

IBM RESEARCH



Innovation that matters: Creating an environment for innovation

Cathy Lasser
Vice President, Industry Solutions
and
Larry Lieberman
Automotive Industry Senior Manager

IBM Research

Innovation – One Definition?

“The successful exploitation of new ideas.”

UK Department of Trade and Industry

“Innovation transforms insight and technology into novel products, processes and services that create new value for stakeholders, drive economic growth and improve standards of living.”

U.S. National Innovation Initiative

“Innovation occurs at the intersection of invention and insight. It’s about the application of invention – the fusion of new developments and new approaches to solve problems.”

Sam Palmisano, IBM Chairman and CEO

The Changing Nature of Innovation

Innovation in the 21st century

- Open
- Collaborative
- Multi-disciplinary
- Global

Key factors driving change

- Dynamics of a flattening world
- Emergence of new capabilities
- Evolution of information technology
- March of commoditization
- Massive shift in demographics
- Unpredictability and impact of change

Major Forms of Innovation

Product and Services Innovation



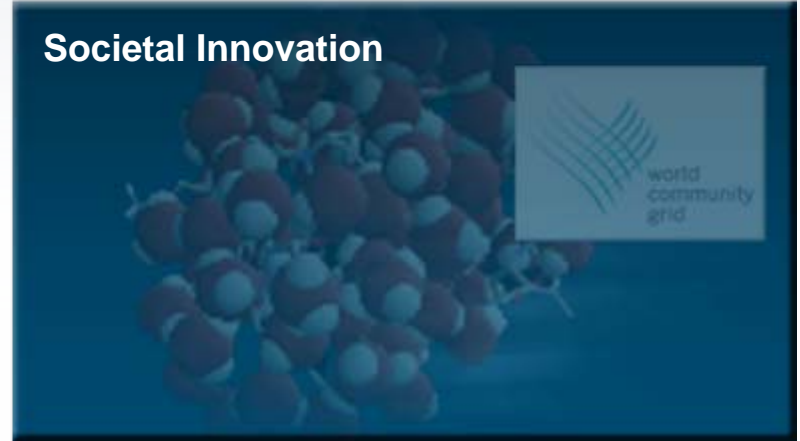
Process Innovation



Business Model Innovation



Societal Innovation



Embracing Open, Collaborative Innovation Models

What would happen if we could...

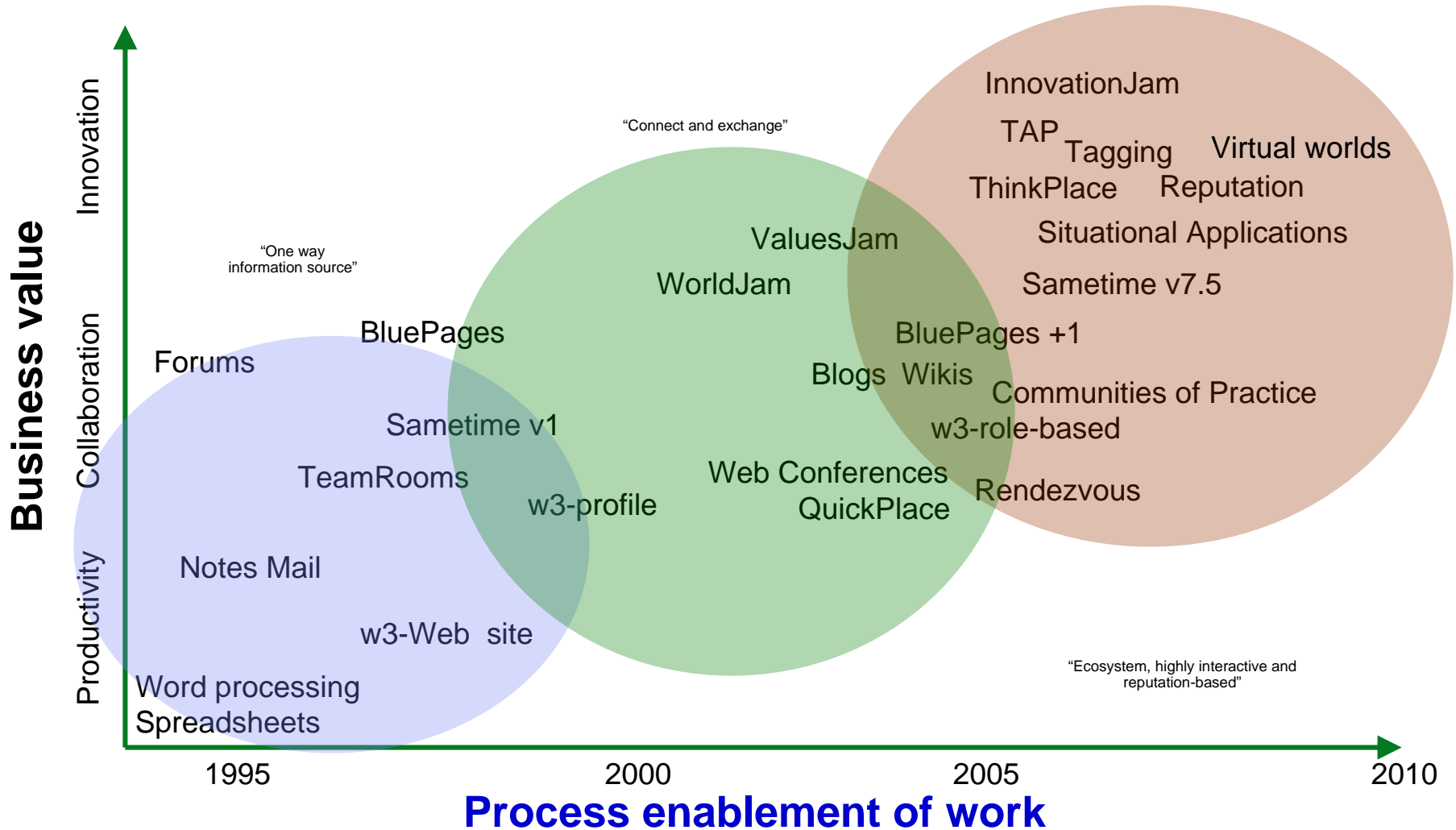
Bring our top technologists and consultants together to envision the future of innovation?

