Material declaration standards & SCM implementation strategies of industry for eco-compliance

Seigo ITO (Toshiba)

Chair, ELCI Working Group

(Environmental Life Cycle Information-WG)

RosettaNet Japan

November 23, 2006

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eBusiness Standards for the Global Supply Chain

Agenda

Today's presentation

1. Background

2. Material Composition Milestone Program

3. Support for both MNCs and SMEs

4. Activities of RosettaNet Japan (RNJ)

5. Engineering Information Management

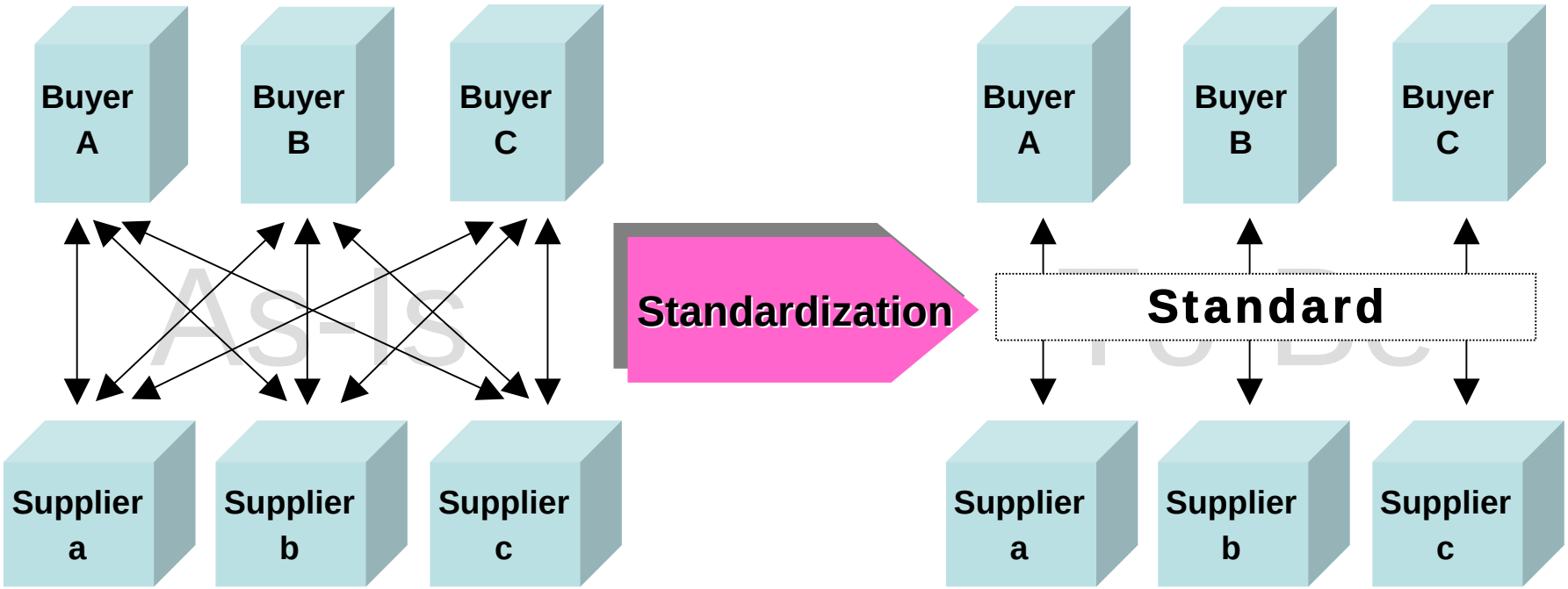
6. Summary

The Need for Material Information Exchange

Partners should use the same standards

To comply with Regulations, Buyers have to investigate if any hazardous materials exist in product.
(Investigate Green procurement)

If we can standardize the rules, we can reduce the work load for the buyers and suppliers!



Each company has different requirements, target materials/substances and response paper formats, so suppliers' work load increases.

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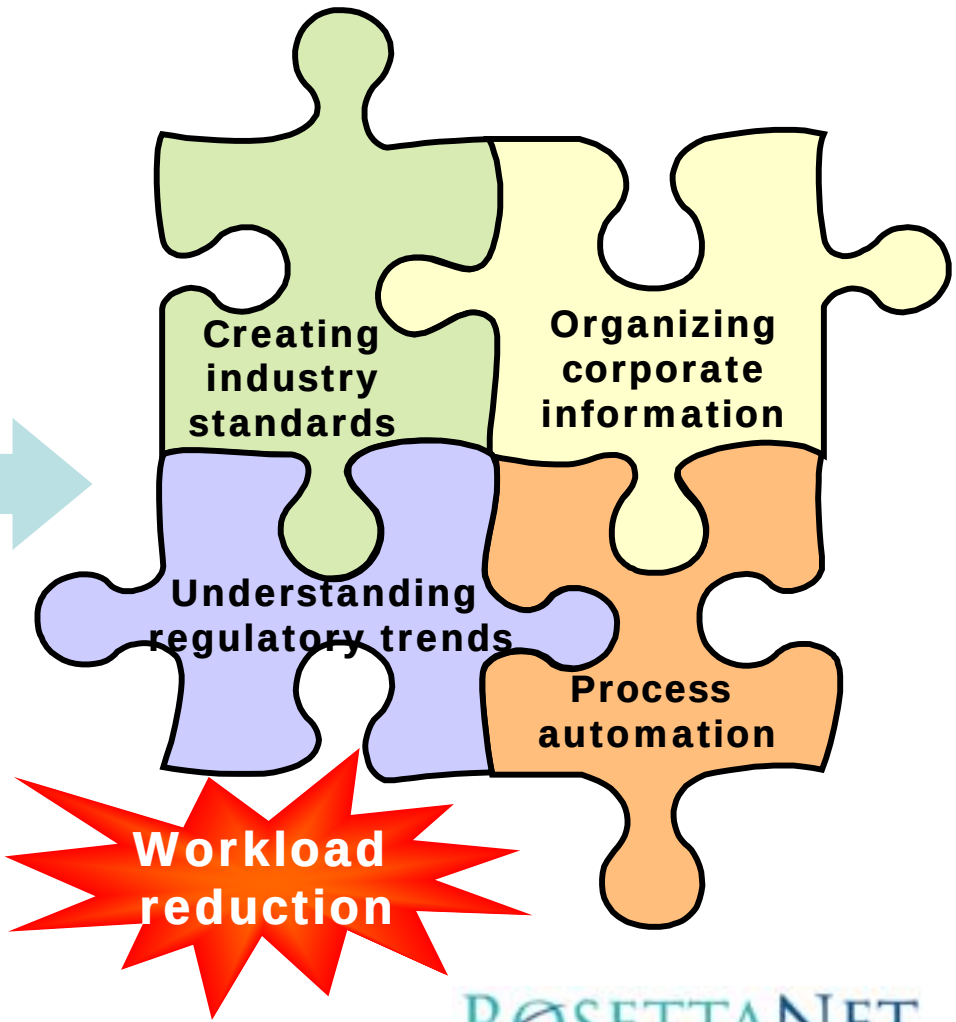
Material Declaration Issues and Solutions

Workload reduction is the biggest issue

- **Differing requirements from each company**
  - **Chemical substances**
    - **RoHS substances**
    - **JIG A&B**
    - **Company dependent**
  - **Structure**
    - **Product level**
    - **Homogeneous material level**
    - **Location (subpart) level**
  - **Input formats**
    - **Paper**
    - **Excel**
    - **Web etc.**
- **Errors due to manual input**
- **Increase in data volumes handled**



