Open for Business:
An Industry View of Open Standards

NIST: Open ICT Ecosystems Conference
Marc Ehrlich – IP Counsel
March 13-14, 2006

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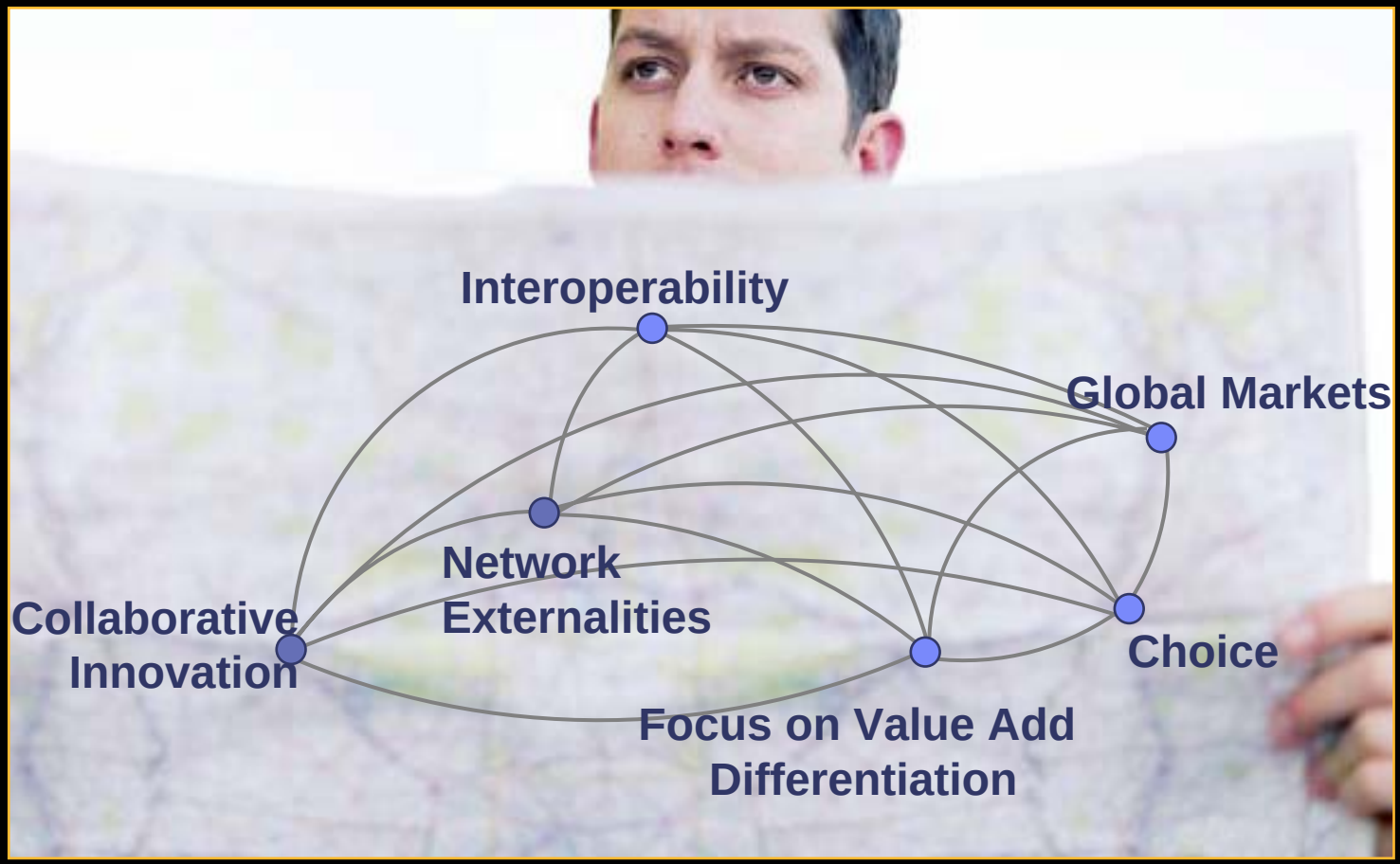
The Industry Paradox of Open Standards

- Friends or Foes?
  - Why would competing companies work together in open communities?
- What is Open?
  - What characteristics of an open standard achieve these business objectives?
- Open or Closed?
  - Why and when should a company choose to allow others to freely use proprietary IP?
- Quid Pro Quo?
  - What is the return on an open investment?

Open Standards translate to value for business



The Business of “Open”

- Leverage
  - Broadly Adopted Technological Platform
    - Access to Global Markets
    - Network Effects (Metcalfe’s law)
    - Ensures interoperability
    - *‘Industrial ‘free trade agreements’*
- Opportunity
  - Focus On Differentiation and Value Add
    - Technology/Service on open standards
    - Secure development roadmap
    - Avoid development to competing platforms
    - *‘Cooperate on the platform – compete on differentiation’*
- Customers
  - Increased choice & price options
    - Range of vendors which different:
      - Price points
      - Functionality options
      - Service support options
  - Product utility enhanced via interoperability

‘Open’ Means Business

- Business Objectives Dictate Characteristics of Open
  - Broadly adopted platform
  - Secure for future development & consumption
  - Ensures Interoperability
- ‘Open’ Should be Fashioned to
  - Attract the best thinking of the most developers
  - Provide a clear and stable picture of implementation details
- Open = Transparency
  - Open & accessible
    - Membership
    - Development process & records
    - Use terms
  - No side agreements
- Open = Stability
  - Consensus decision making; No single party veto
  - Simple and consistent terms of use
  - Backward compatible if applicable
- Open = Balance
  - Encourage maximum participation and adoption
  - Promote public benefit of std & private interests of firms

Open or Proprietary?