Invite our innovation ecosystem – keystone clients, government leaders, academic institutions, NGOs, business partners, venture capitalists – to join in the conversation?

Partner with those ecosystem participants to act together to address the challenges and opportunities that emerge?



Collaborative innovation at IBM



IBM's AlphaWorks - Open Innovation in software

Speeding IBM Emerging Technologies to the Outside Early-adopter Community

- Promising software programs in research not yet commercialized.
- Outside companies and developers contribute valuable ideas about bringing them to market.
- First-cut versions of research technology available for free trial attracting thousands of early adopters, innovators, and entrepreneurs to site.
- 40% of technologies on the site graduate into IBM products or industry standards.



The screenshot displays the IBM alphaWorks website interface. At the top, there is a search bar with the text "All of aW" and a "Search" button. Below the search bar is a navigation menu with links for "IBM home", "Products & services", "Support & downloads", and "My account". The main header features the "alphaWorks" logo with the tagline "emerging technologies" and a gear icon. The date "28 January 2004" is displayed on the right. A sidebar on the left contains a "Select a country" dropdown, a "developerWorks" link, and a list of "Emerging Technologies" including Autonomic Computing, Collaboration, Eclipse Technology, Grid Computing, Java Technology, Privacy & Security, Web Services, Wireless, and XML. Below this is a "find a technology" dropdown and links for "Licensing", "Discussion Forums", "alphaWorks in the News", and "alphaWorks Newsletters". The main content area features a "Business Information Conformance" section with a puzzle piece icon and a "Learn more" link. Below this is a "New alphaWorks Technologies" section with links to "Business Integration-Information Conformance Statements for Java", "BeepLite Networking Layer", "Combinatorial Test Services", "Policy-Based Data Management Tool", and "Model for Self-Managing Java Servers". On the right, there are two yellow boxes: "Top alphaWorks Downloads" listing "NotesBuddy", "XML parser for Java", "Power Booster", "IBM Toolkit for MPEG-4", and "BPWS4J"; and "Top Online Demos" listing "Business Workload Manager Prototype", "Simple Browser", "Productivity Components", and "Emerging Technologies".

“Jamming” - - What is a Jam?

A Collaborative Innovation Tool:

- Developed to accelerate innovation – both idea discovery and implementation
- Structured as a multiple-day, web-based forum where participants brainstorm and propose new ideas

Format:

- Participants post ideas regarding specific jam topics and collaborate on ideas brought forward by others
- Moderators highlight key discussion ideas and facilitate collaboration

Contributions and Participation:

- Contribution level at the discretion of each individual participant
- Structured to allow for flexible participation when time allows

The screenshot displays the Habitat Jam website interface. At the top, the logo 'Habitat jam' is visible alongside a banner image. A navigation menu on the left lists various topics and utility links. The main content area features a discussion forum for the topic '1. Improving the lives of slum dwellers', including a sub-header 'How can we turn dialogue into better lives for one sixth of humanity?' and a paragraph of introductory text. Below the text is a form for users to 'Add your idea now', with fields for 'Subject' and 'Comment'. The right sidebar contains sections for 'JAM Themes', 'Moderators currently online' (listing Ms. Gabriella Carolini as offline and Ms. Raquel Rolnik as online), and 'Forum moderators' (listing Mrs. Anna Tibajuka as the Executive Director of UN Habitat, Kenya).

In December 2005, the Canadian government, IBM and UN-HABITAT hosted a 72-hour ‘Habitat Jam’ to stimulate ideas in preparation for the World Urban Forum III conference in Vancouver in June 2006.

