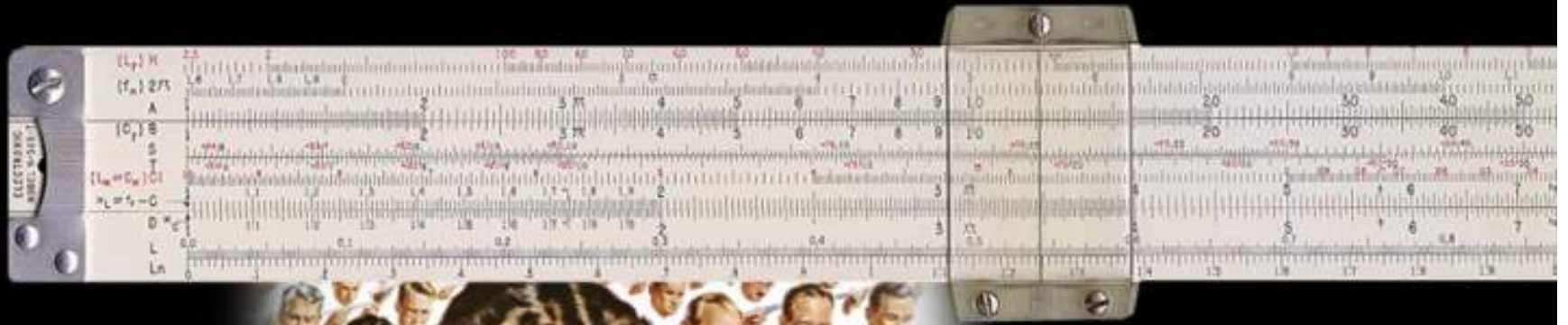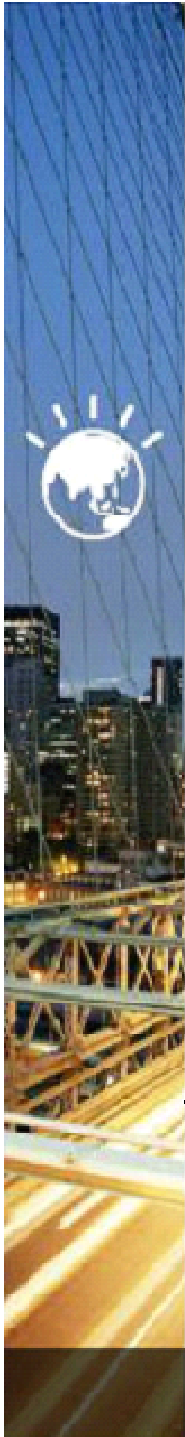
Creating Real Value through Innovation, Transformation and Continuous Change
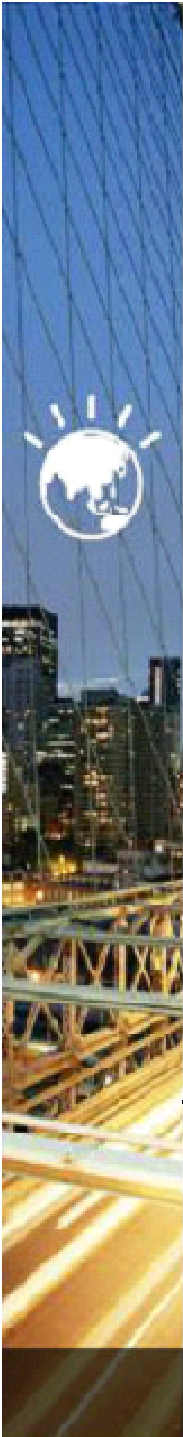
Nick Donofrio
IBM Fellow Emeritus
IBM Executive Vice President,
Innovation and Technology (Ret.)