The IT industry is evolving a new equilibrium

Industry direction

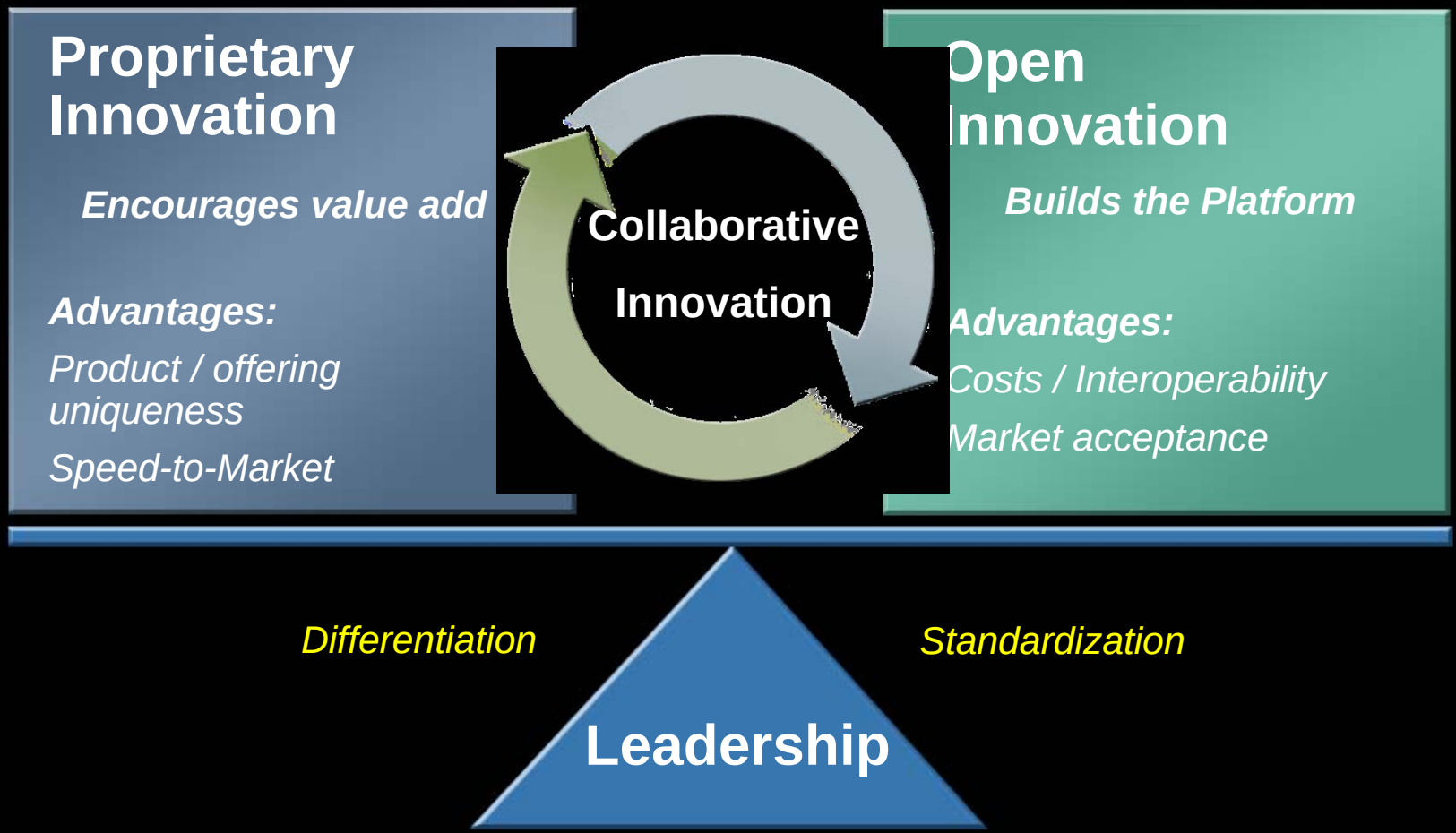
Totally Open

Totally Proprietary

More transparent, More community involvement

Where do we need to be today to drive innovation, solve customer problems, and accelerate growth?

Collaborative Innovation & The Innovation Cycle: It's not "proprietary or open," it's "and"



New IP Practices Accelerate Innovation
By Fostering Competition and Collaboration

- Proprietary IP brings distinction to new ideas, differentiation to corporate identities and fosters healthy competition in the marketplace

- Open or shared IP fosters community problem solving and collaboration; can expedite innovation
  - Open standards as ***new infrastructure*** of indus
  - IP used to ***influence not exclude***

THE NEW YORK TIMES, MONDAY, APRIL 11, 2005 C1

Sharing the Wealth at I.B.M.

By STEVE LOHR

I.B.M. is renowned for its rich storehouse of patented inventions. It once again led the research sweepstakes in America last year, collecting 3,248 patents, more than any other company. And it earned more than $1 billion last year from licensing and selling its ideas.

So why has I.B.M. shifted course recently, giving away some of the fruits of its research instead of charging others to use it? The answer is self-interest.

Diverging from conventional wisdom, the company has calculated that sharing technology can sometimes be more profitable than jealously guarding its property rights on patents, copyrights and trade secrets. The moves by I.B.M., the world's largest supplier of information

Hoping to Profit By Making Patents Available Free

being closely watched throughout the business world.

Earlier this year, I.B.M. made a broad gesture toward what it called a new era in how it controls intellectual property. It announced in January that it would make 500 patents — mainly for software code that manages electronic commerce, storage, image processing, data handling and Internet communications — freely available to others.

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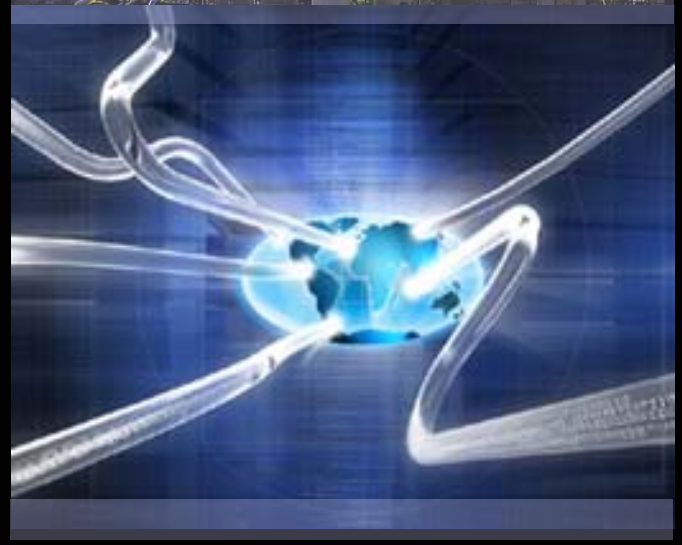
Open Standards as the New Infrastructure

Paradigm Shift for IP Leverage In the Information Economy

- Industrial Economy - Vertically Integrated Firms
  - Ex. Ford Motor Co. Assembly Line Pioneer