Ten New Businesses

<p>Near-term</p> <p><i>(Opportunities that can be acted upon within the next year)</i></p>	<ul style="list-style-type: none"> ▪ Smart Healthcare Payment Systems ▪ Simplified Business Engines ▪ Real-time Translation Services
<p>Mid-range</p> <p><i>(Could be implemented in 18-24 months)</i></p>	<ul style="list-style-type: none"> ▪ Intelligent Utility Networks ▪ 3D Internet ▪ “Digital Me” ▪ Branchless Banking for the Masses ▪ Integrated Mass Transit Information Services
<p>Blue-sky</p> <p><i>(Exploratory in nature or representing a significant long-term commitment to deliver to market)</i></p>	<ul style="list-style-type: none"> ▪ Electronic Health Record System ▪ Big Green Innovations <ul style="list-style-type: none"> ▪ Water Filtration (through nanotechnology) ▪ Practical Solar Power Systems (photovoltaics) ▪ Advanced Water Modeling



“We opened up our labs, said to the world, ‘Here are our crown jewels, have at them’. The Jam -- and programs like it – are greatly accelerating our ability to innovate in meaningful ways for business and society.”

- Sam Palmisano, IBM
Chairman and Chief Executive
Officer

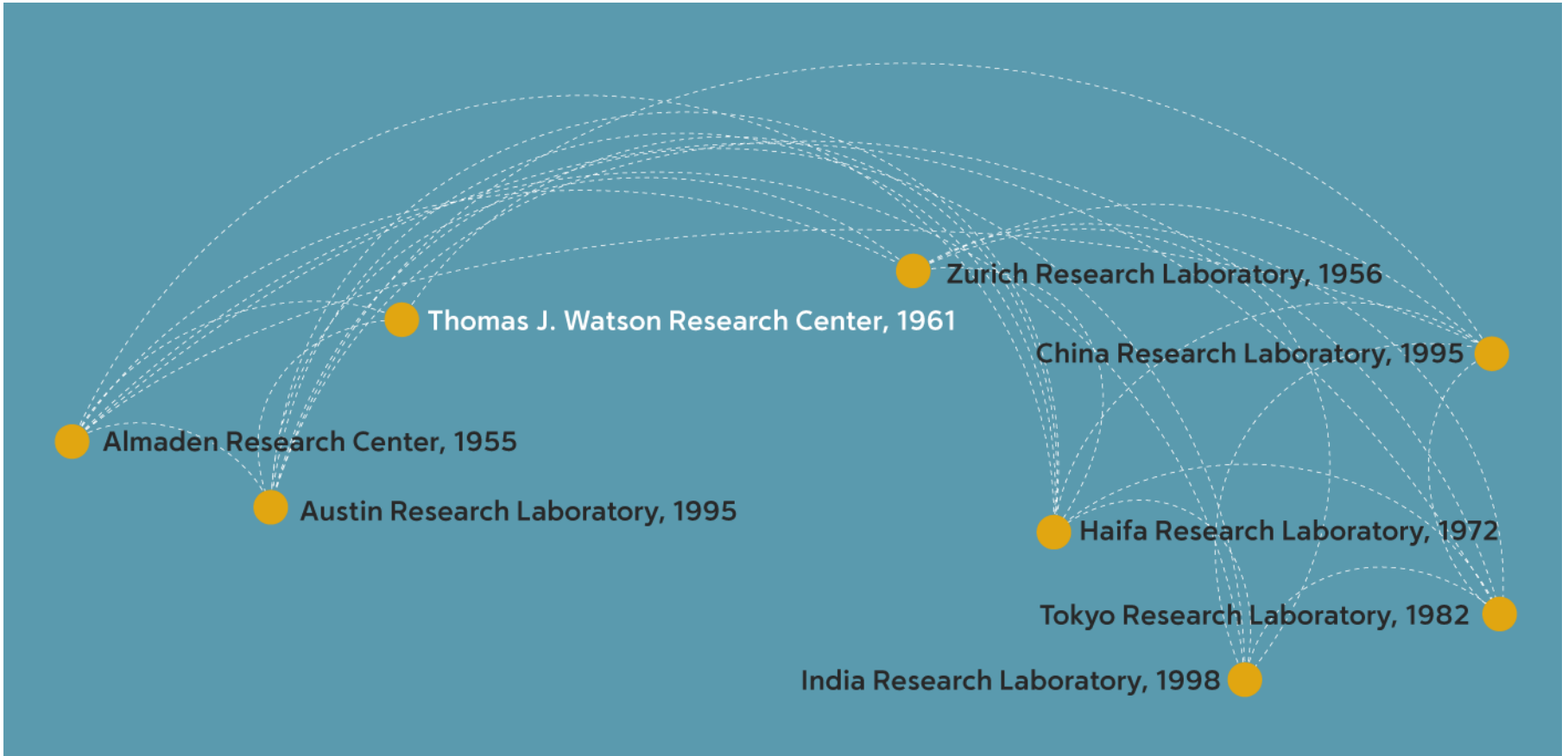
IBM- OESA held an historic industry first Jam on March 7-10, 2007