Information Technology
State of the Art, Circa 1960s

Accelerating Advances in Technology
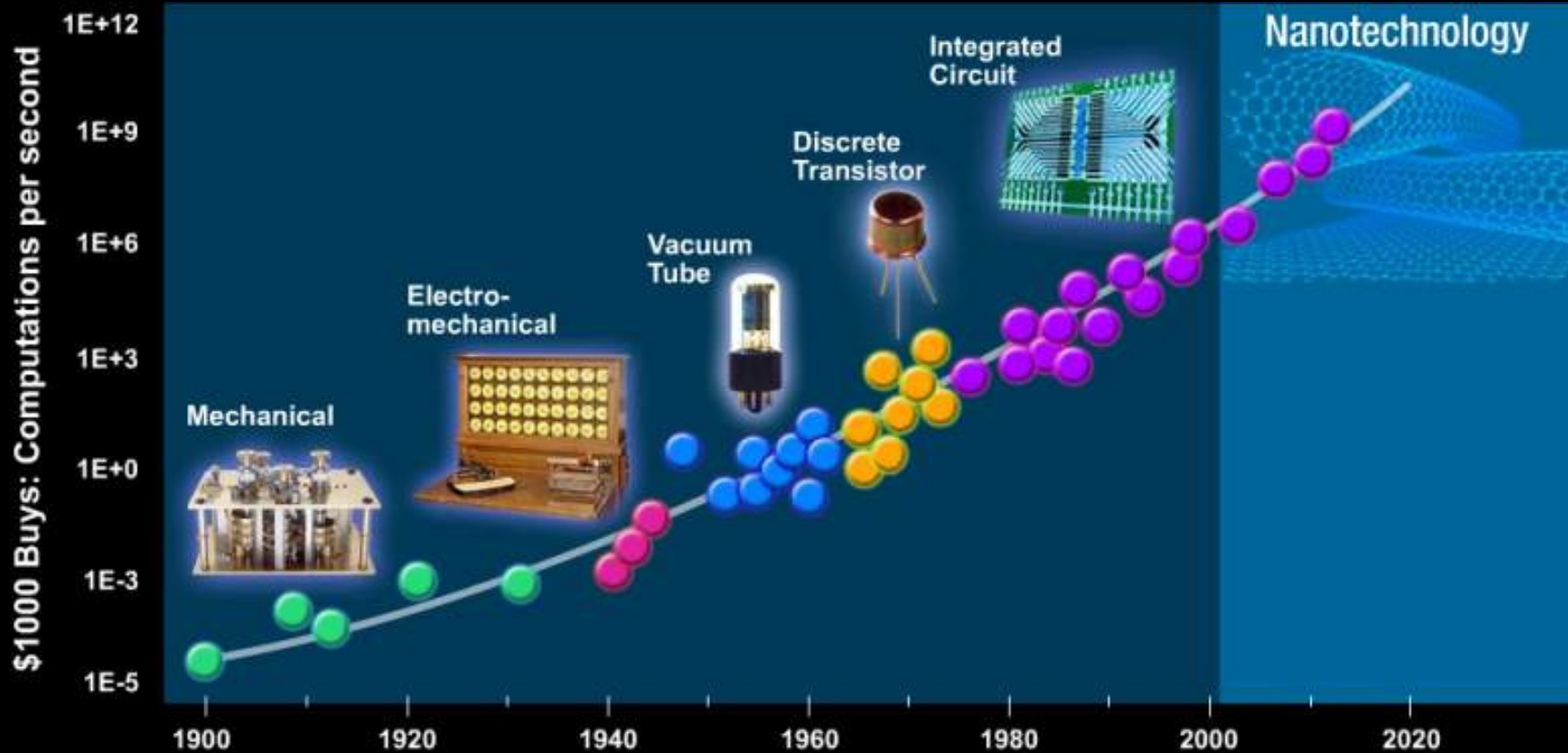
Accelerating Advances in Technology
Driving Costs Steadily Downward
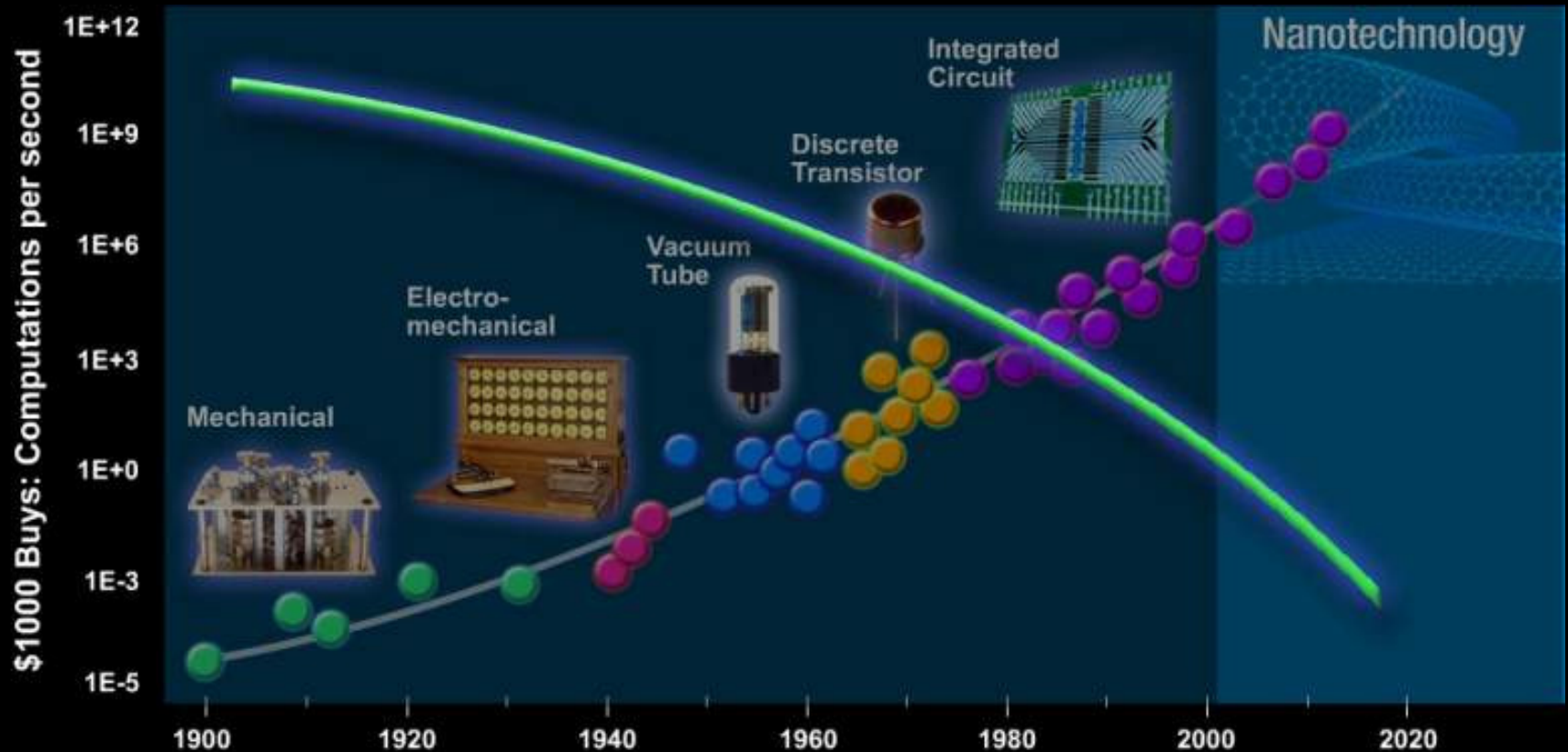
Today's Overarching Realities
21st Century Drivers of Change

Network Ubiquity
More than a billion Internet users and
three billion wireless subscribers worldwide

The Rising Tide of Globalization
Economics, Expertise, Openness

Innovation
Combining technology with
insight to create new value

IBM.