*JIG:Joint Industry Guide

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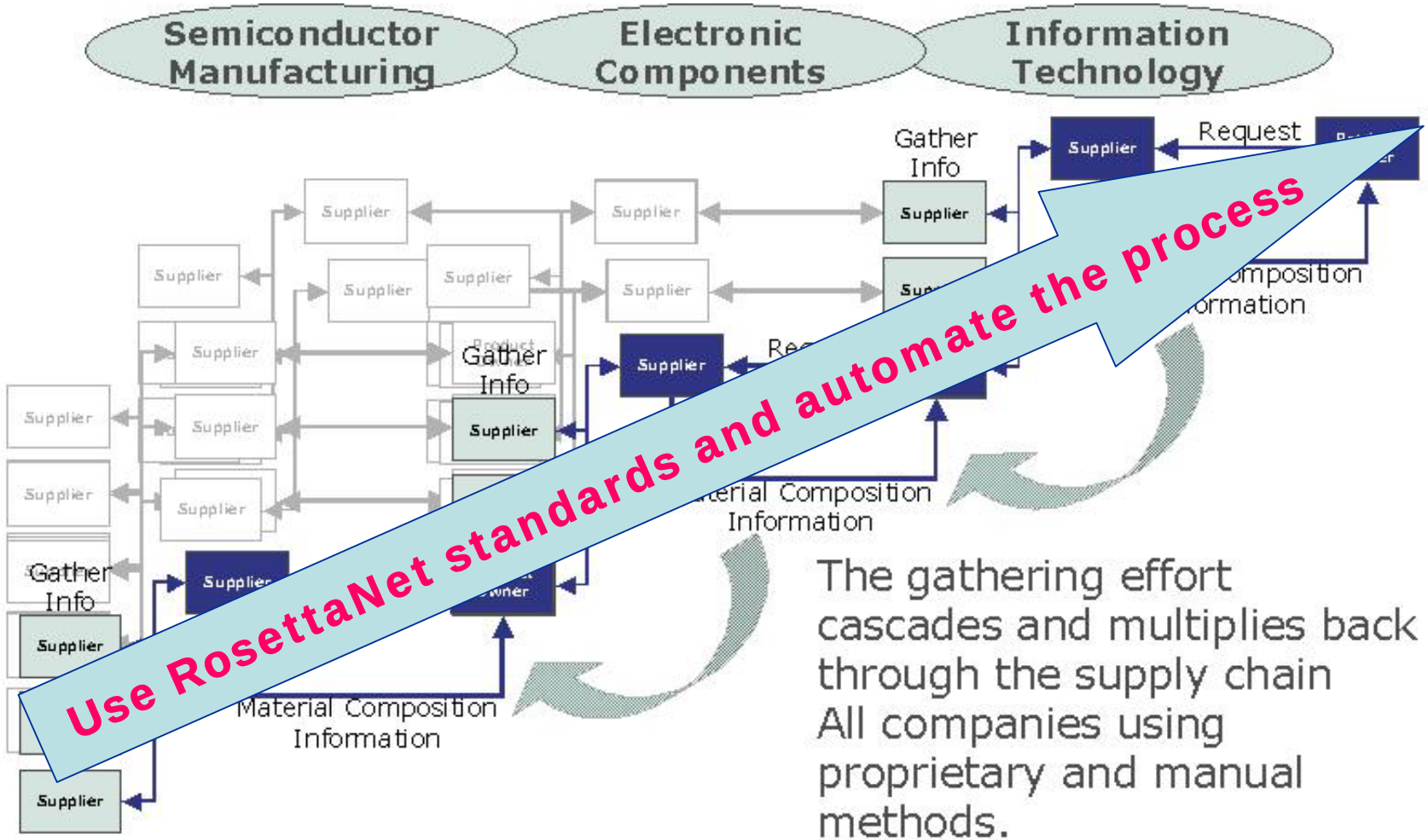
Material Composition e-Business Process

Redesigned Gathering Method



The gathering effort cascades and multiplies back through the supply chain
All companies using proprietary and manual methods.

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Material Composition

RosettaNet Milestone Program

OVERVIEW

Material composition e-business process allows companies to exchange material composition between supplier and customer. The idea is to include material composition information into other product information exchange. Main reasons to collect material composition information are upcoming legal requirements and increasing market requirements.

VALUE PROPOSITION

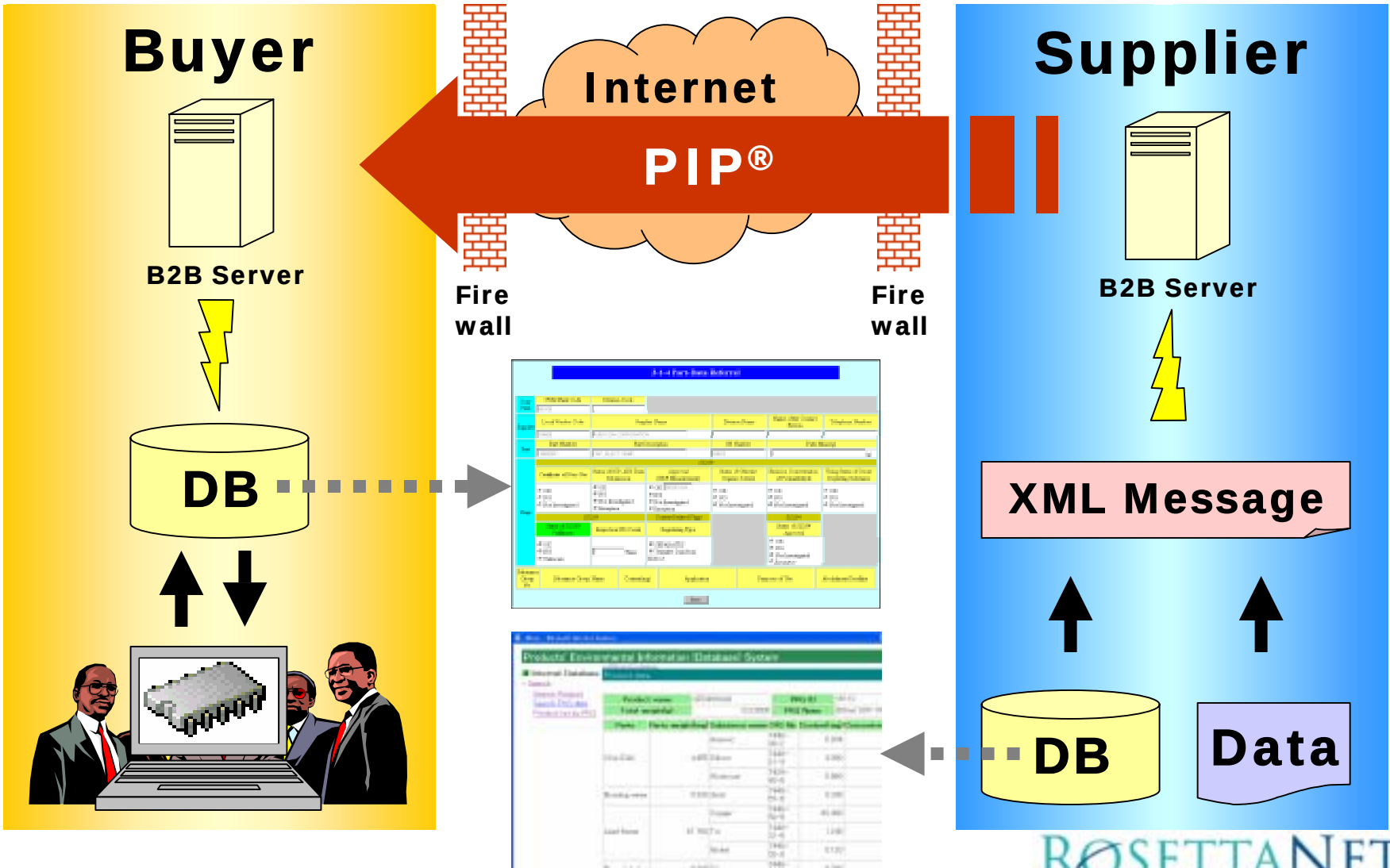
In response to government regulations and emerging customer expectations, the high-technology supply chain can streamline the exchange of material composition and related information through a standardized and automated global process.