WHEN: MARCH 7-10, 2007; 72+ HOURS
TIME: Beginning 12 Noon ET, Wednesday March 7
PARTICIPANTS: AUTOMOTIVE SUPPLIERS NA + Others



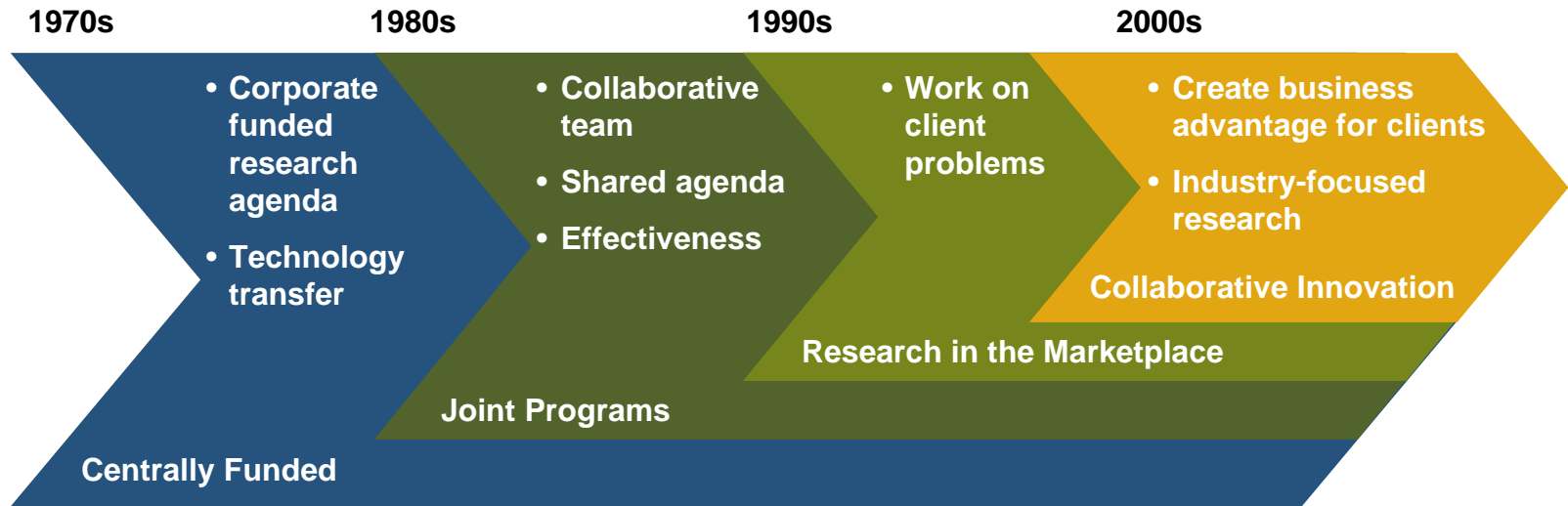
The screenshot shows the homepage of the 'Automotive Supplier Jam' website. At the top, there is a navigation bar with the text 'Hello Elizabeth (Sign out) | My Jam | Help | Search Discussions'. Below this is a secondary navigation bar with links for 'Home', 'About the Jam', and 'Jam Sessions'. A central navigation menu includes 'Get Started', 'My Jam Activity', 'Hot Ideas', and 'Most Active'. On the right side, there is a 'Remaining Jam Time: 13 hr' indicator and logos for 'IBM' and 'OESA'. The main content area features a 3D cutaway image of a car on the left and a welcome message on the right: 'Welcome to Automotive Supplier Jam. Got an idea that just hasn't seen the light of day or just thought of something new? Ready to collaborate with colleagues and companies throughout the supplier community to dream up breakthrough thinking in products/services, business models and operations? Let's Jam!'.

IBM Research Worldwide



R&D and Innovation Management at IBM

Evolution of IBM Research



Collaborate on client-specific technology and business solutions

First-of-a-Kind Program

Worldwide collaboration of Research, product divisions, and clients

- **17 Industries**
- **General Business**
- **Emerging geographies**

Accelerating the delivery new solutions to the marketplace

- **Clarifies client requirements**
- **Tests market readiness**
- **Enhances IBM's product and services offering portfolio**

Differentiating IBM

- **Unique in the industry**
- **Leverages our world renowned research capabilities**
- **Positions IBM as the Innovator's Innovator**