Network Ubiquity
Everyone and Everything is Connected

A million businesses

A billion people

A trillion devices

The Globally Integrated Enterprise…
… Business Without Borders
Driven by the Globally Integrated Economy

21st Century

The Changing Nature and Scope of Innovation

Open

Collaborative

Product and Services Innovation
Process Innovation
Business Model Innovation
Management System Innovation
Societal Innovation

Multi-disciplinary

Global

educate next-generation innovators
deepen science and engineering skills
explore knowledge intersections
equip workers for change
support collaborative creativity
energize entrepreneurship
reward long-term strategy
build world-class infrastructure
invest in frontier research
attract global talent
create high-wage jobs

INNOVATEAMERICA

NATIONAL INNOVATION INITIATIVE SUMMIT AND REPORT
thriving in a world of challenge and change

Council on Competitiveness

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National Innovation Initiative

Talent	*Investment*	*Infrastructure*
• Develop a diverse, world class, next-generation of innovators	• Help markets place top value on long-term innovation strategies	• Create world-class infrastructures, including transportation, information, healthcare and energy
• Establish a National Innovation Prize	• Establish incentives to increase early-stage investment in small-business innovation	• Drive regulatory and legal systems to better support innovation and entrepreneurship
• Make the US a magnet for the best global talent	• Invest to accelerate innovation in the services economy	• Build a system that protects the rewards of IP, but that also encourages open collaboration

Establish innovation metrics for the knowledge economy, not the industrial economy

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Established Innovation Ecosystems
Positioning to Compete in the Global Economy
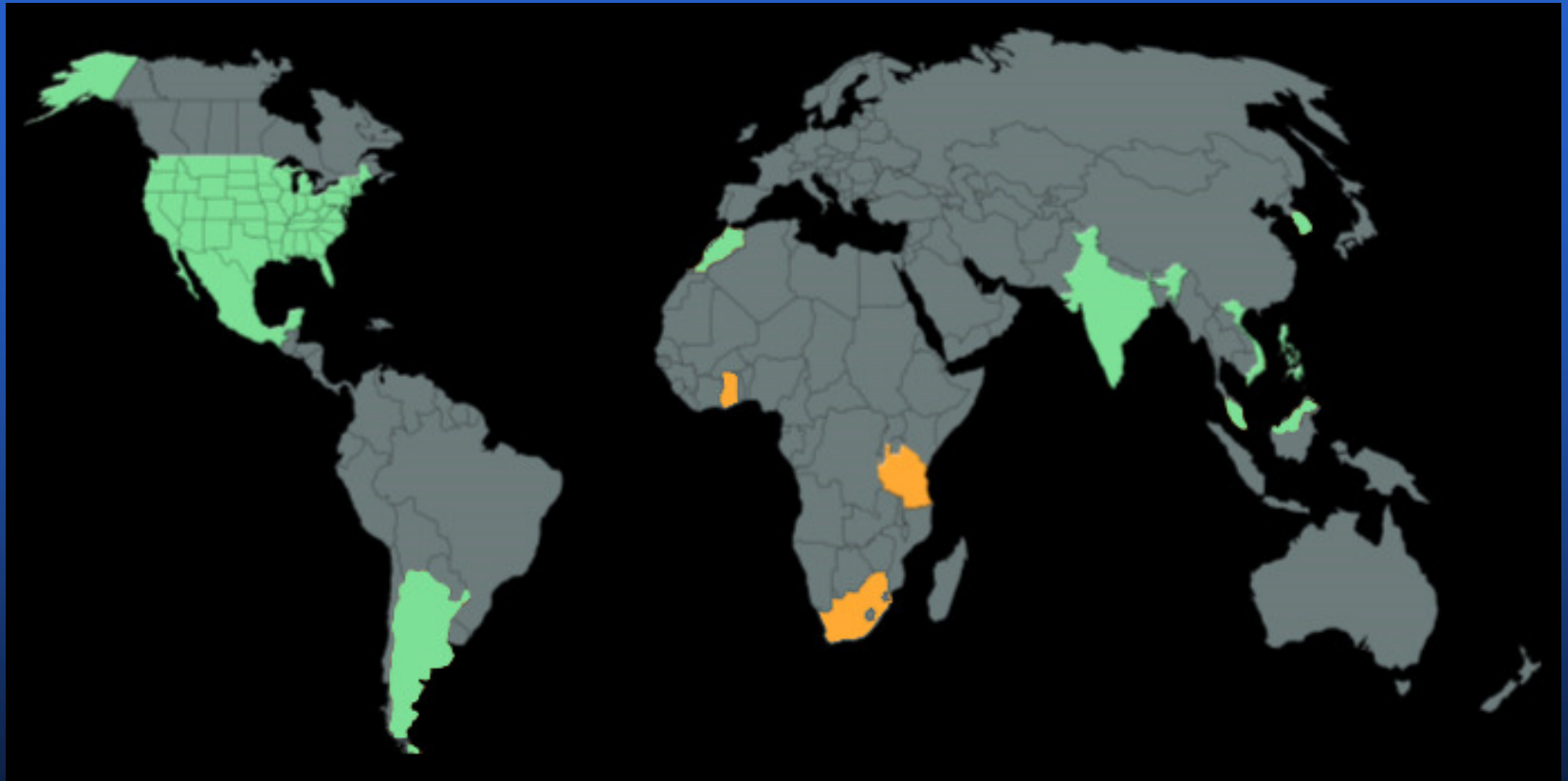
■ NII Initiatives Launched

■ NII Initiatives Formulating

Through the '70s and into the '80s, IBM experienced strong growth and performance

Revenue (in billions)

Net Income (in billions)

Employees (000Ks)
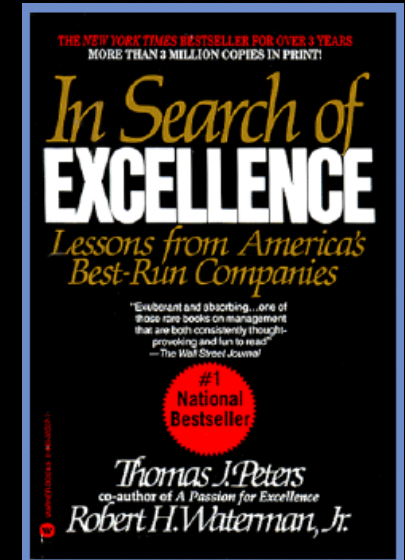
IBM hailed as one of America's 'most admired' and 'best-run' companies