COMPANIES

ADOS, Agilent Technologies, Amkor Technologies, Cisco Systems, Future Electronics, Intel, Kyocera, LG Electronics, Motorola, National Semiconductor, Nokia, SAP, Sony Electronics, STMicroelectronics, Synapsis Technology, Texas Instruments

Sending Data using RosettaNet

From one backend system to another backend system



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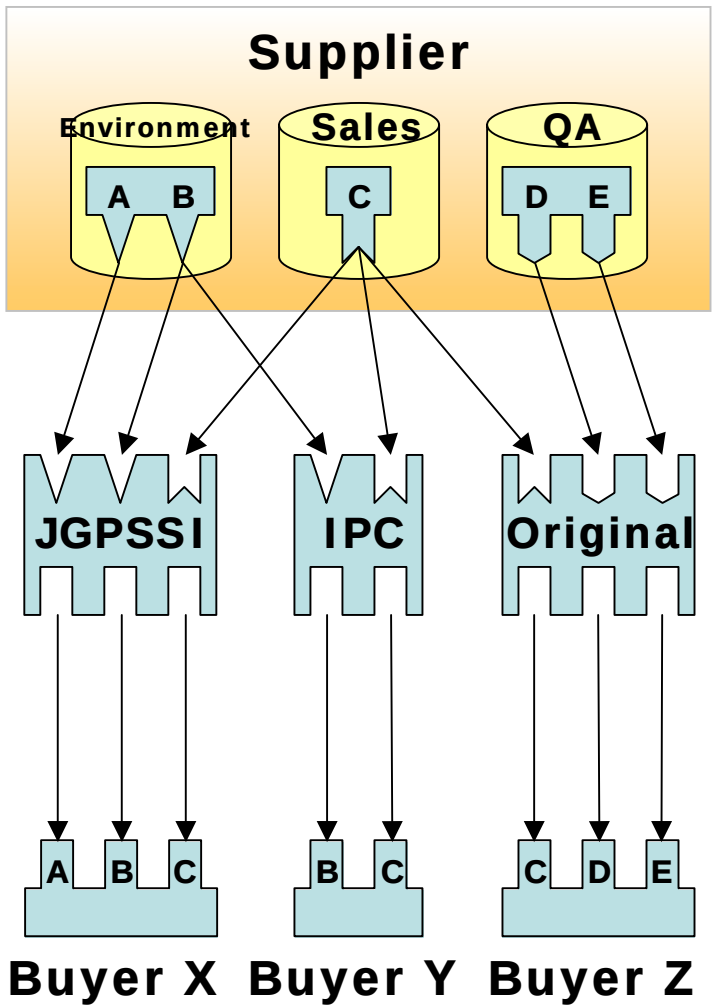
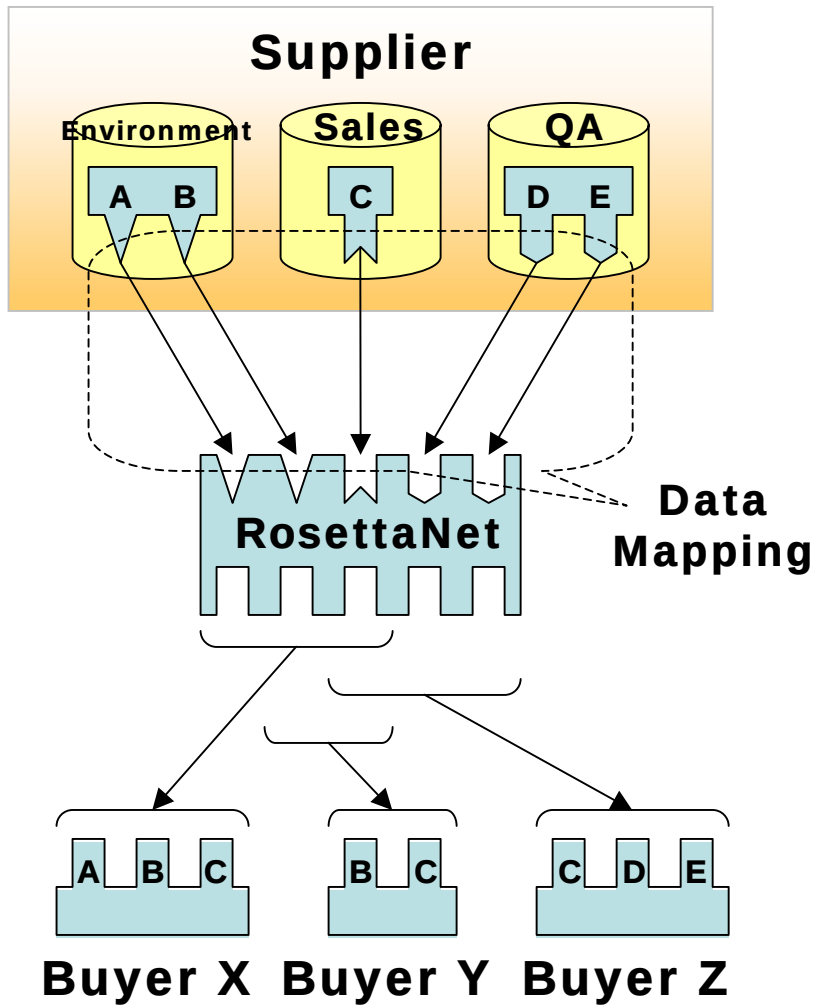
RosettaNet does not depend on any format

Handles contents defined in any format





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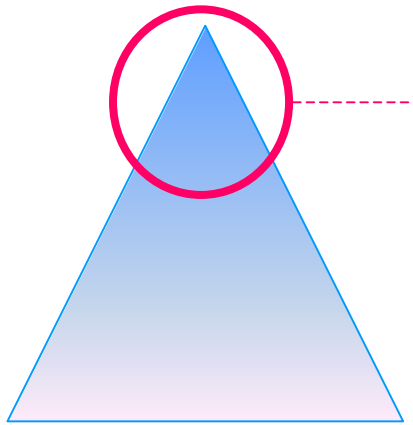
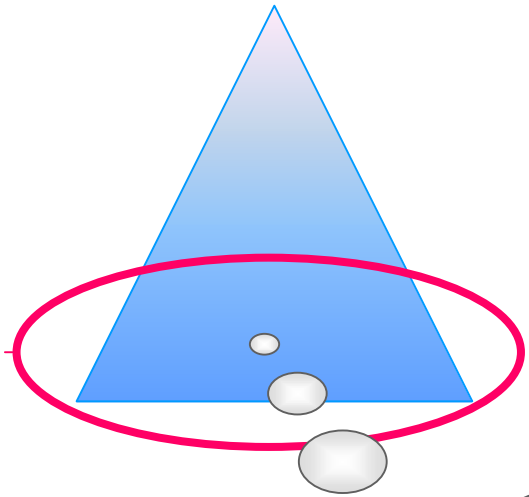
Emphasis in B2B exchanges depends on the kind of information

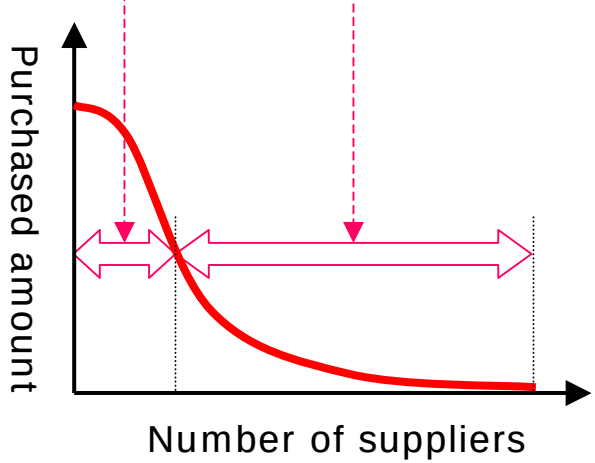
Comparing purchasing with material reporting

Purchasing Information

Materials information







Gathering information from SMEs is essential.

*SMEs：Small and Medium-Sized Enterprises

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Standardization activities in materials reporting formats

Interrelationship between standardization organizations

U.S.

JEDEC

EIA

RosettaNet

U.S.