Butler-in-the-Dashboard

Enhanced driver experience through voice-enabled in-car interactivity

Improved driver-vehicle relationship contributes to safety

Traffic updates, location related information, voice & email retrieval

Generate opportunities to sell new services and features



Cognitive Early Warning Systems for Automotive Manufacturers

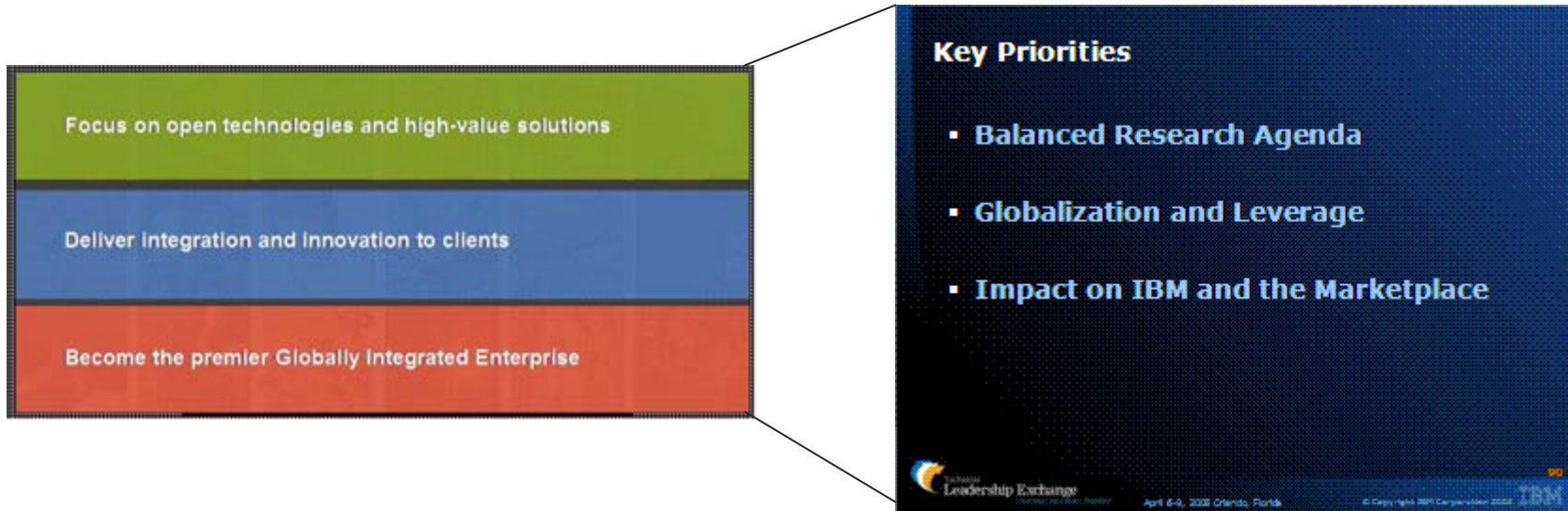
Monitor, measure, analyze, correlate and predict key vehicle behaviors in real-time

Integrating data and unstructured text to extract knowledge about failure and safety information

Allows advanced analysis, and rapid response through collaborative processes



What is IBM Collaboratory?