In the late '80s and early '90s - we had failed to respond to dramatic changes in the market…

Revenue
(in billions)

$70
$68
$66
$64
$62
$60

`90          `93

Net Income
(in billions)

$7
$5
$3
$1
-$1
-$3
-$5
-$7
-$9

`90          `93
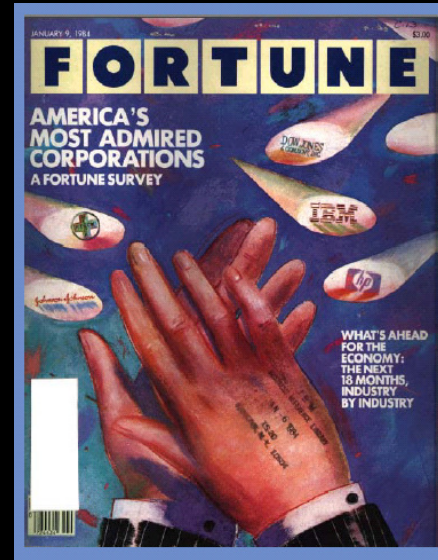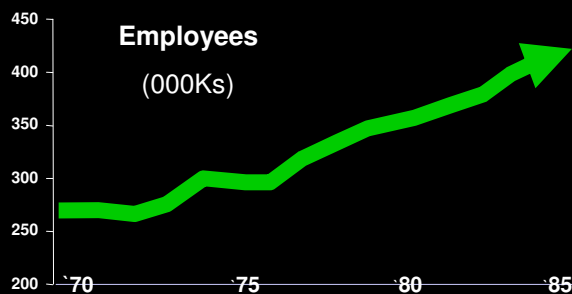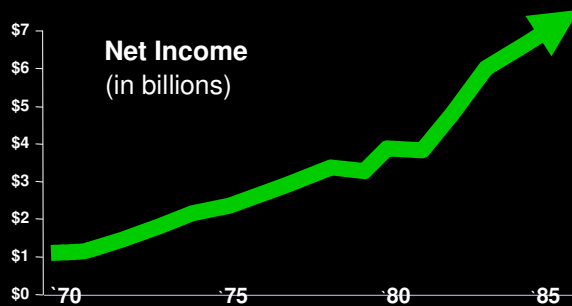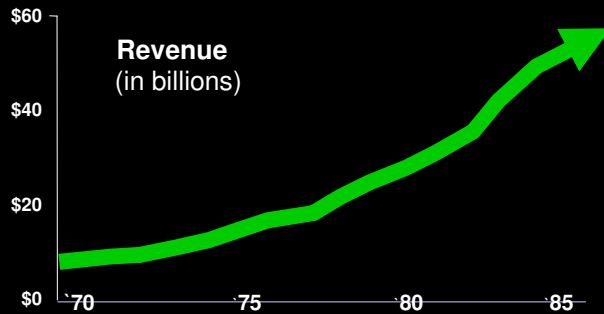
400
350
300
250
200

`90          `93

IBM's 4th-Quarter Deficit Hit a Record $5.46 Billion

Operating Loss of $45 Million Is the Company's First; Outlook Remains Poor

8/16/87
Stock price:
$172

Signing Off

Akers Quits at IBM Under Heavy Pressure; Dividend Is Slashed

Outsiders Will Lead Search For New Chief Executive To Be a 'Change-Master'

But Who'd Want This Job?

WHY DRUG PRICES WILL FALL • EUROPE'S SLUMP • TALKING TO COMPUTERS

FORTUNE

DINOSAURS?

The decline of these three giants is the biggest what-went-wrong story in U.S. business history. There are lessons here for everybody.

BY CAROL J. LOOMIS
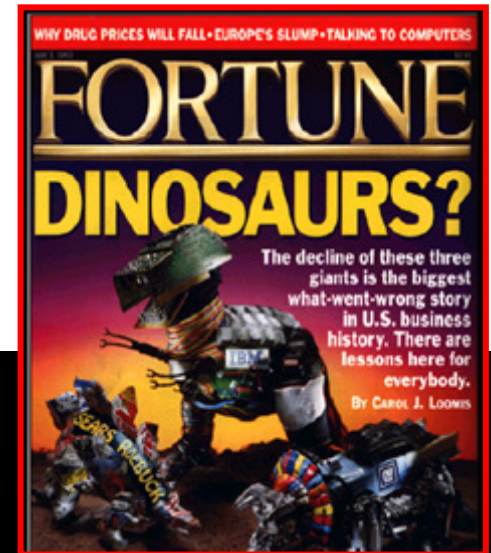
8/16/93
Stock price:
$40.63
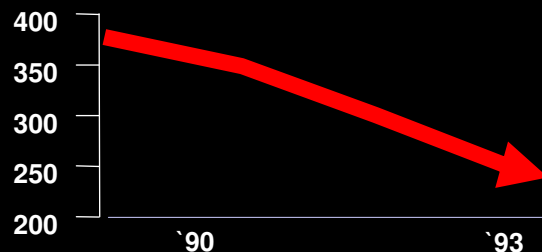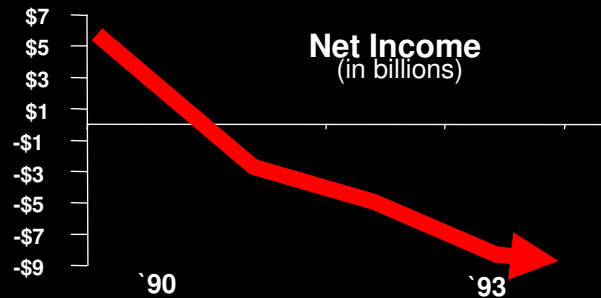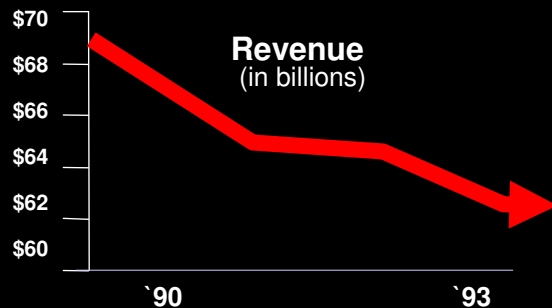
IBM