    Owned Rubber Tree Plantations
  - Standards emerge to address intra-firm interoperation. Nuts/bolts
  - IP used to *protect* internal infrastructure *by excluding* competitors

- Information Economy - Virtually Integrated Firms
  - Global Network enables outsourcing and specialization in the 'Flat World'
  - Standards enable business componentization and networked interoperation of the Virtual Firm
  - IP used to *shape* external infrastructure *by opening access to IP* thus influencing the development of standards



The IBM Open Participation Report Card

1998 / 1999
Java, XML

- Co-led XML4J, W3C DOM, XSL
- Led Apache XML projects Xalan Xerces, SOAP
- Founder XML.org
- Elected OASIS Board of Directors

2000
Web Services & UDDI

- Co-author WSDL, SOAP 1.1
- Cofounder UDDI.org
- Author UDDI specification

2001
Web Services and Tools

- Led submission of WSDL to W3C
- Founder Eclipse.org
- Co-author W3C XML Schema
- Chair OASIS WS-Remote Portlets TCs
- IBM Web Services Toolkit released on alphaWorks
- Participation in Mozilla

2002
WS-I, OMA and WS-Security

- Founder WS-I.org
- Founder OMA
- Co-author BPEL, WS-TX, WS-TC
- Co-author WS-Security
- Co-chair UDDI TC
- Linux contributions to scalability

2003
Web Services Interoperability

- Co-chair OASIS WS-Security 1.0
- Submitted BPEL to OASIS
- Co-chair OASIS WS-DM TC
- Submitted CBE to OASIS
- Submitted WS-Manageability to OASIS

2004
Web Services Management

- Chair WS-I Basic Profile 1.1
- Co-chair OASIS WS-Notification TC
- Co-chair WS-Resource Framework TC
- Chair OASIS DITA
- Submitted WS-Addressing to W3C
- Contributed UML2 to Eclipse

2005
Web Services Reliability

- IBM named chair IETF
- IBM commitment to RF in OASIS
- Co-author & submitted WS-RM to OASIS
- Led OASIS WS-DM and DITA to Standards status
- Database extensions to PHP
- Pledged 500 US patents to OSS
- Purchase of Gluecode

Specific industries create standards to meet their unique needs

Automotive	▪ Quality issues—warranty costs average $700 per vehicle in US ▪ Growing need for multi-vendor in-vehicle systems/software integration
Healthcare	▪ Accelerating costs, slow response times, quality of patient records ▪ Increasing pressure to integrate payers, providers, hospitals
Electronics	▪ Moving from traditional manufacturing to configure-to-order ▪ Lack ability to mass produce with last-minute customization
Banking	▪ Information silos, redundancy and underutilization of data ▪ Pressure to speed development and delivery of new products & services
Retail	▪ Available data increasing exponentially (e.g., RFID), but not leveraged effectively ▪ Access to real-time information required to optimize supply chain
Telecom	▪ “Island” infrastructures—multiple legacy systems and heterogeneous environments ▪ No single view of the customer (activation, self-service, billing, customer care)

Example IBM Support for Industry Standards

- Websphere Business Integration (WBI) for Financial Networks (WBIFN)
  - Gives banks and financial institutions a single platform for all of their communication channels. Supports SWIFT and SWIFTNet and offers migration tools for IBM MERVA
- Websphere Application Server (WAS) for Telecom
  - Provides a set of Parlay API extensions to WAS for the rapid creation and delivery of new revenue producing telecommunications services which integrate e-business applications with diverse telecommunications networks (wireline, wireless and Internet)
  - Supports many 3rd party Parlay Gateways
- WBI for Retail Distribution
  - Integrates with the item management and synchronization functions offered by UCCnet
- IBM Architecture & Planning Services for Web Services
  - Assists customers with web services architectural guidance, web services implementation guidelines and web services best practices.
- WBI Insurance Adapter for ACORD XML V1.0
  - Enables business applications to send and receive business data and events asynchronously. A broker or server can exchange business objects with applications that send or receive data in the form of ACORD XML messages.
- HIPAA SupportPac for WDI (Healthcare)
  - Uniquely provides support for translation of the complex dynamic hierarchical ANSI X12 formats used to support the exchange of HL7 documents in ANSI X12 transactions such as Advance Ship Notice and Medical Claims

Open Innovation Starts By Connecting Industries

Interoperability via standards is the vital link

Web Services

- Standardized, secure, reliable information exchange infrastructure

Open Document Formats

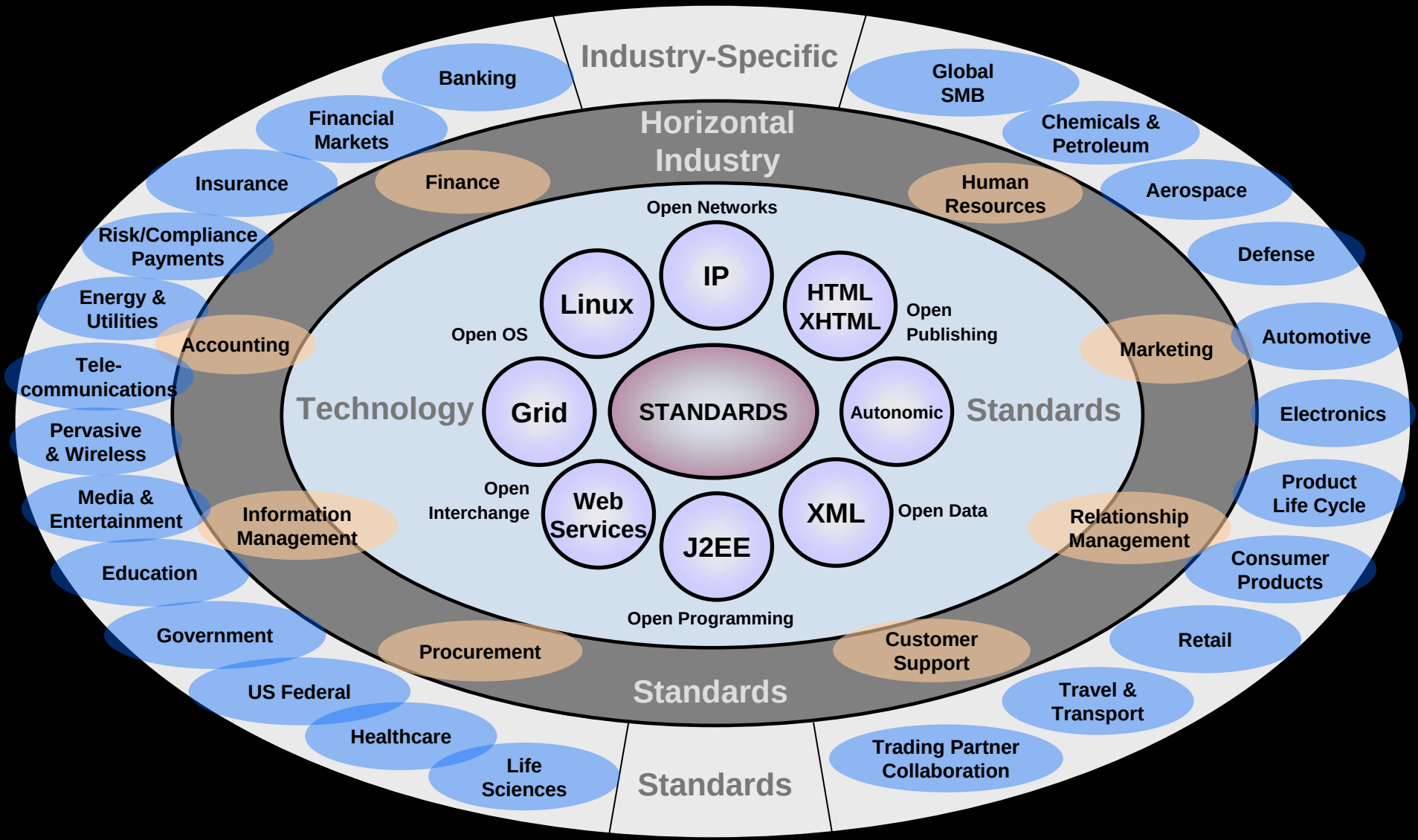
- Common open formats for documents and unstructured information, free from vendor lock-in