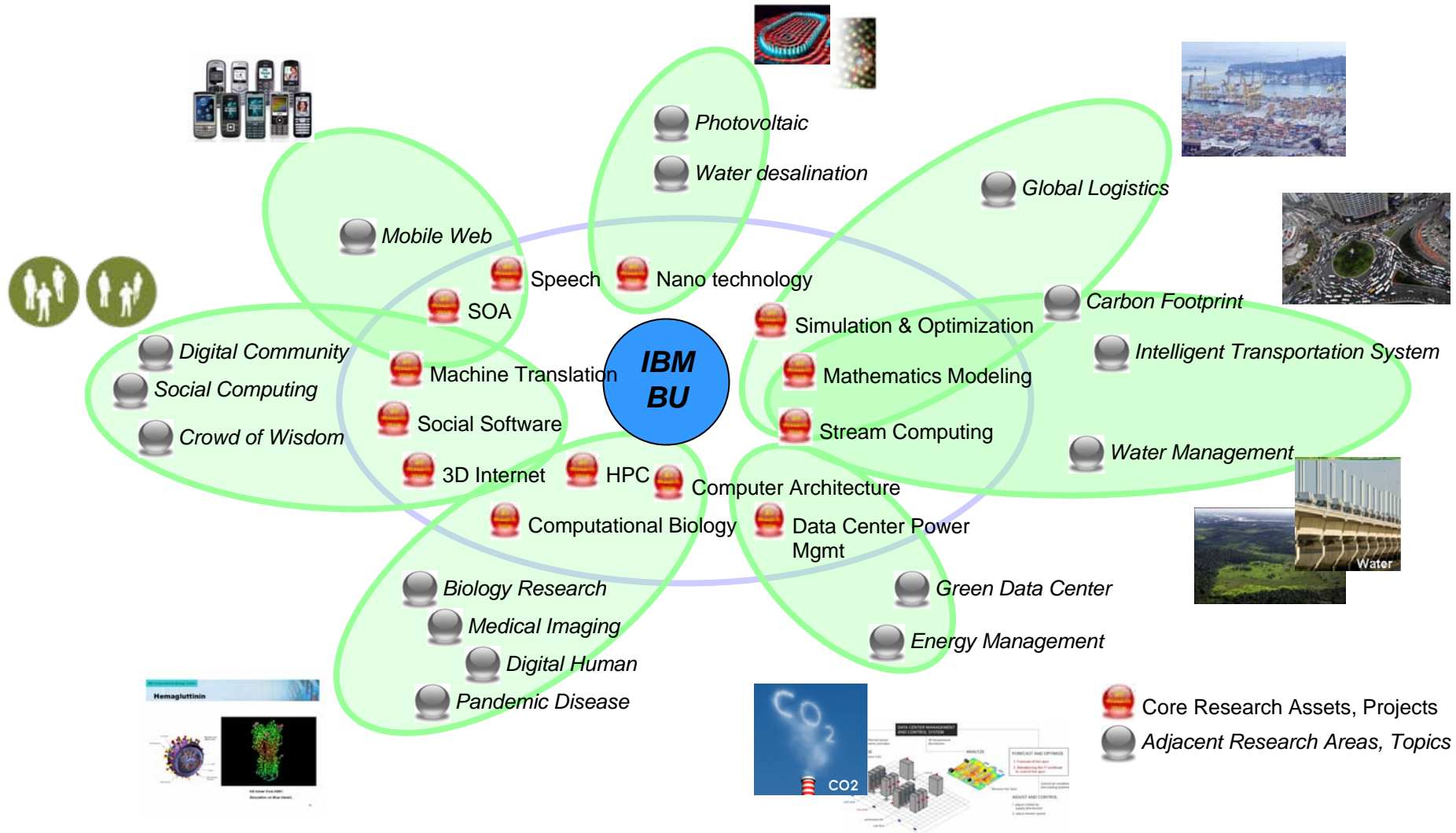


Goals of IBM Collaboratory

Leverage IBM technology, brand power and global presence to...

- Influence outside world and bring value to the partners and enhance IBM reputation
- Expand the horizon of current research scope and areas to the adjacent high-potential areas
- Reach out and attract local talented technical resources for research and for IBM
- Collaborate with partners that has unique opportunities, capabilities, and funding
- Help IBM to grow business in emerging marketplaces

Extending the Horizon of IBM Research



Observations from innovation activities!

Tremendous value in bringing together diverse perspectives and expertise around common issues

- Understanding regional differences and global commonalities essential for lasting innovation

Near-term pressures cloud long-term thinking

- Even in the most free-form setting, it's difficult to think beyond the next 12-18 months
- “Quarter-to-quarter” mentalities are the single greatest inhibitor of innovation

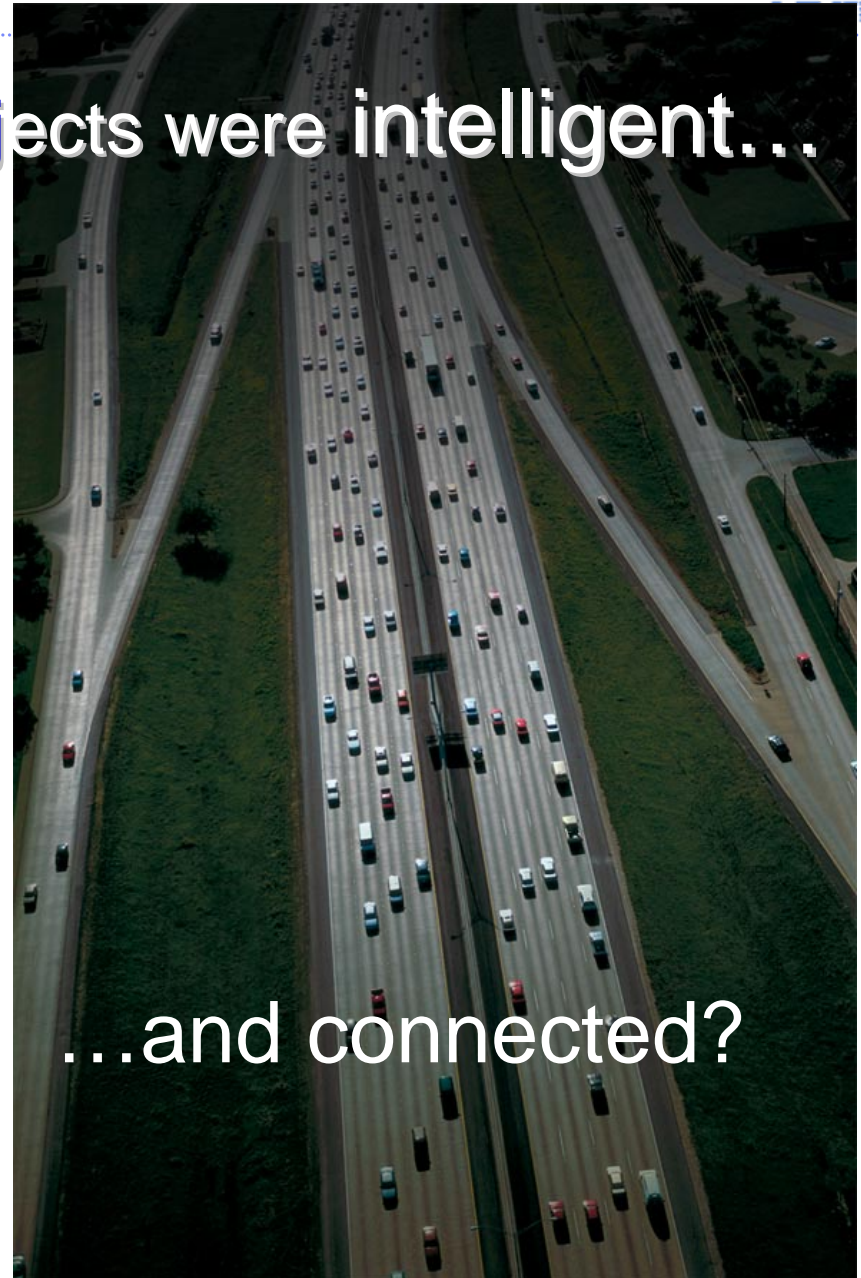
Innovation isn't a process, it's a culture