IBM's transformation: An ongoing journey

From regaining client and shareholder confidence during the "burning platform" days of the early '90s to building a new model for growth in the 21st century, IBM has **more than a decade of deep experience in business transformation**

- Keeping company together & stabilizing business

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

- From country to global brand P&L statements

- Move to integrated solutions

- Dramatic growth in services

- Shift to high-value solutions

- From vertical functional processes to common global processes

- Move to Values-based culture

- Lowering center of gravity for decision-making

- Becoming premier globally integrated enterprise

1993   1995   1997   1999   2001   2003   2005   2007

Phase One
Gerstner era ('93 thru 2002)

Phase Two
Palmisano era ('03 to present)

IBM.
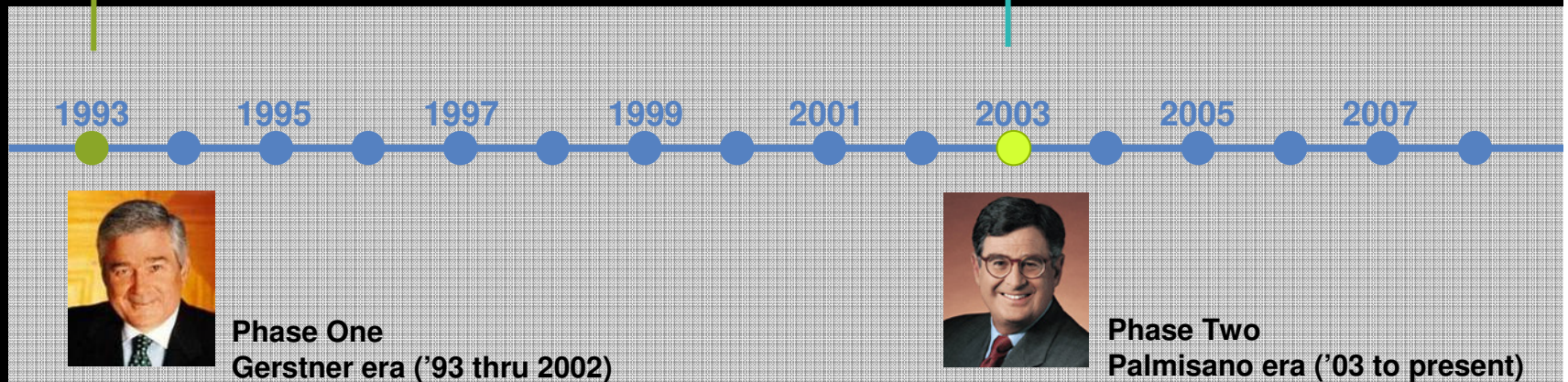
IBM's Ongoing Transformation Journey

Business Model, Operating Model and Workforce Transformation

Remixed our portfolio toward services, software, and integrated solutions…

- Exited commoditized businesses:
  - PCs
  - Hard disk drives
  - Printing Systems

- Strengthened position in:
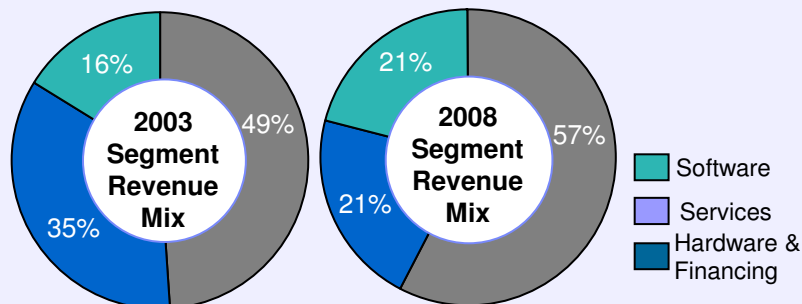 - Business Consulting
  - Service-Oriented Architecture
  - Information on demand
  - Virtualization
  - Open, modular systems

- Acquired over 60 companies in last 5 years
  - to complement and scale our portfolio of products and offerings

2003 Segment Revenue Mix
- 16%
- 49%
- 35%

2008 Segment Revenue Mix
- 21%
- 57%
- 21%

- Software
- Services
- Hardware & Financing

Shift in geographic mix…

- **2008 revenue:**
  - 21% Asia Pacific
  - 37% Europe, Middle East, Africa
  - 42% Americas

- **71% of employees outside US**
  - 84K in India, 60K increase in 5 years
  - 16K in China, 10K increase in 5 years

- Record Performance in 2008…
  - $103.6B revenue, up 5%
  - $16.7B pre-tax earnings, up 15%

Chart legend:
- Revenue ($B)
- Pre-tax income
- Free Cash Flow
- EPS
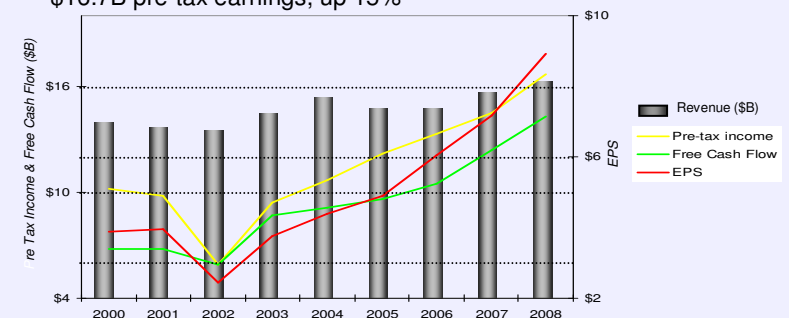
  - $8.93 Earnings Per Share, up 24%
  - Strong performance in services, software and growth markets

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Transformation simplified infrastructure and governance

	1992	Today
CIOs	128	1
Host Data Centers	155	5
Web Hosting Centers	80	6
Network	31	1
Applications	16,000	4,500

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BT/IT Governance Model

Globally Integrated Enterprise SVP Forum

Enterprise Process OwnerTeam

Globally Integrated Support Processes

Enterprise Process Owner (EPO)

CIO Operating Team

Transformation Executive IPMT

Run Management Team

Interlock on business unit and Geo requirements and priorities

Unique Business Unit & Geo requirements

STG	SWG	GBS	GTS

GMU	Japan	NA	NE	SW

BT/IT Transformation Programs

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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.**
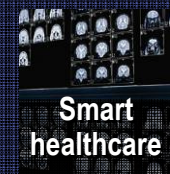
Smart supply chains

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.