Joint Industry Guide

IPC1752

IPC

iNEMI

JGPSSI

(EICTA)

Japan

Europe

JAPAN

JGPSSI Format

Global Standardization

JEITA

Japanese National Committees of the IEC

IEC/TC111

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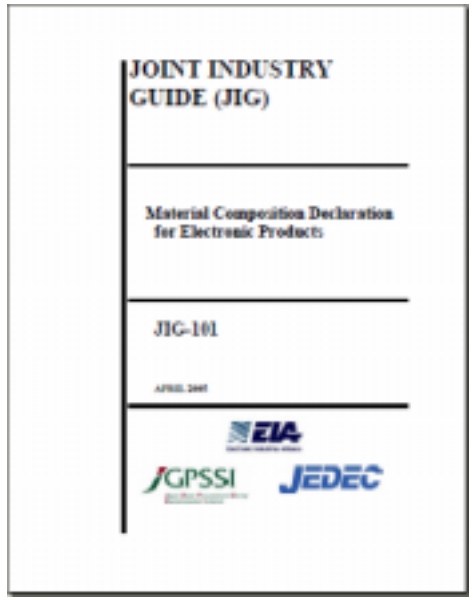
Material Declaration Format

2 Formats that comply with JIG (Joint Industry Guide)

1) JGPSSI Format

- Developed by JGPSSI
- Excel Format
- Standard type and Detailed type
- Rolled Format compliant
  -> Only the Material/Substance Category in the products
- Ver.3 released Jun. 13 (currently Ver.3.11)
  -> http://210.254.215.73/jeita_eps/green/green11-2eg.htm



Released May 25, 2005

2) IPC-1752

- Developed by iNEMI, IPC, RosettaNet
- PDF Format (Ver.7.0)
- Format defined in IPC-1752-1/1752-2
- Full Format compliant
  -> BOM Level description available
- Ver.1.0 released March 9
  (Ver.1.1 under development; Ver.2.0 to be final version)
- U.S. is proposing IPC-1752 to TC111 WG1
  -> http://members.ipc.org/committee/drafts/2-18_d_MaterialsDeclarationRequest.asp

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IPC1752

Multiple reporting levels and participating companies

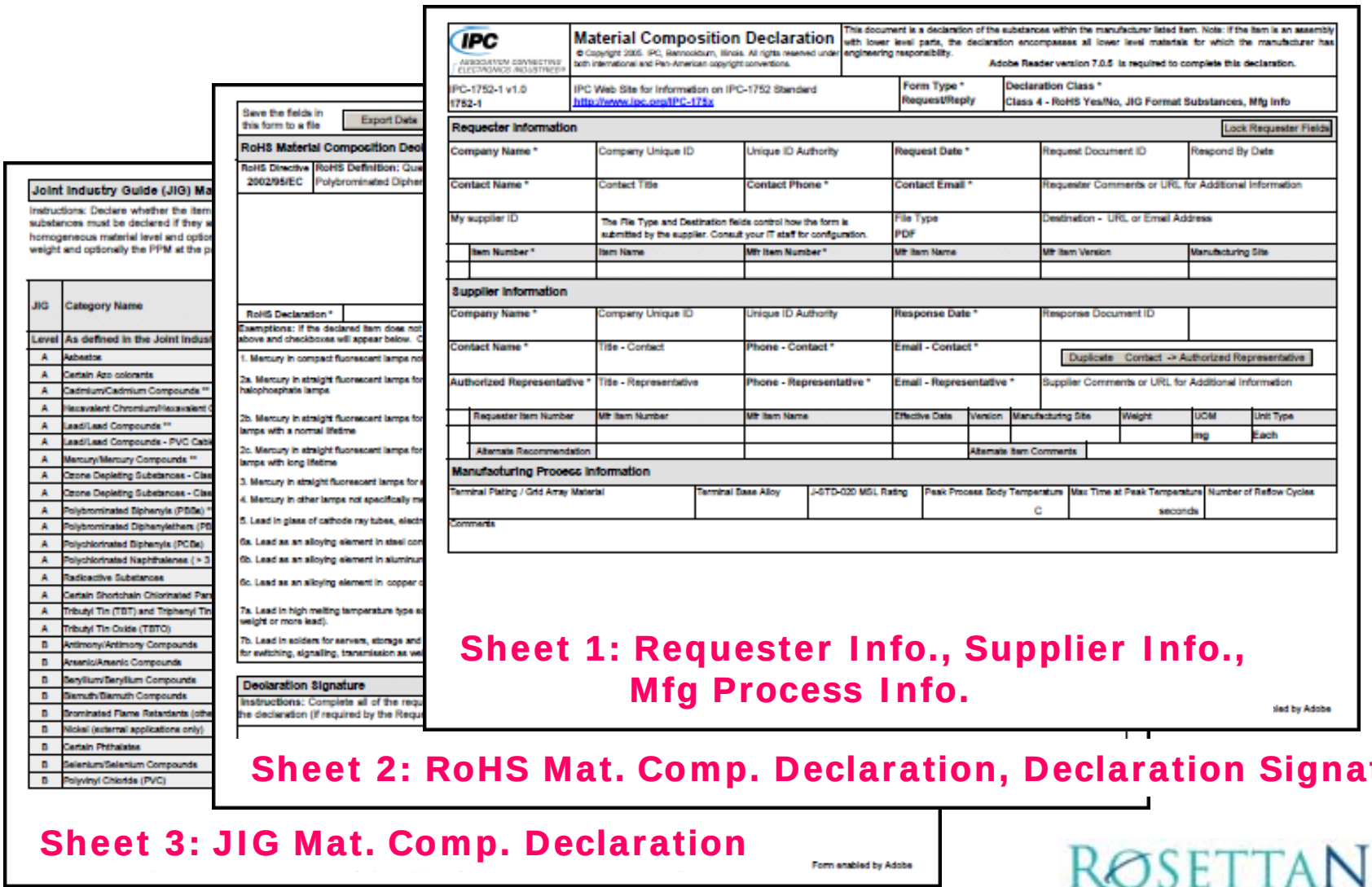
Class	Declaration Type				Form type	
	RoHS Yes/No	JIG formatted substances	RoHS, JIG & other substances	Manufacturing Process Information	IPC 1752-1	IPC 1752-2
Class 1	X				X	X
Class 2	X			X	X	X
Class 3	X	X			X	
Class 4	X	X		X	X	
Class 5	X		X			X
Class 6	X		X	X		X

The following companies have indicated that they will support/use the IPC-1752 standard for materials declaration. (http://members.ipc.org/committee/drafts/1752_Support.asp)

Agere Systems, Celestica, Inc. , E2open, Foxconn Electronics Inc., Freescale Semiconductor, Future Electronics, GE Security, The GoodBye Chain Group, Jabil Circuit, LG Chemical, Lucent Technologies, Maxtor Corp., Molex Corporation, National Semiconductor, Panasonic Electronic Devices Co., Ltd., Qualcomm, Inc., Solectron Corporation, Sun Microsystems, Synapsis Technology, Texas Instruments, Tyco Electronics etc.

IPC1752 details

e.g., IPC1752-1



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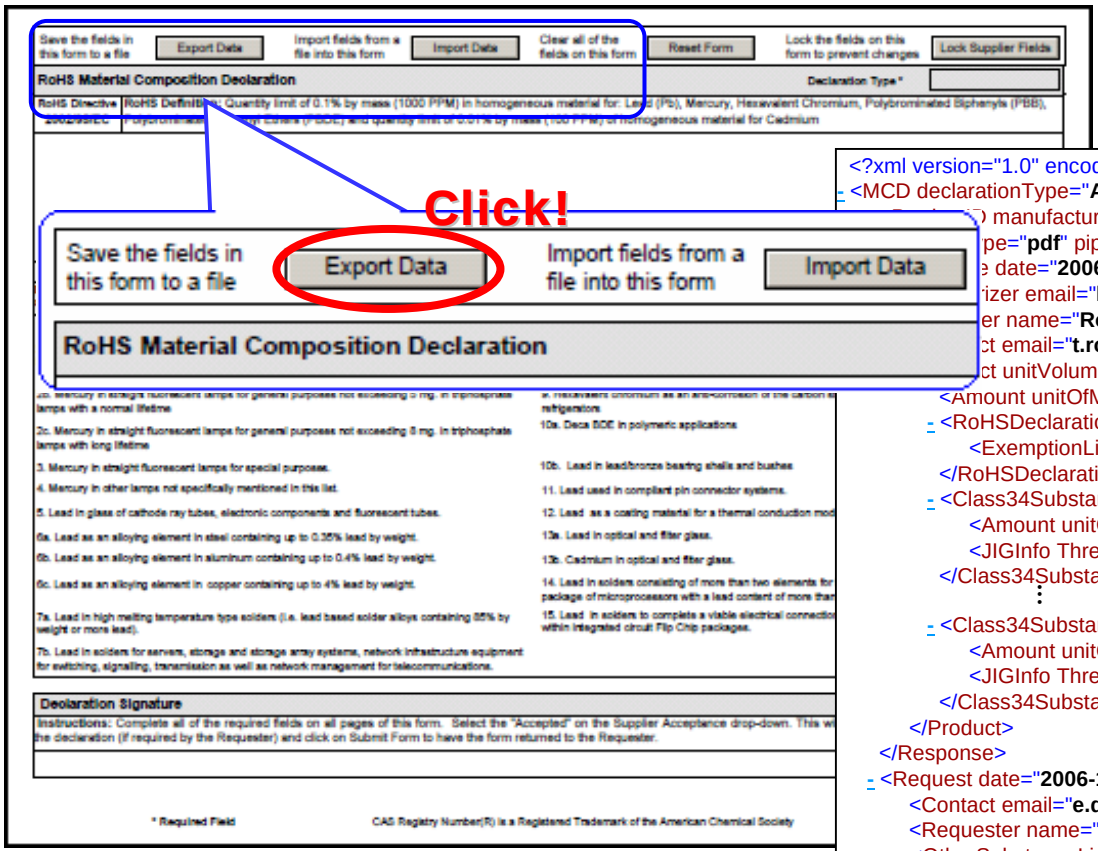
IPC1752 functionality