- Reject the status quo -- and to tempt failure
- The skill, talent and creativity of people from different teams and organizations around the world must be tapped
- “Intellectual capital” more valuable than “intellectual property”

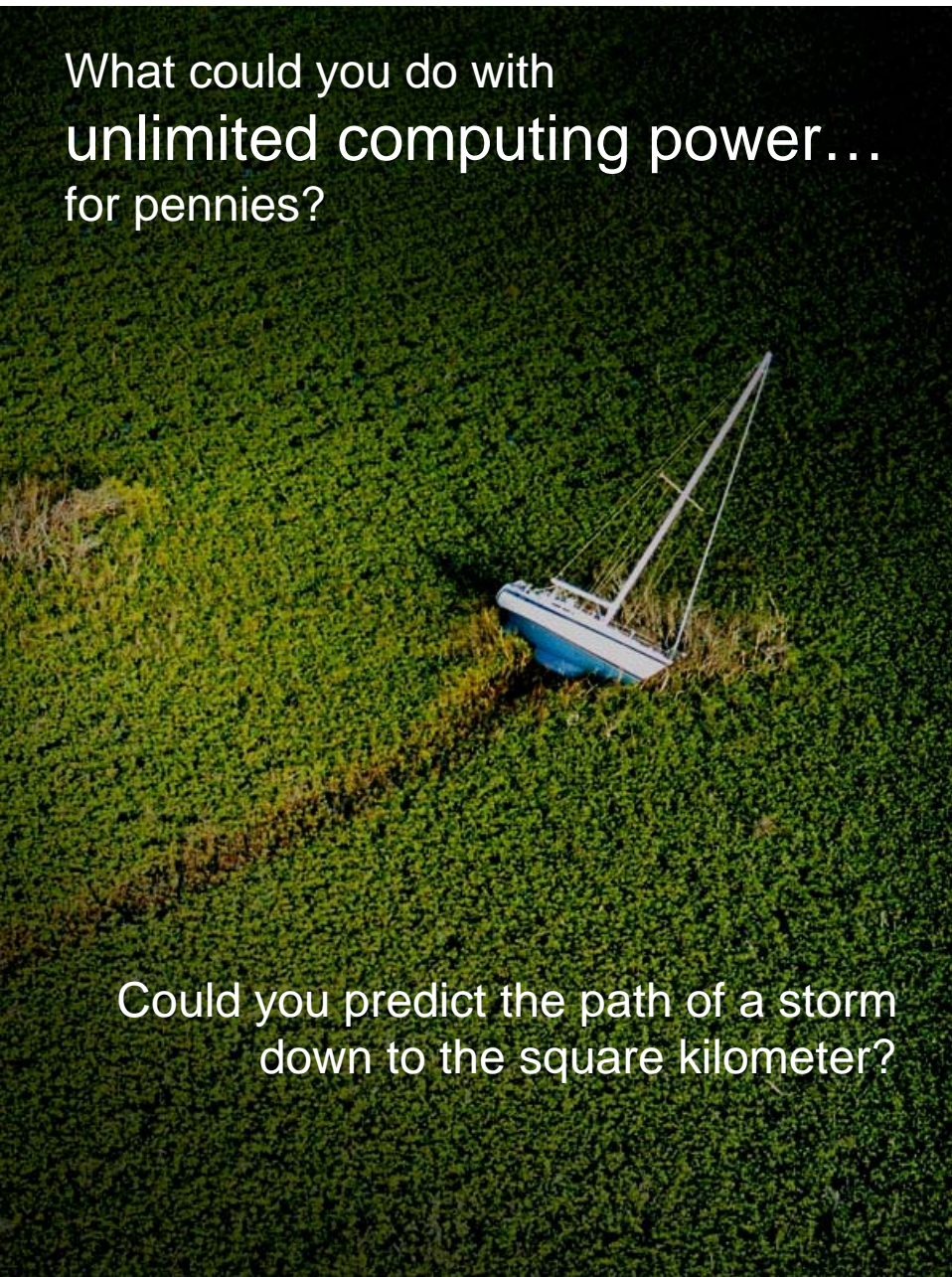
Solving the toughest problems will require greater collaboration across business, government and academia