IBM.

The Evolution of the Enterprise

20th *Century*

The international era -- exporting

The multinational era -- replicating

21st *Century* A globally integrated enterprise **-- business in a connected world**

A **Globally Integrated Enterprise (GIE)** is an open, modular organization that is integrated into the fabric of the networked economy and operates under a business model that makes economic sense in the new global landscape.

Global Supply Management

Global Production Optimization
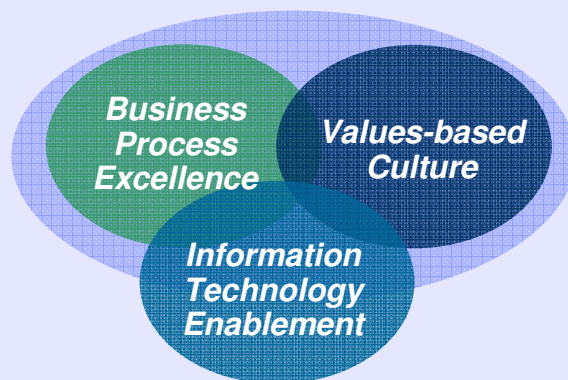
Global Demand Capture

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IBM's Approach to Transformation

IBM Strategy

IBM Values

Guided by the IBM Strategy and grounded in our Values

Transformation Framework

Business Process Excellence

Values-based Culture

Information Technology Enablement

Enable transformation at the intersection of business process, technology and culture

Transformation Focus Areas

Enabling Growth	Enabling Productivity	Enabling Culture Change
▪ Growth markets leadership ▪ Mergers & acquisitions ▪ State-of-the-art sales enablement ▪ Client value focus	▪ Global shared services ▪ Business process excellence ▪ IT enablement	▪ Transformational Leadership ▪ Values-based culture ▪ Collaborative innovation

Sustain our strength in the global marketplace by focusing on areas that enable growth, productivity, and culture change

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Enabling Growth

- Growth Markets Leadership
- Mergers & Acquisitions
- State-of-the-art Sales Enablement
- Client Value Focus

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Enabling Productivity

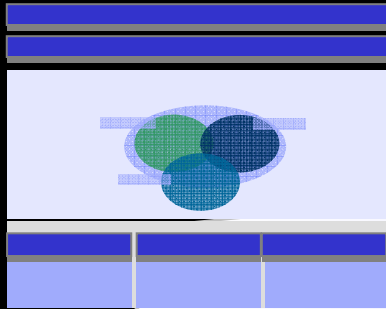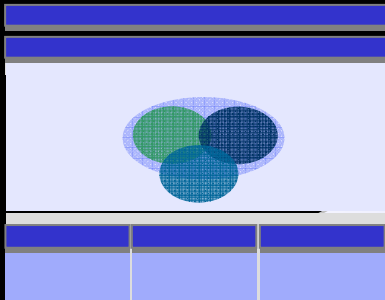- Global Shared Services
- Business Process Excellence
- IT Enablement

Enterprise Integration
- Globally Integrated Support Processes
- Radical Simplification
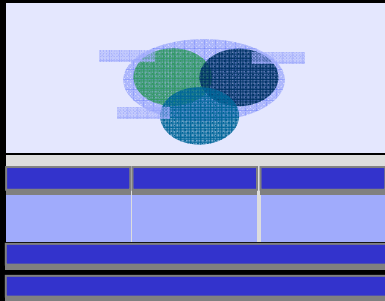
Shared Services
- Web Enablement
- Core vs. Non-Core
- Global COEs

Consolidation/Standards
- Common Processes
- Automation

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Enabling Culture Change

- Transformational Leadership
- Values-based Culture
- Collaborative Innovation

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Global Innovation Outlook
Key Findings

- Open, multi-disciplinary, global collaboration enables growth opportunities

- Leveraging intellectual *capital* is more important than protecting intellectual property

- Without dramatic change, it is unlikely that institutions of higher learning will keep pace with the dynamic nature of work

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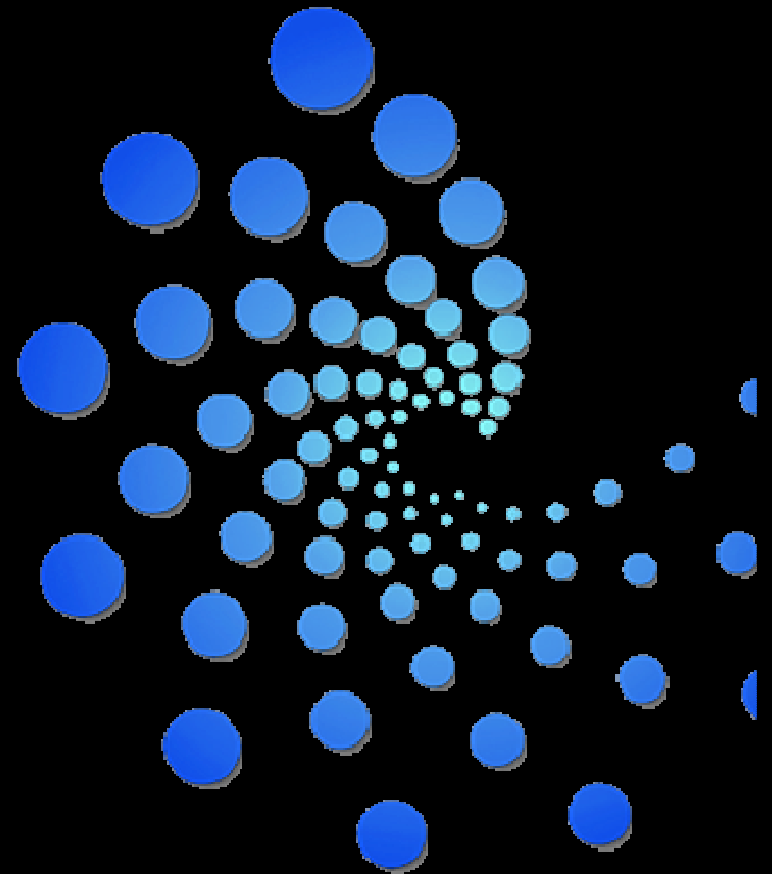
Commission on the Future of Higher Education
Led by U.S. Secretary of Education Margaret Spellings