XML import and export




```
<?xml version="1.0" encoding="UTF-8" ?>
- <MCD declarationType="All" formType="Request/Reply" ipcStandard="1752-1" version="1.0">
    ) manufacturerItemNumber="XYZ456" requesterItemNumber="ABC123" />
    pe="pdf" pipIdentifier="2A13" pipVersion="D11.00.00" tpirVersion="01.00" />
    e date="2006-12-11" fieldLock="unLock">
    izer email="h.rosetta@rn.com" name="Hanako Rosetta" phone="0333334444" />
    er name="Rosettanet Corporation" />
    ct email="t.rosetta@rn.com" name="Taro Rosetta" phone="0311112222" />
    ct unitVolume="Each">
      <Amount unitOfMeasure="mg" />
    - <RoHSDeclaration>
        <ExemptionList version="ExemptionListV1" />
      </RoHSDeclaration>
    - <Class34SubstanceCatagory jigLevel="A" name="Asbestos">
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        <JIGInfo Threshold="Intentionally Added" overThreshold="false" />
      </Class34SubstanceCatagory>
      ⋮
    - <Class34SubstanceCatagory jigLevel="A" name="Tributyl Tin Oxide (TBTO)">
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    </Product>
  </Response>
- <Request date="2006-10-20" fieldLock="unLock">
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    <Requester name="Ecodesign Inc." />
  - <OtherSubstanceList>
    - <SubstanceCatagory>
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</MCD>
```

This button produces XML data from the PDF content (Ver.2.0 will output a PIP)

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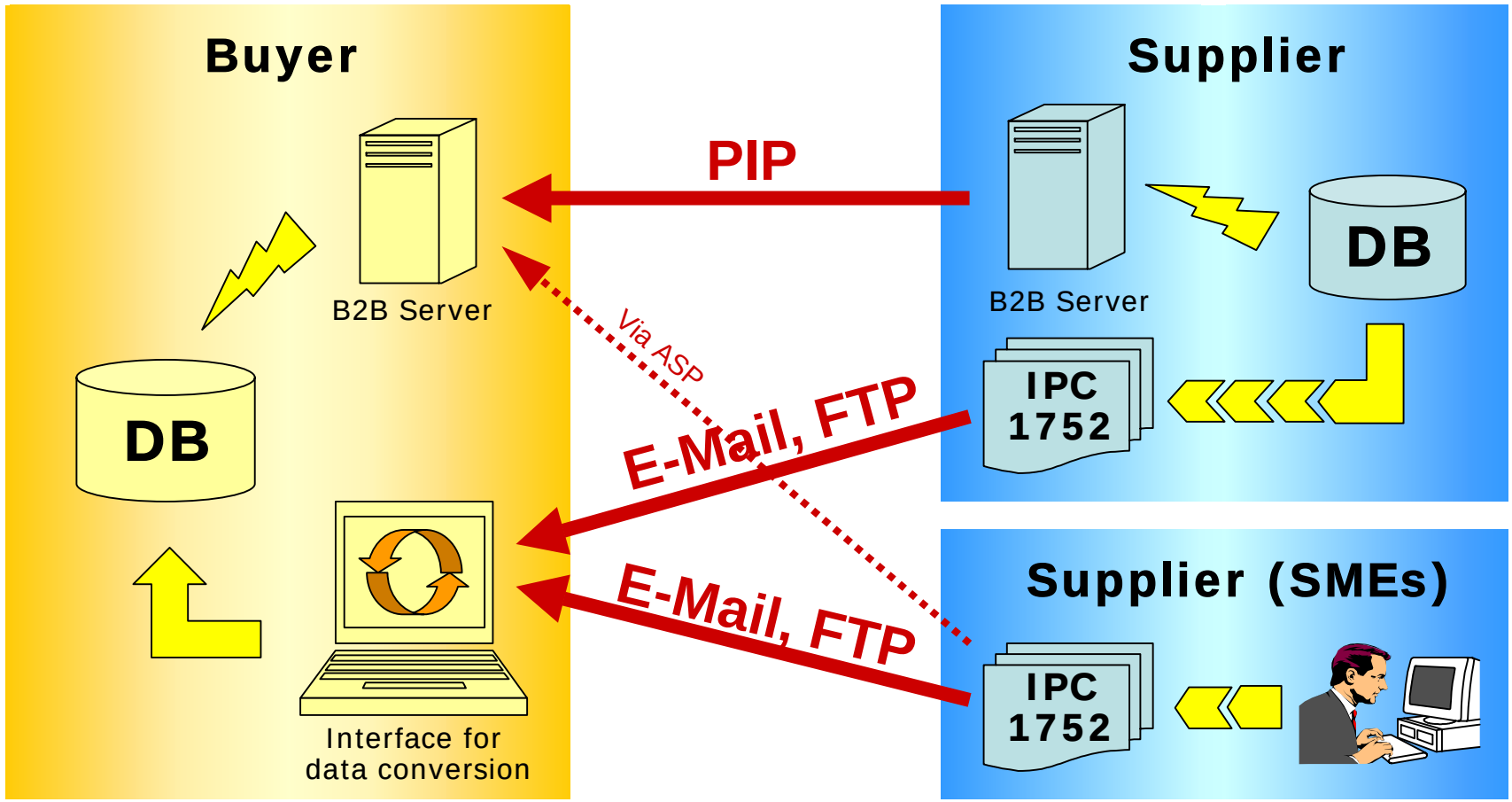
Gathering materials information from the buyer's point of view

A simple input form is necessary for SMEs



Note: PIPs are in XML. IPC1752 can import/export XML.

*ASP:Application Service Provider

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Nokia's strategy for materials reporting

Using both PIP2A13 and IPC1752

The Standardized Approach

- Speed, visibility and collaboration in extended value chain
- Efficiency in each business transaction
- Efficiency and speed in implementing new business processes with trading partners
- Standard-based automated processes

ROSETTANET as key enabler

1. RosettaNet Partner Interface Processes (PIP 2A13)
   - Global, industry-wide standard
   - System-to-system integration
   - Efficient solution
     - Flexibility
     - Not Material Composition specific -> Re-usability & cost efficiency
     - Human effort optimized
   - Enables integrated approach
     - Material Composition -> Part of normal business (design, component choices,...)
2. IPC 1752
   - Adobe Acrobat-based & RosettaNet PIP 2A13 compatible
   - Supports Nokia approach to data collection

Source:"Managing Material Composition information at Nokia today and in the Future", Mr. Veli Isoniemi, GPC2006 (http://www.rosettanet.gr.jp/events/GPC2006/doc/2-2-C.pdf)

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1. Background
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4. **Activities of RosettaNet Japan (RNJ)**
5. Engineering Information Management
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RNJ Members

Board members and partners

Board Members

- Fujitsu Limited
- Microsoft Corporation
- NEC Corporation
- Nihon UNISYS, Ltd.
- NTT Communications Corporation
- Otsuka Corporation
- Renesas Technology Corporation
- Rohm Co., Ltd.
- Sony Corporation
- Toshiba Corporation