Electronic Forms

- Unified, consistent, more error-free and structured way of getting information

Source: Global Pulse Survey, July 2004

Open IT Standards As Infrastructure for Networked Industries



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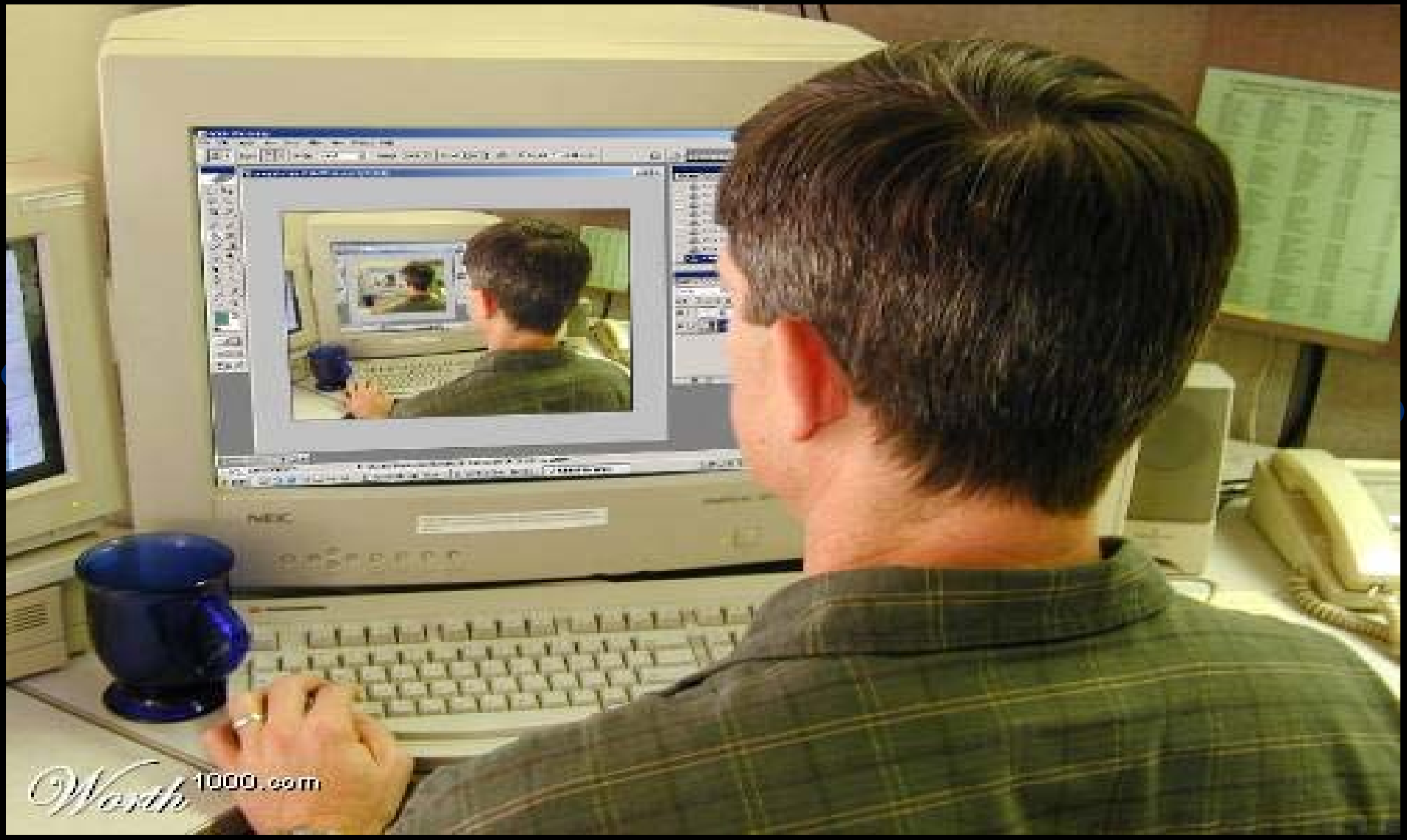

