Pathway in Enterprise Systems Engineering (PENS)

Inter-organisational Information Systems (IOS)

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Agenda

- IOS explained
- Benefits and reasons
- Technologies and tools
- Partner Relationship Management
- Supplier Relationship Management

Inter-organisational Information Systems (IOS) defined

- Interorganizational information systems involve information flow among two or more organizations.

- Its major objective is efficient processing of transactions, such as transmitting orders, bills, and payments.

- These are not new, based on the 90s concept of B2B.

Reasons for IOS

- Reduce the risk in the organization

- Pursue economies of scale

- Benefit from the exchange of technologies

- Increase competitiveness

- Overcome investment barriers

- Encourage global communication

Source: https://en.wikipedia.org/wiki/Interorganizational_system

IOS types

- B2B trading systems – these systems are designed to facilitate trading between (among) business partners

- B2B support systems – these are non-trading systems such as hubs, directories, and other services.

- Global systems – global information systems connect two or more companies in two or more countries (e.g. SABRE airline system).

- Electronic Funds Transfer (EFT) – telecommunications networks transfer money among financial institutions.

- Groupware

- • Groupware technologies facilitate communication and collaboration between and among organizations.

- Integrated messaging

- • A single transmission system can be used to deliver electronic mail and fax documents between organizations.

- Shared databases

- • Trading partners sometimes share databases in order to reduce time in communicating information between parties and to arrange cooperative activities.
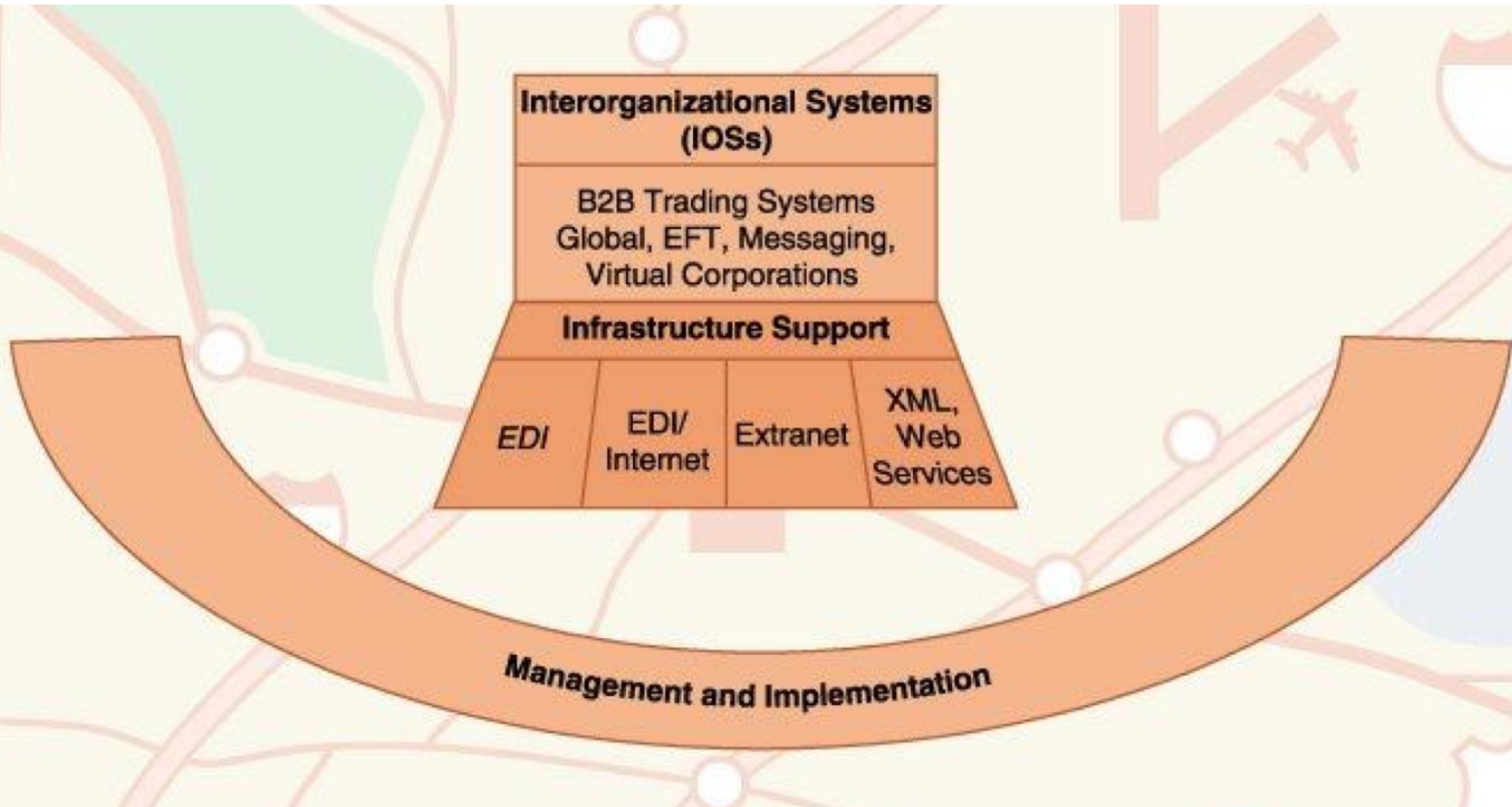
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Source: http://elearning.kocw.net/document/ch8_18.pdf