Partner Members

- ADOS Co., Ltd.
- ADVANTEST CORPORATION
- BEA Systems Japan, Ltd.
- Dai Nippon Printing Co.,Ltd.
- Data Applications Company Limited
- E2open Japan
- Electronic Devices Information Service Co.,Ltd.
- Freescale Semiconductor Japan Ltd.
- Global eXchange Services Japan Corp.
- Hitachi, Ltd.
- IBIDEN CO.,LTD.
- Itochu Techno-Science Corp.
- Japan Aviation Electronics Industry, Limited
- JFE Systems, Inc.
- JSR Corporation
- Justsystem Coporation
- Kintetsu World Express, Inc.
- Kyocera Corporation
- Matsushita Electrical Industrial Co., Ltd.
- Mitsui Knowledge Industry Co., Ltd.
- Mizuho Corporate Bank, Limited
- MOLEX JAPAN CO LTD
- NEC Electronics Corporation
- NEC TOKIN Corporation
- NICHICON CORPORATION
- Nihon Texas Instruments Ltd
- Nippon Express Co., Ltd.
- NIPPON CHEMI-CON CORPORATION
- NS Solutions Corporation
- NTT DATA CORPORATION
- PFU Active Labs. Limited
- PIONEER CORPORATION
- Sanshin Electronics Co, Ltd
- SANYO Electric Co.,Ltd.
- SAP Japan Co., Ltd.
- SEIKO EPSON CORPORATION
- Sharp Corporation
- SHINKO ELECTRIC INDUSTRIES CO.,LTD.
- Shinko Shoji Co.,Ltd.
- SOFTBANK TECHNOLOGY CORP.
- Sterling Commerce K.K.
- STMicroelectronics K.K.
- SUMITOMO BAKELITE CO.,LTD.
- Sumitomo Mitsui Banking Corporation
- Sun Microsystems K.K.
- TAIYO YUDEN CO,LTD.
- The Bank of Tokyo-Mitsubishi UFJ.,Ltd.
- TIS Inc.
- Toppan Printing Co.,Ltd.
- TOSHIBA DOCUMENTS CORPORATION
- Toshiba Logistics Corporation
- Tsuken Advanced System Co., Ltd.
- Tyco Electronics AMP K.K.

Coalition Partners

- Japan Electric Measuring Instruments Manufacturers' Association
- JAPAN PETROCHEMICAL INDUSTRY ASSOCIATION (JPCA)
- Object Technology Institute, Inc.
- Common XML/EDI Practice Promotion Council (COXEC)

Member organizations
68 (as of September, 2006)

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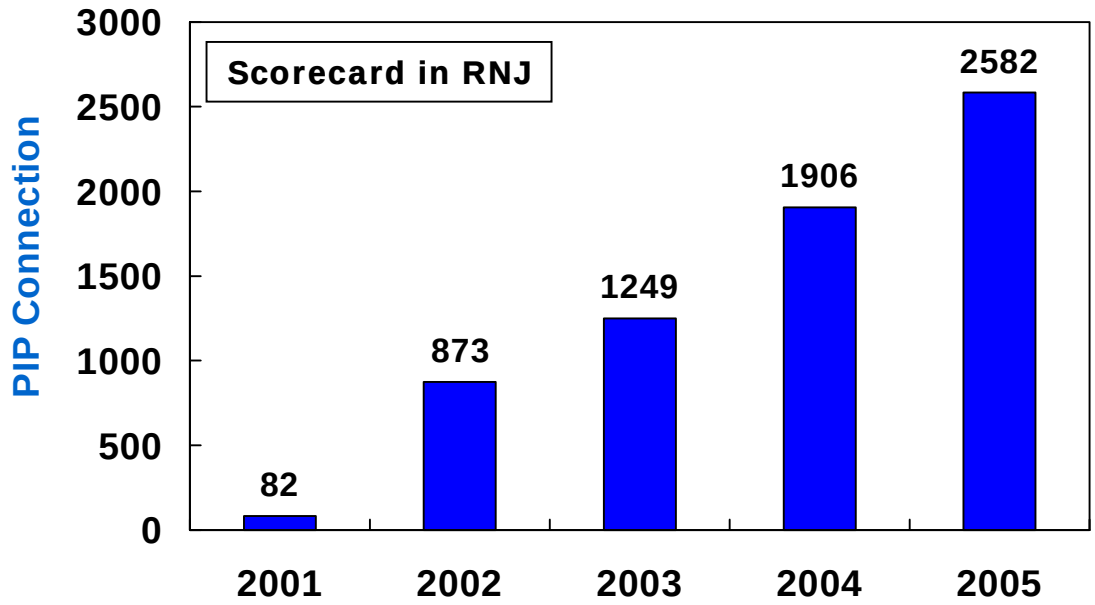
Activities of RNJ

RNJ Key Plans and Accomplishments for 2006

- **RN Implementation support for more RN standards Adoption**
  - **EIM, Material Composition, PCN/EOL**
- **New Industry Development**
  - **Chemical**
- **Contribution to RN Standards & collaboration with RNG and RN Affiliate Organizations**
  - **RNTD**
- **Member recruitment and Membership Service Enhancement**
- **Success of GPC2006**

http://www.rosettanet.gr.jp/english/events/GPC2006/index.html



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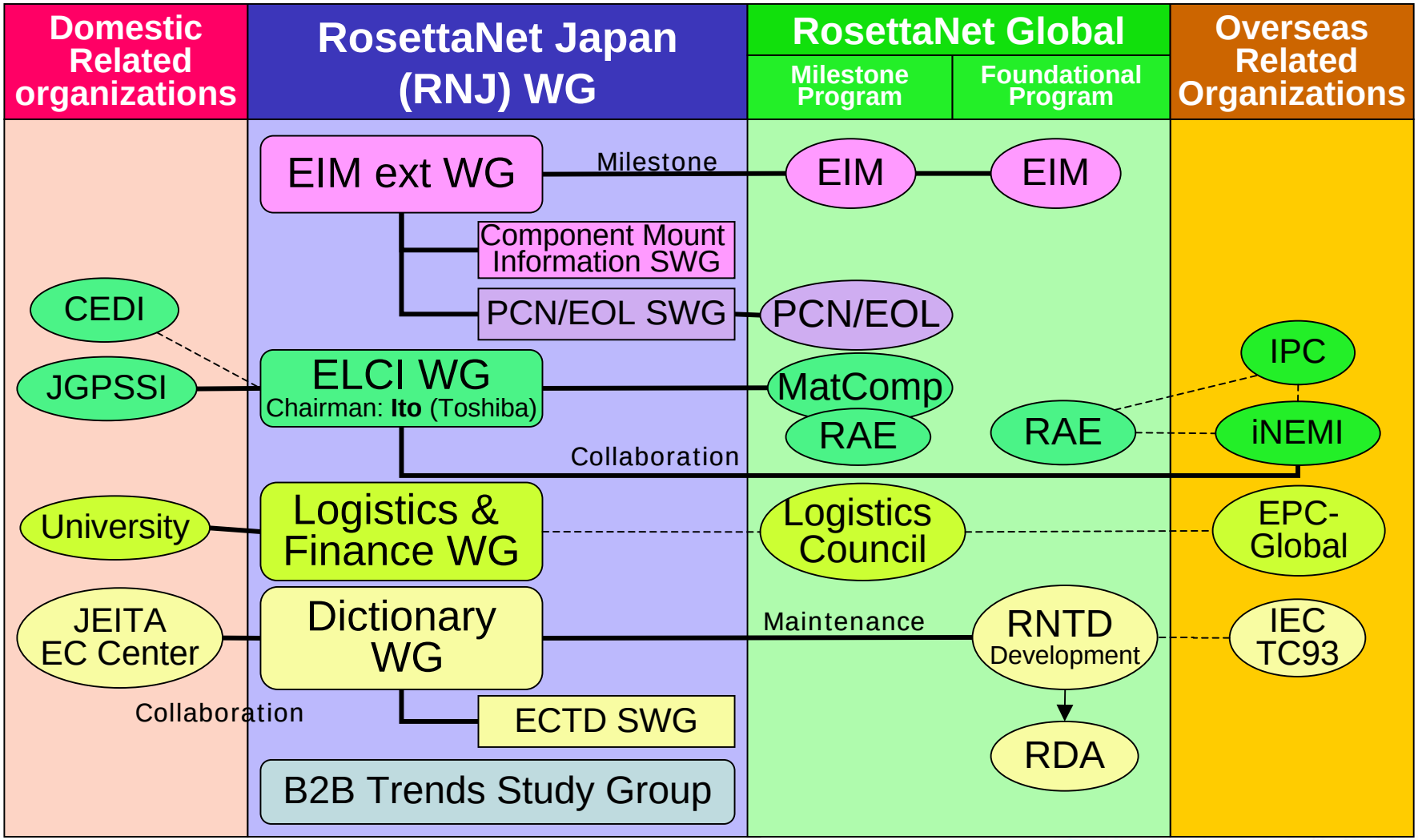
RNJ Working Group relationship