IBM WebSphere Application Server

A Proprietary Offering Built on Open Standards

WebSphere v4 & v5.0	WebSphere v5.02, v5.1	WebSphere v6
Apache SOAP ▪ The programming model, deployment model and engine **Proprietary APIs** ▪ Because Java standards for Web services didn't exist **Not WS-I compliant**	**JAX-RPC (JSR-101) 1.0** ▪ New standard API for programming Web services in Java **JSR-109 1.0** ▪ New J2EE deployment model for Java Web services **SAAJ 1.1** **WS-Security** ▪ Extensions added **WS-I Basic Profile 1.0** ▪ Profile compliance **UDDI4J version 2.0 (client)** **Apache Soap 2.3 enhancements** The engine is a new high performance SOAP engine supporting both HTTP and JMS	**JAX-RPC (JSR-101) 1.1** ▪ Additional type support ▪ xsd:list ▪ Fault support ▪ Name collision rules ▪ New APIs for creating Services ▪ isUserInRole() **JSR-109 - WSEE** ▪ Moved to J2EE 1.4 schema types ▪ Migration of web services client DD moving to appropriate container DDs ▪ Handlers support for EJBs ▪ Service endpoint interface (SEI) is a peer to LI/RI **SAAJ 1.2** ▪ APIs for manipulating SOAP XML messages ▪ SAAJ infrastructure now extends DOM (easy to cast to DOM and use) **WS-Security** ▪ WSS 1.0 ▪ Following WS-I Security Profile **WS-I Basic Profile 1.1** ▪ Attachments support **WS-TX (WS transactions)** **JAXR support** **UDDI v3 support** ▪ Includes both the registry implementation and the client API library ▪ Client UDDI v3 API different than JAXR (exposes more native UDDI v3 functionality not available in JAXR)

Why is IBM committed to open standards?

BSI British Standards dti

Press release

EMBARGOED: Not for publication until 0001hrs 20 June, 2005

Standards worth £2.5bn to UK business

Standards contribute £2.5bn per annum to the UK economy according to a new study published by the Department of Trade and Industry (DTI) and the British Standards Institution (BSI). The value of standards to the economy has been quantified for the first time ever and the research highlights their contribution to productivity, growth, innovation and international trade.

Standards, which can be for anything from household goods, to bridges, to sophisticated services, represent an indispensable level of know-how about a given area. They set rules, guidelines or definitions to help make business simpler by increasing the reliability of many goods and services and providing a common language for all businesses.

The DTI commissioned research reveals:

- Standards make an annual contribution of £2.5 billion to the UK economy;
- 13% of the growth in labour productivity is attributed to the role of standards;
- Standards are an enabler of innovation and facilitator of technological change; and
- The economic return from investment in standards makes sound business sense at both a macro and micro-economic level.

OASIS

EPCglobal

Health Level Seven

AIAG Automotive Industry Action Group

ACORD

W3C World Wide Web consortium

appendix

Example: OpenDocument Format

- An XML based specification describing the content and formatting of a document.
- Developed by a multi-vendor committee at OASIS (Organization for the Advancement of Structured Information Standards).
- Meets the common test for openness.
- Has been submitted to ISO for certification.
- Is being adopted by many vendors.
- Has generated both adoption and

Text documents (.odt) [edit]

- Abiword 2.4 (reading from 2.4, reading and writing from 2.4.2)
- eZ publish, supports import and export of writer documents via extension — Content management system
- IBM Workplace Documents 2.5+
- KWord 1.4+
- NeoOffice 1.2 Writer (import only)
- OpenOffice.org Writer (full support from 2.0, import only 1.1.5)
- Scribus 1.2.2+ imports ODT
- StarOffice 8 Writer, proprietary commercially-supported product that reads and writes OpenDocument; based on OpenOffice.org
- TextMaker 2005 (import only; in beta as of 2005)
- Visioo Writer 0.6 — Document viewer
- Writely, a web-based word processor, can read/write OpenDocument word processing (ODT) format