- Develop a national strategy for post-secondary education
  - Meet the needs of America's diverse population
  - Address economic and workforce needs

- Preserve America's lead in preparing students for the high-skilled, high-value jobs of the future

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## Commission on the Future of Higher Education
Among the Findings …

"Government and institutional policies created during a different era are impeding the expansion of models designed to meet the nation's workforce needs"

A TEST OF LEADERSHIP
Charting the Future of U.S. Higher Education

A Report of the Commission Appointed by
Secretary of Education Margaret Spellings

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World's Large Labor Forces
A = Agriculture, G = Goods, S = Service

US shift to service jobs

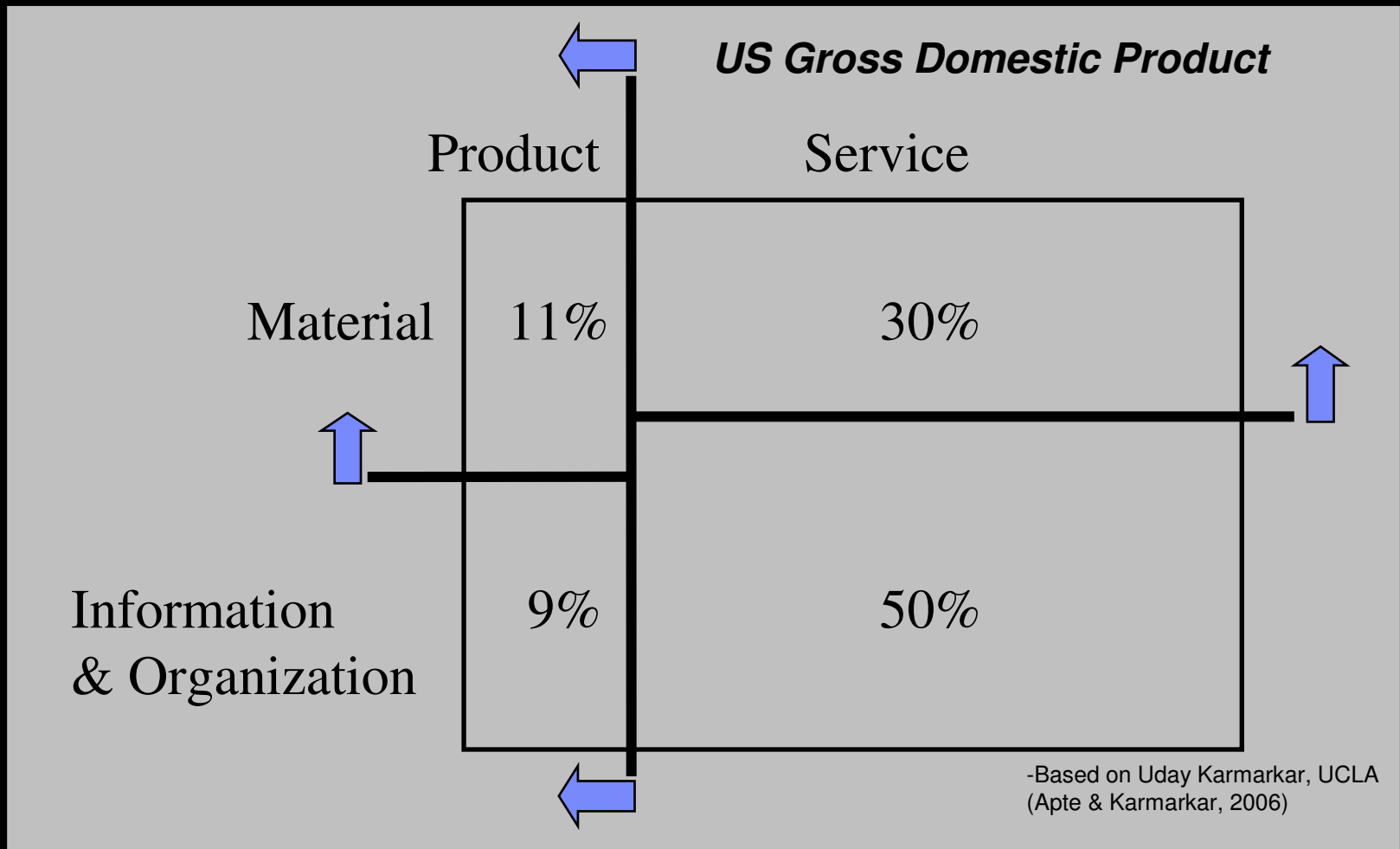| Nation	Labor %	A %	G %	S %	40yr Service Growth
China	25.7	49	22	29	142%
India	14.4	60	17	23	35%
U.S.	5.1	1	23	76	23%
Indonesia	3.5	45	16	39	34%
Brazil	3.0	20	14	66	61%
Russia	2.4	10	21	69	64%
Japan	2.2	5	28	67	45%
Nigeria	1.6	70	10	20	19%
Bangladesh	2.1	63	11	26	37%
Germany	1.4	3	33	64	42%
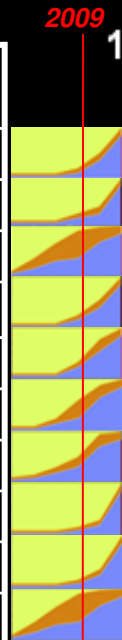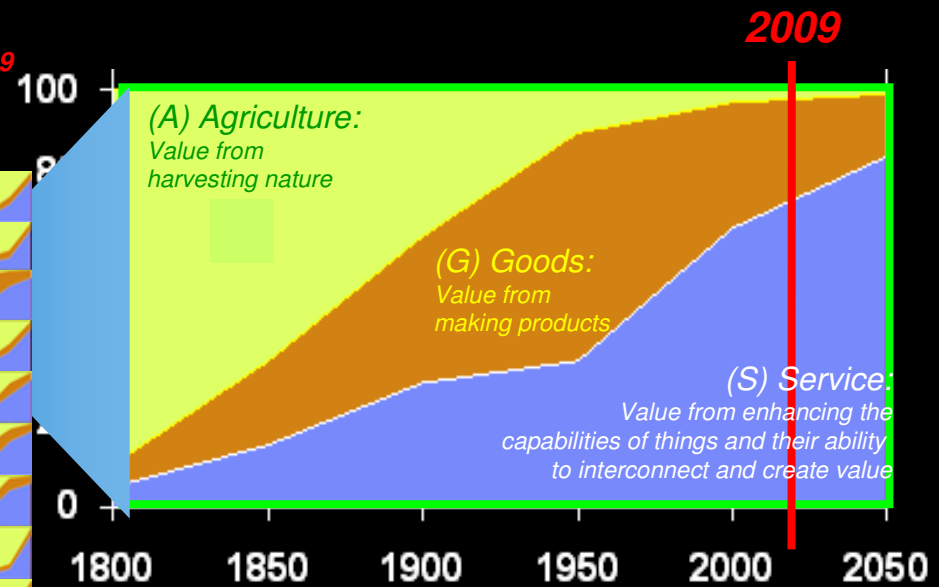
CIA Handbook, International Labor Organization
Note: Pakistan, Vietnam, and Mexico now larger LF than Germany