Collaboration with related organizations



EIM:Engineering Information Management
PCN/EOL:Product Change Notification/End Of Life
ELCI:Environmental Life Cycle Information

Activities of ELCI-WG

Scope of 2006 activities

1. Promotion of implementations

- Increasing PIP implementations
- Creating implementation guidelines
- Releasing IPC1752 in Japanese
- Investigating data models

2. Compliance

- Study of regulations (EuP, REACH, etc.)
- Study of standardization trends (e.g., IEC/TC111)

3. Cooperation with other organizations

- Collaboration with JGPSSI, iNEMI, IPC, etc.
- Exchanging information with upstream and downstream industrial organizations

4. Publishing information

- Planning workshops
- Participating exhibitions and holding seminars
- Publishing useful information on our website
- Press release

JPCA Show2006
(May 31-June 2)
@RNJ's Booth

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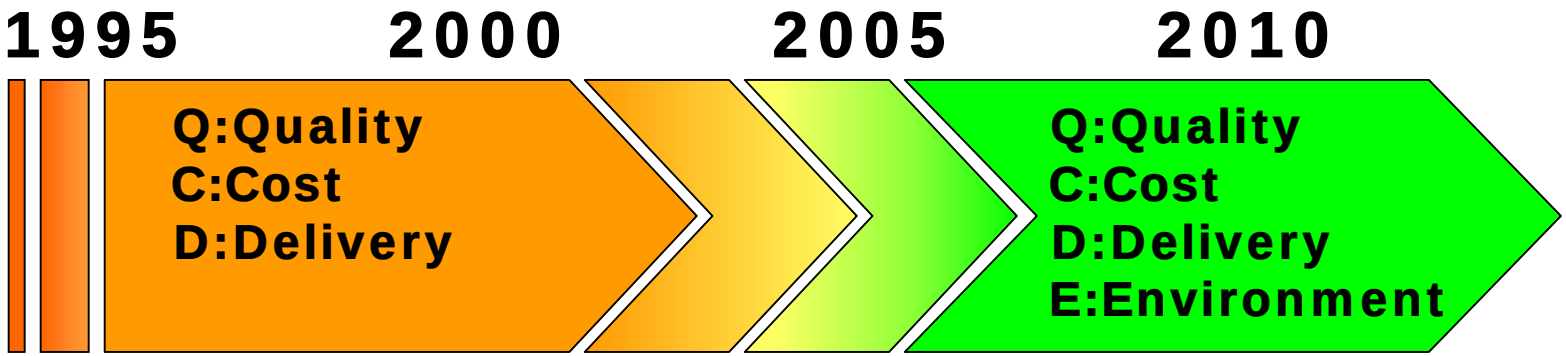
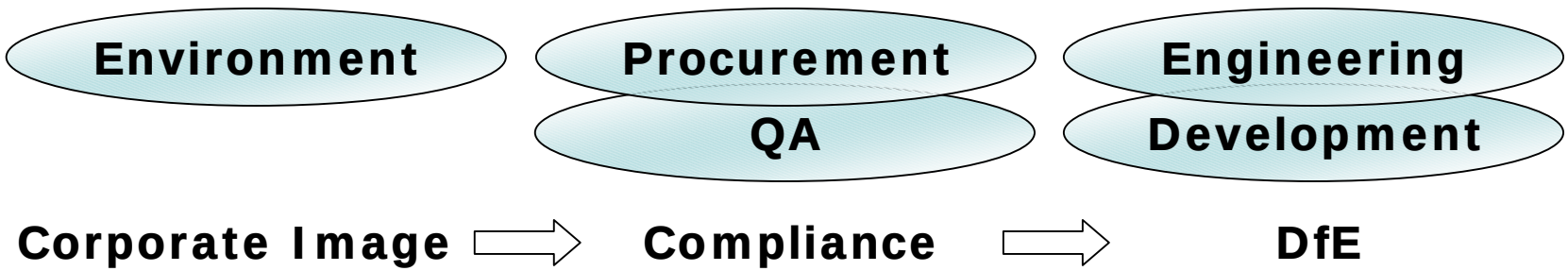
Change in Trading Requirements