http://en.wikipedia.org/wiki/List_of_applications_supporting_OpenDocument

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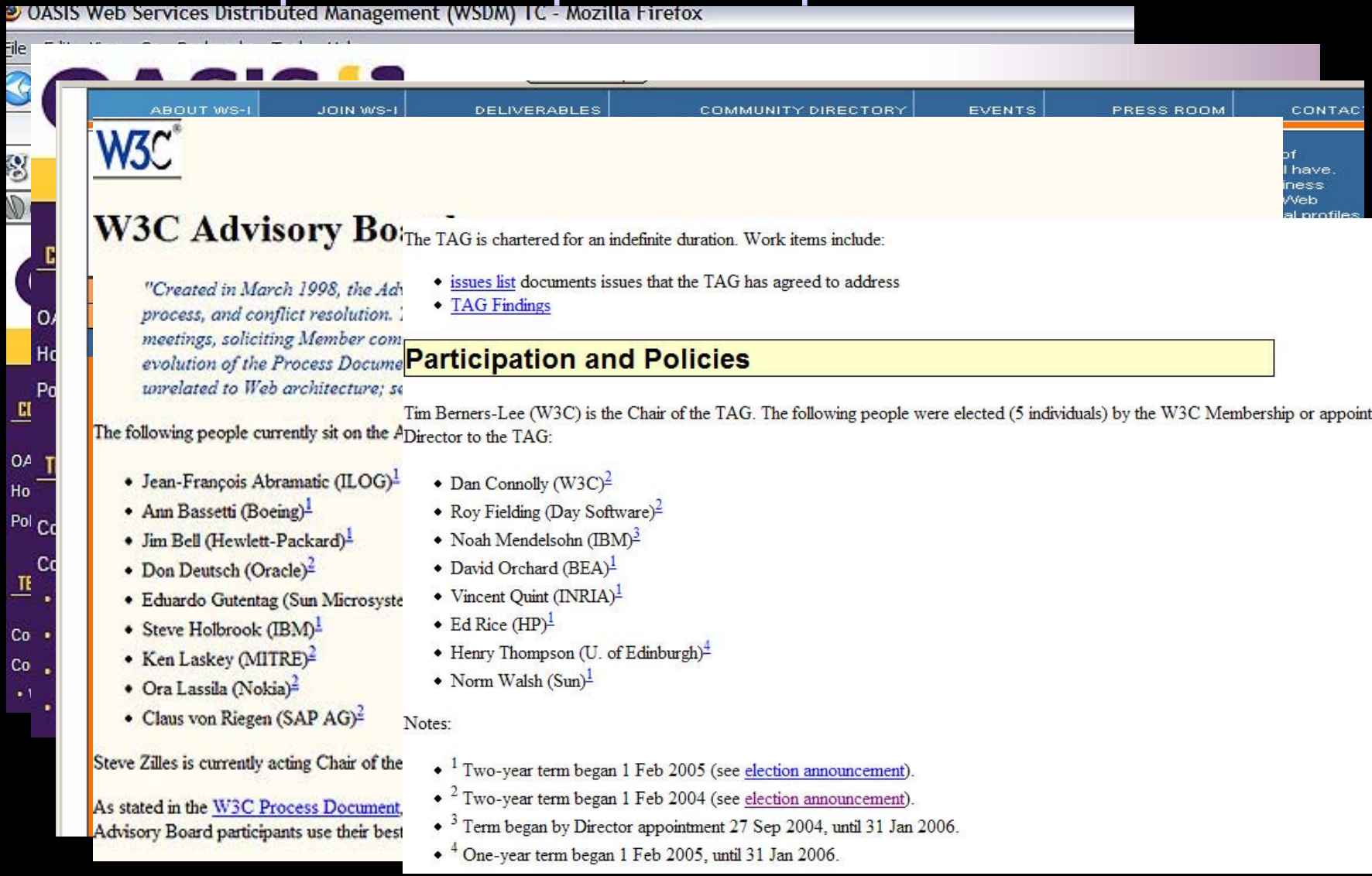
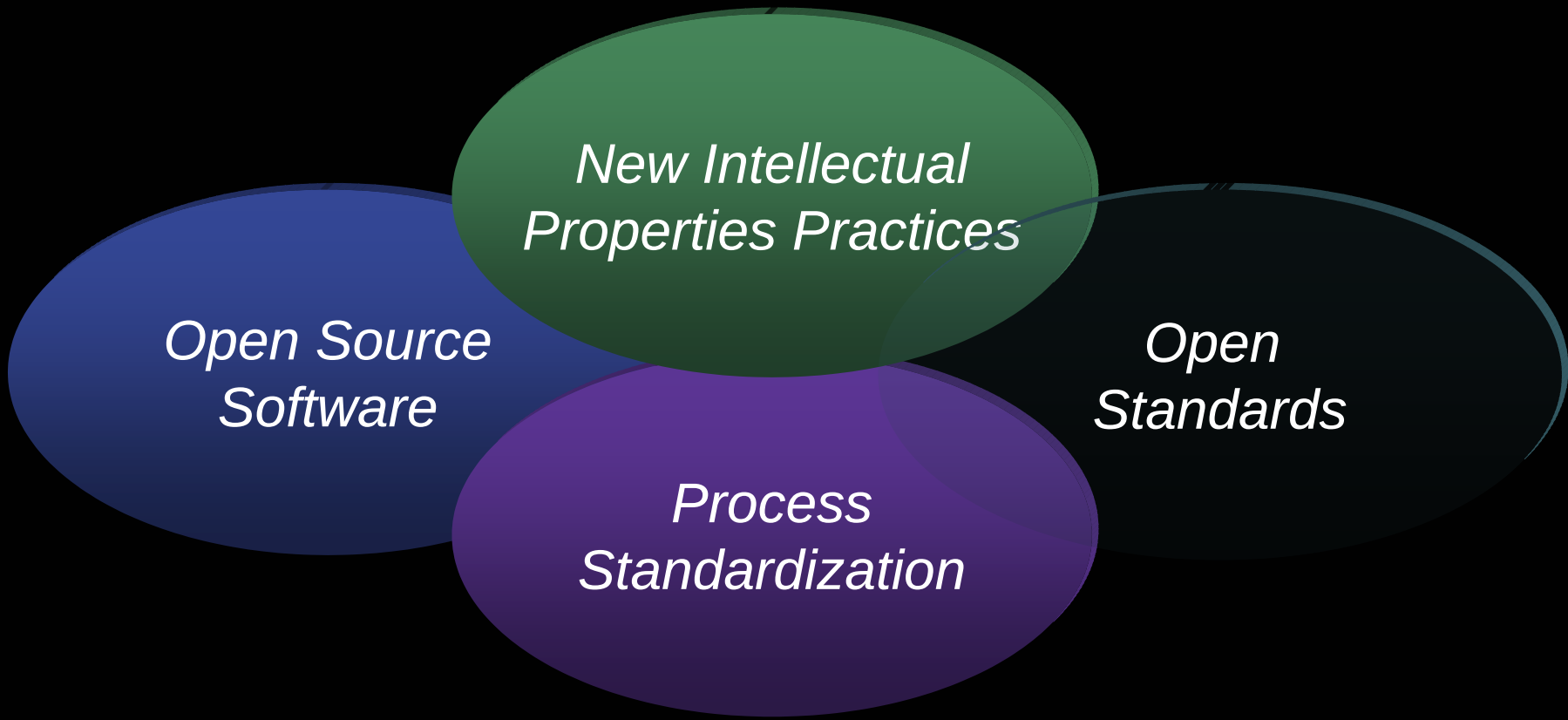


Openness Accelerates Innovation



Open Standards Accelerate Innovation
By Defining Industry-wide Best Practices

Open Industry Standards are:

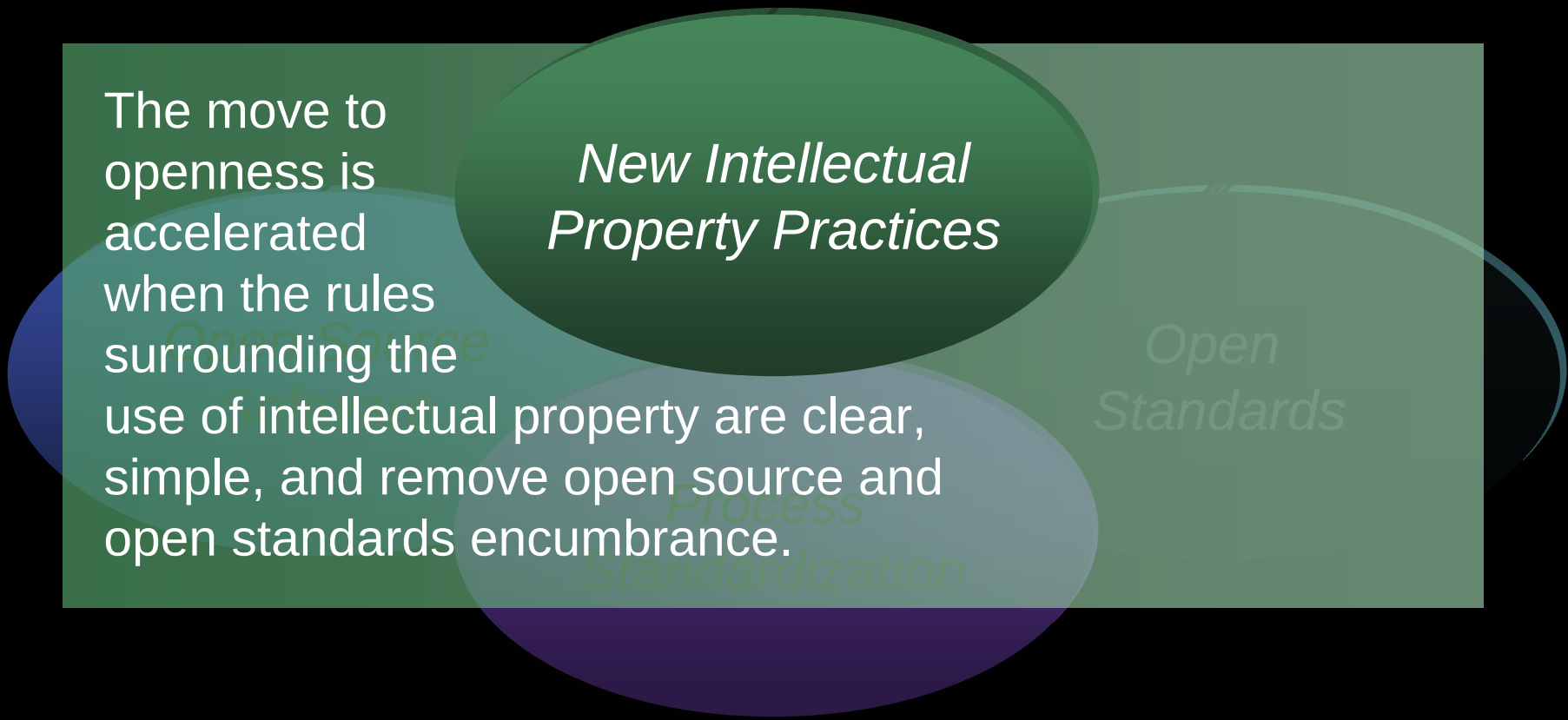
1) openly documented

2) published without restriction

3) freely available for adoption and evolve collaboratively through standards organizations

New Intellectual Property Practices

Accelerate Innovation by removing barriers to adoption and use



The move to openness is accelerated when the rules surrounding the use of intellectual property are clear, simple, and remove open source and open standards encumbrance.

What is Collaborative Innovation?

- *Community-driven* approach to problem solving
- People working *across geographical and organizational boundaries* to confront today's most pressing challenges
- *Enabled by open standards and new intellectual property practices*, it unites perspectives from a host of disciplines to:
  - Rapidly solve business issues
  - Accelerate technological advancements

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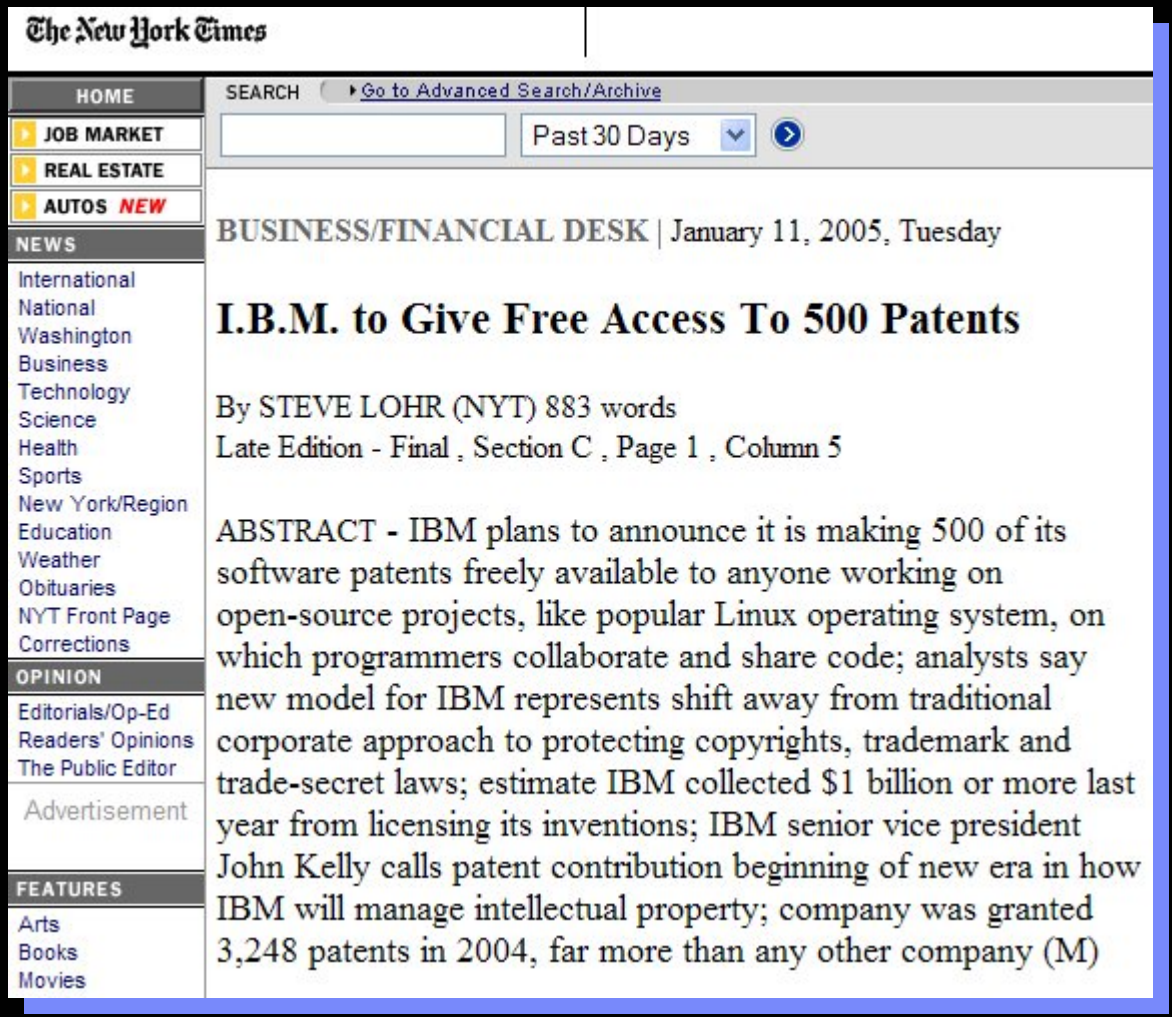
IBM's pledge to innovate