The largest labor force migration in human history is underway, driven by global communications, business and technology growth, urbanization and regional variations in labor and infrastructure costs and capabilities.

2009

2009

100

0

1800   1850   1900   1950   2000   2050

(A) Agriculture:
Value from harvesting nature

(G) Goods:
Value from making products

(S) Service:
Value from enhancing the capabilities of things and their ability to interconnect and create value

US Bureau of Labor Statistics
Two highest grow service job sectors

Employment change

Numeric change in wage-and-salary employment by industry sector, projected 2004-14

(Thousands)

Professional and business services — 4,566

Healthcare and social assistance — 4,303

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US GDP shift to service innovation

US Gross Domestic Product

	Product	Service
Material	11%	30%
Information & Organization	9%	50%

-Based on Uday Karmarkar, UCLA
(Apte & Karmarkar, 2006)

Investment in Services Innovation

- **Services Science, Management and Engineering (SSME)**
  - Collaboration among Academia, Industry and Government to drive services innovation in the 21st century

  - Designing University curricula to tightly link technical and business disciplines

- **Leading universities exploring and investing in SSME**
  - Working in tandem with thought leaders in the business world

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Developing T-Shaped People

Economics and Social Sciences	Science and Engineering
Business Anthropology	Industrial and Systems Engineering
Organizational Change & Learning	Computer Science & Info. Systems
Business and Management	Math and Operations Research

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Building a Smarter Planet
To Address the World's Most Pressing Issues

Landmark: Revolutionizes petroleum frontier exploration in Texas by integrating data sources to increase the likelihood of finding profitable sources of oil.[1]

Stockholm, Sweden: An intelligent toll system in the city center resulted in 20% less traffic, 40% lower emissions and 40,000 additional users of the public transportation system.[1]

River and Estuary Observatory Network: Will create the first technology-based real-time environmental monitoring and forecasting network to guide better policy, management and education for the Hudson River and estuaries worldwide.[2]
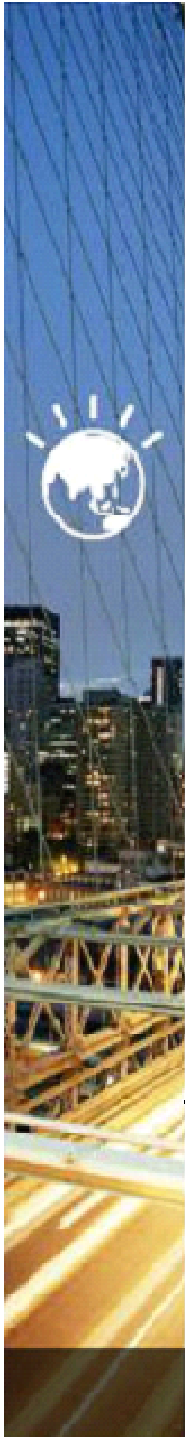
British Airways: Uses mobile device check-in and other self-service technologies to help facilitate a trouble-free travel experience and save the airline $3.50 per passenger.[2]

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Moving Forward

- Move quickly to capitalize on new innovation or risk commoditization

- Business, government and academia must partner more aggressively

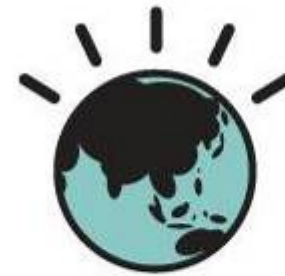- The capacity for change is the most essential attribute of leadership

"If nothing changes, nothing changes."

Creating Real Value through Innovation, Transformation and Continuous Change

Nick Donofrio

IBM Fellow Emeritus
IBM Executive Vice President,
Innovation and Technology (Ret.)