Environmental Assurance is a mandatory requirement



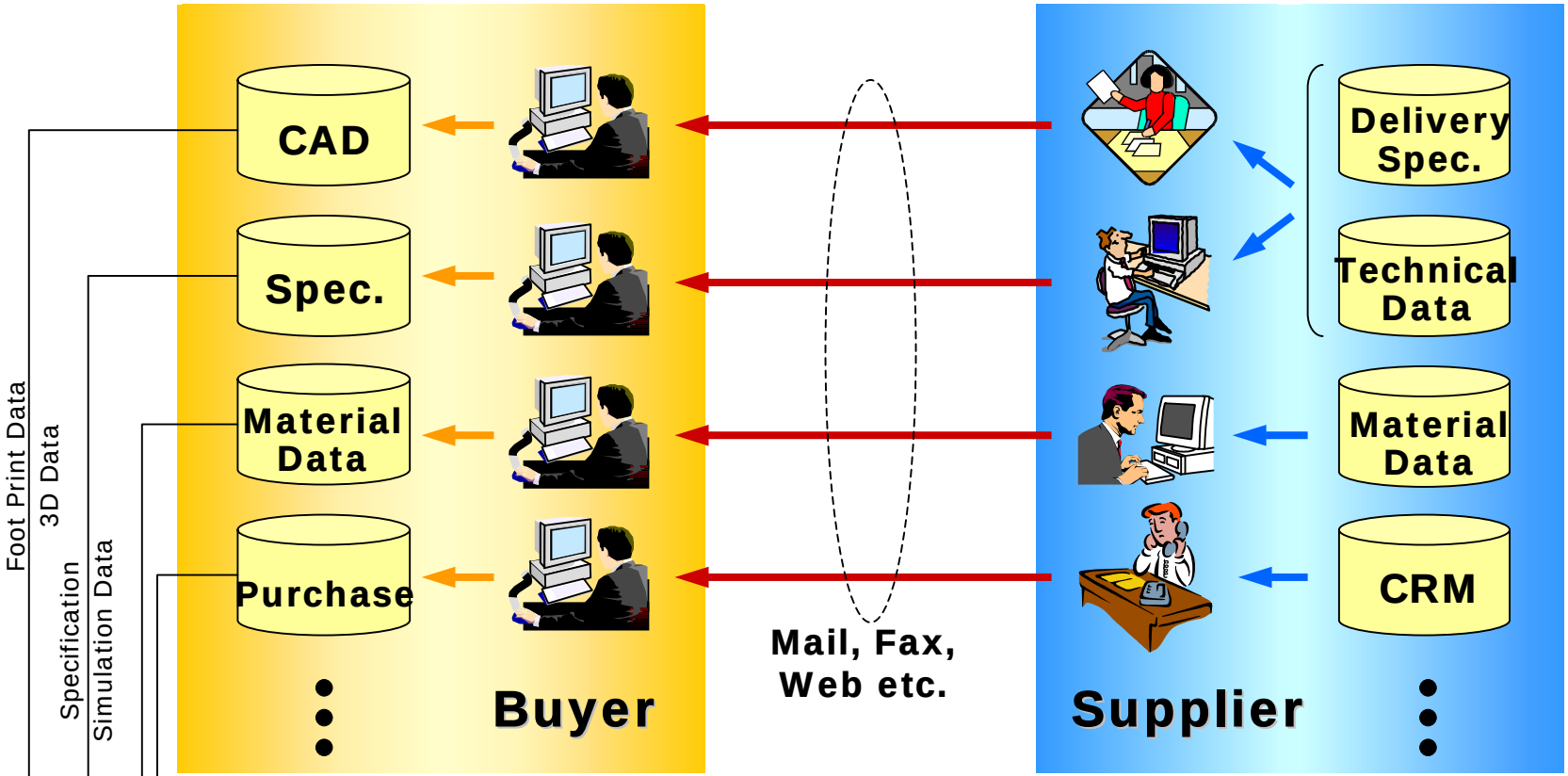
Main Section



*DfE:Design for Environment

Material reporting in the future

Current design process



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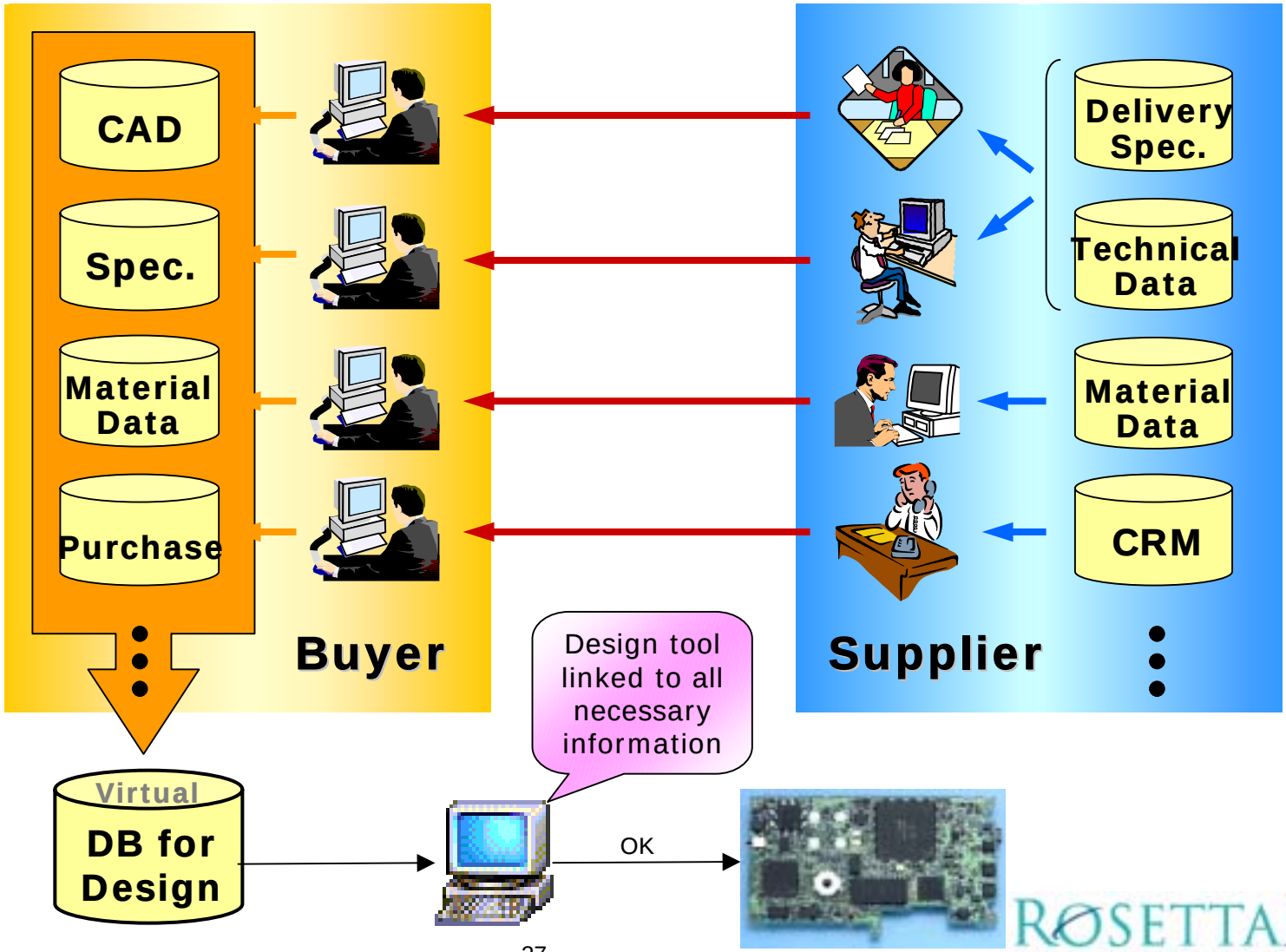
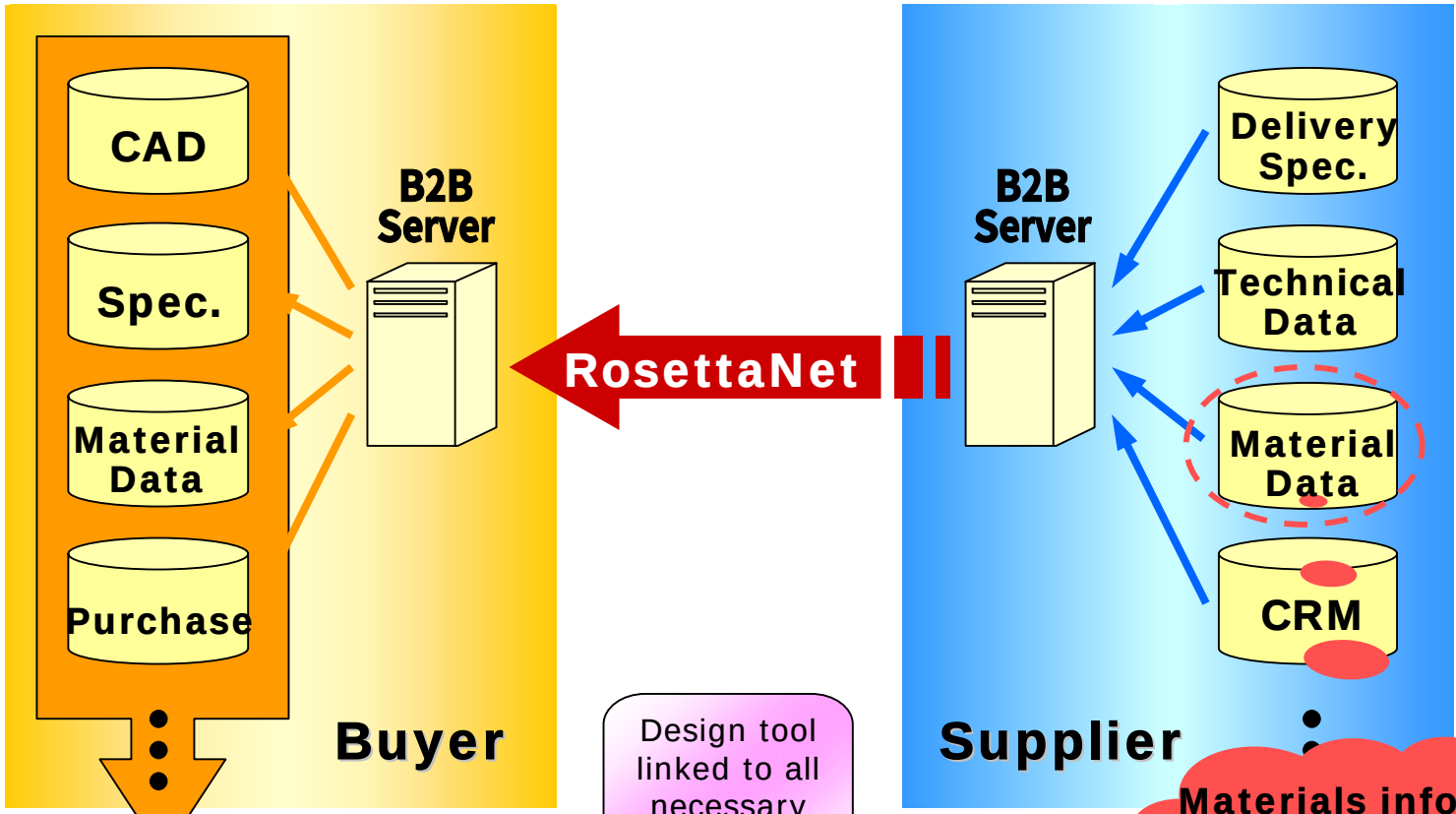
Material reporting in the future

1st step in BPR (Business Process Re-engineering)



Material reporting in the future

2nd step in BPR (Business Process Re-engineering)



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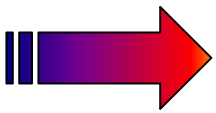
Summary

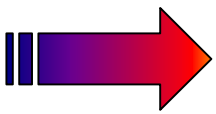
Materials reporting activities in RosettaNet

- **Flexible materials reporting under RosettaNet**
  - **Global standard**
  - **Covering both MNCs and SMEs**
  - **Handling various formats**



PIP and IPC1752

- **Corporate Business Process Re-engineering**
  - **Materials information is just one part of engineering information**



EIM

(Engineering Information Management)

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http://www.rosettanet.gr.jp

RosettaNet Japan Secretariat
e-mail: rnj-contact@rosettanet.gr.jp
Tel:+81-3-5245-1079 Fax:+81-3-5245-7517

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