The New York Times

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BUSINESS/FINANCIAL DESK | January 11, 2005, Tuesday

I.B.M. to Give Free Access To 500 Patents

By STEVE LOHR (NYT) 883 words
Late Edition - Final , Section C , Page 1 , Column 5

ABSTRACT - IBM plans to announce it is making 500 of its software patents freely available to anyone working on open-source projects, like popular Linux operating system, on which programmers collaborate and share code; analysts say new model for IBM represents shift away from traditional corporate approach to protecting copyrights, trademark and trade-secret laws; estimate IBM collected $1 billion or more last year from licensing its inventions; IBM senior vice president John Kelly calls patent contribution beginning of new era in how IBM will manage intellectual property; company was granted 3,248 patents in 2004, far more than any other company (M)

IBM is not alone in thinking that this is a good idea

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CA gives patents to open source

Martin LaMonica, CNET News.com | 08 September 2005

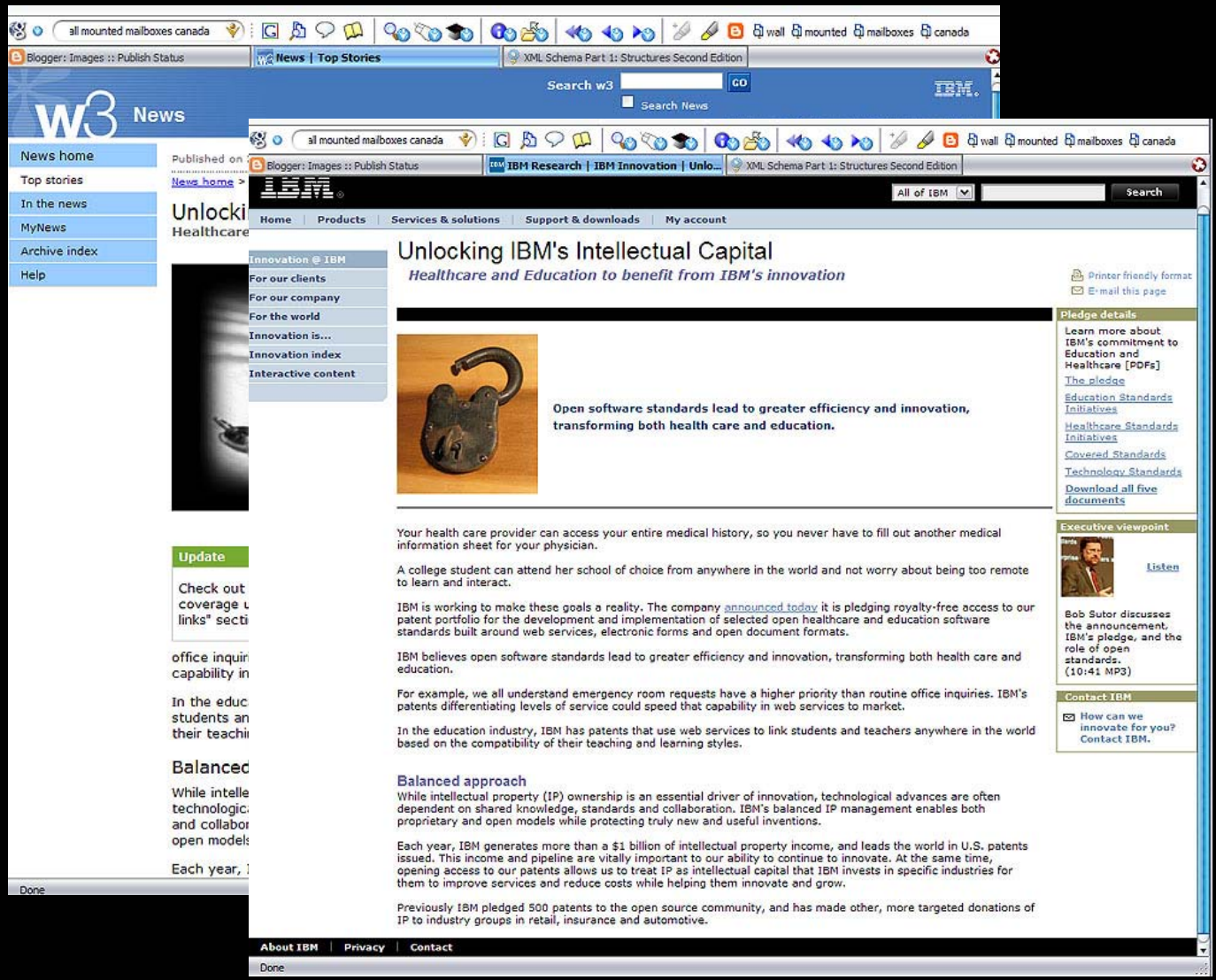
E-mail Printer Friendly Talkback

Computer Associates will give open-source projects access to 14 of its patents, the company said on Wednesday as it also announced a technology cross-licensing deal with IBM.

The US patents, which include their equivalents in other countries, address a range of technologies, covering application development, data analytics and systems management. CA said it will provide royalty-free access to the patents and not assert claims against people who make use of them.

CA said it is following IBM's lead, which earlier this year pledged 500 patents to open-source communities. CA also urged other technology companies to help create a "patent commons."

IBM's Just Getting Started!



Evolution to an Open Standard

Need	Initiator	Core group	Standards body
Customer need for technical solution to known problem Lack of industry accepted technical solution May be competing technical approaches or single proprietary solution Lack of interoperability	A company, individual or group of companies or individuals agree to address issue Resources devoted to developing best technical solution, often in collaborative fashion	Interested parties publish specifications Specifications publicly available sufficient to enable implementation, interoperability Can be implemented with little or no restrictions Developers may create reference or commercial implementation Developers declare intent to have solution accepted as standard	Standards body reviews technical solution, adopts as standard Specifications publicly available are sufficient to enable implementation, interoperability Can be implemented with little or no restrictions Standards body open to broad participation, open decision making process Standard implemented in competing IT products by multiple vendors.