- Right now, there's the will but entrenched barriers to the way

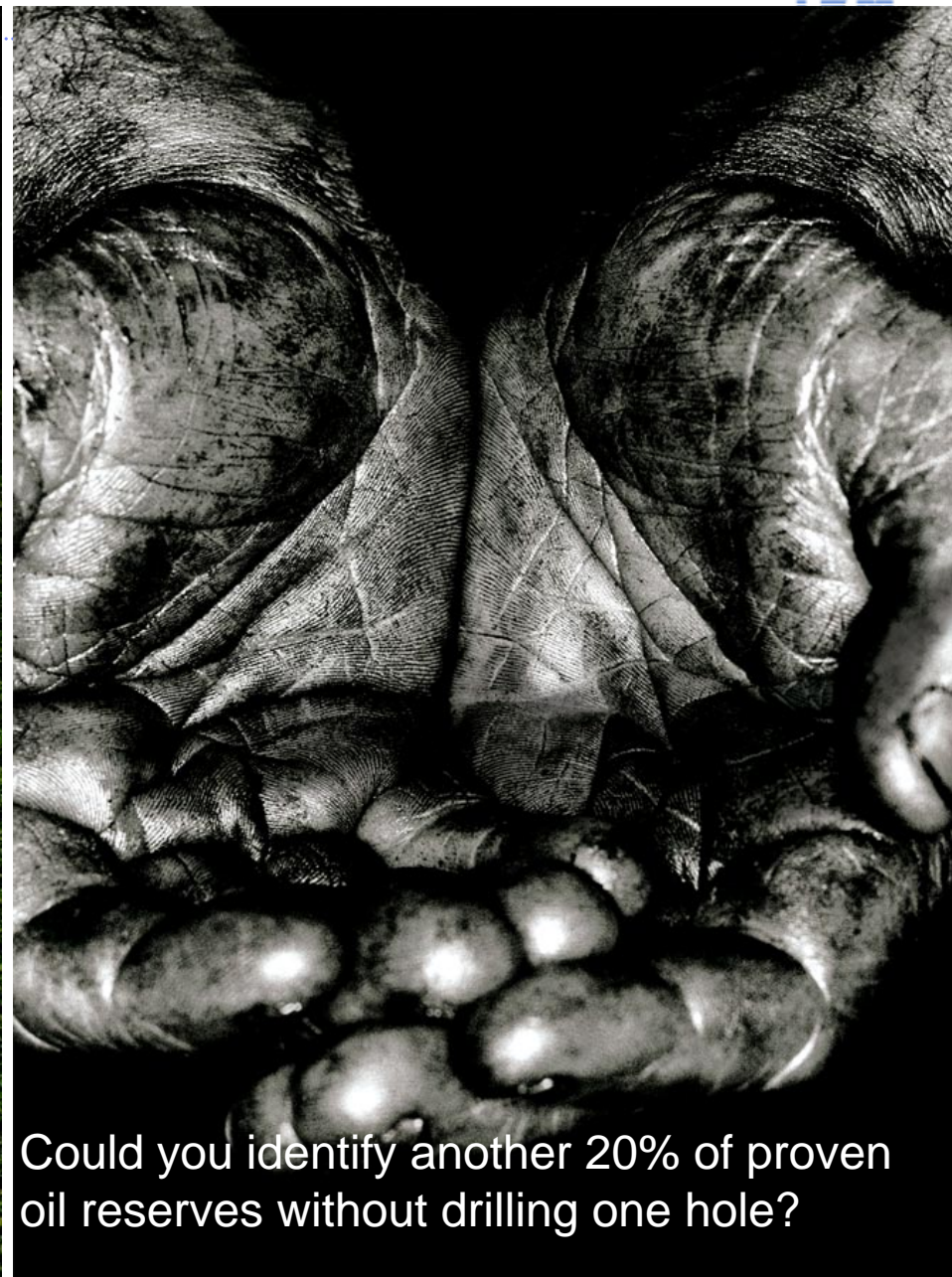
What could you do if all objects were intelligent...



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?