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http://www.pens.ps – Pathway in Enterprise Systems Engineering

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IOS technologies

Global Information Systems (benefits)

- Effective communication at a reasonable cost.

- Effective collaboration to overcome differences in distance, time, language, and culture.

- Access to databases of business partners and ability to work on the same projects while their members are in different locations.

Source: http://elearning.kocw.net/document/ch8_18.pdf

Global Information Systems (design issues)

- Cultural differences

- Localisation

- Economic / Political

- Legal

- PESTLE is essential

B2B exchanges, hubs and directories

- B2B exchanges are used mainly to facilitate trading among companies.

- Hubs are used to facilitate communication and coordination among business partners, frequently along the supply chain.

- Directories appear as B2B Information portals, which usually include catalogues of products offered by each seller, lists of buyers, and what they want, and other industry or general information.
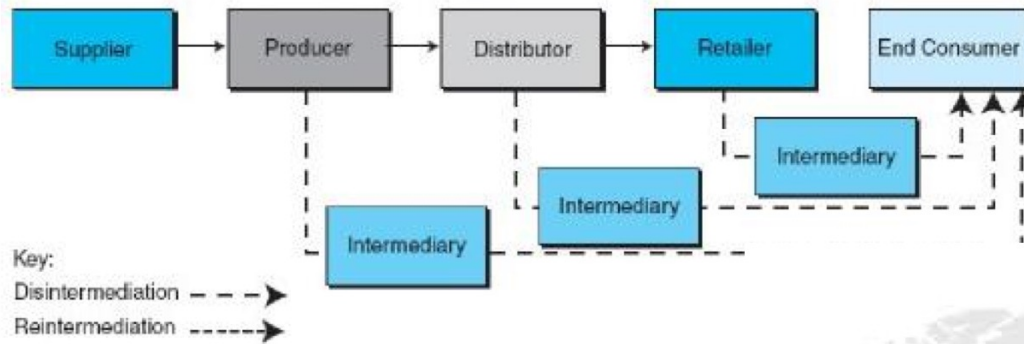
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B2B – computerised supply chains
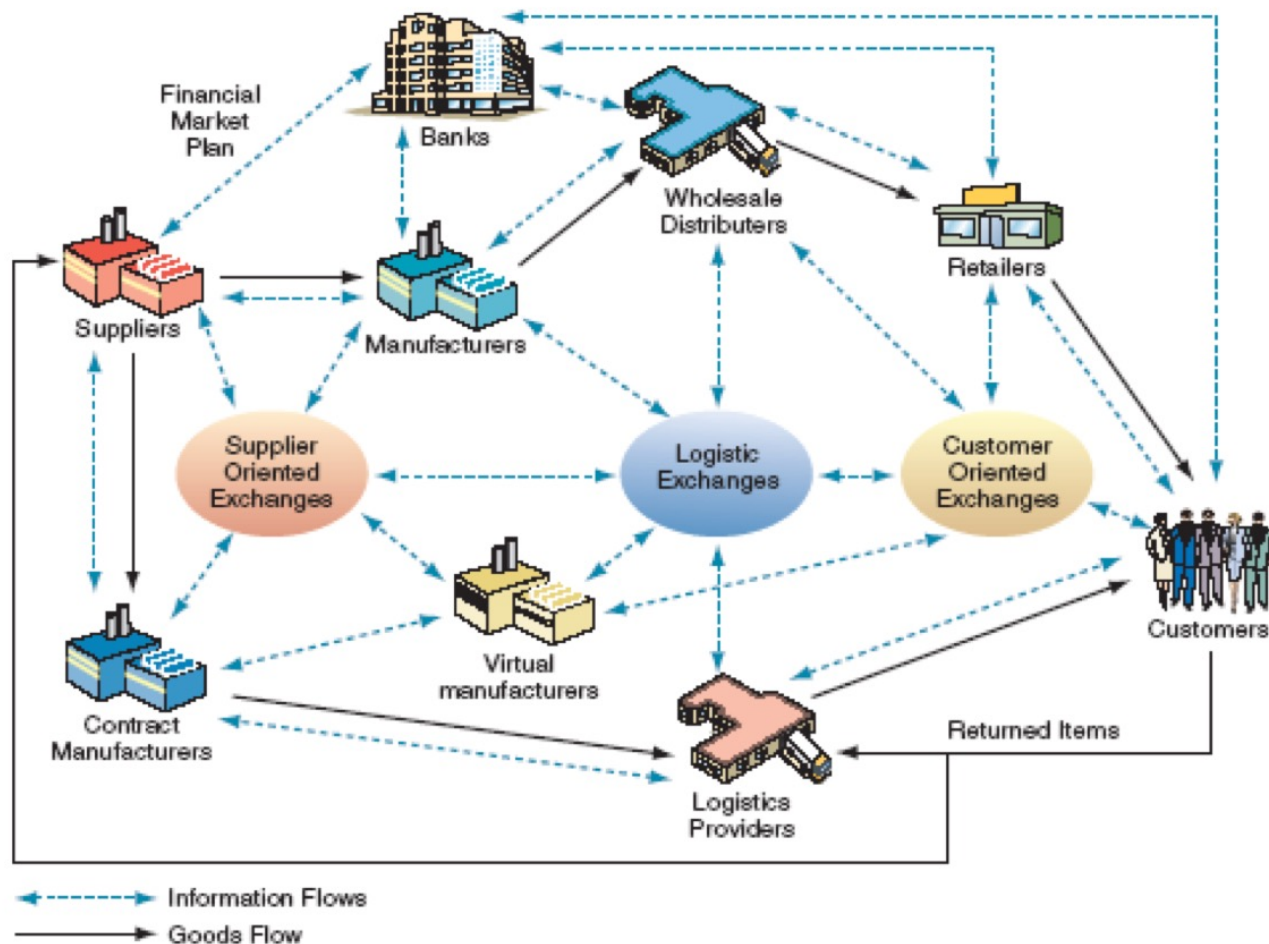
Source: http://elearning.kocw.net/document/ch8_18.pdf

B2B – computerised supply chains

Information Technology for Management, Ed. 5, Efraim Turban et al., Wiley

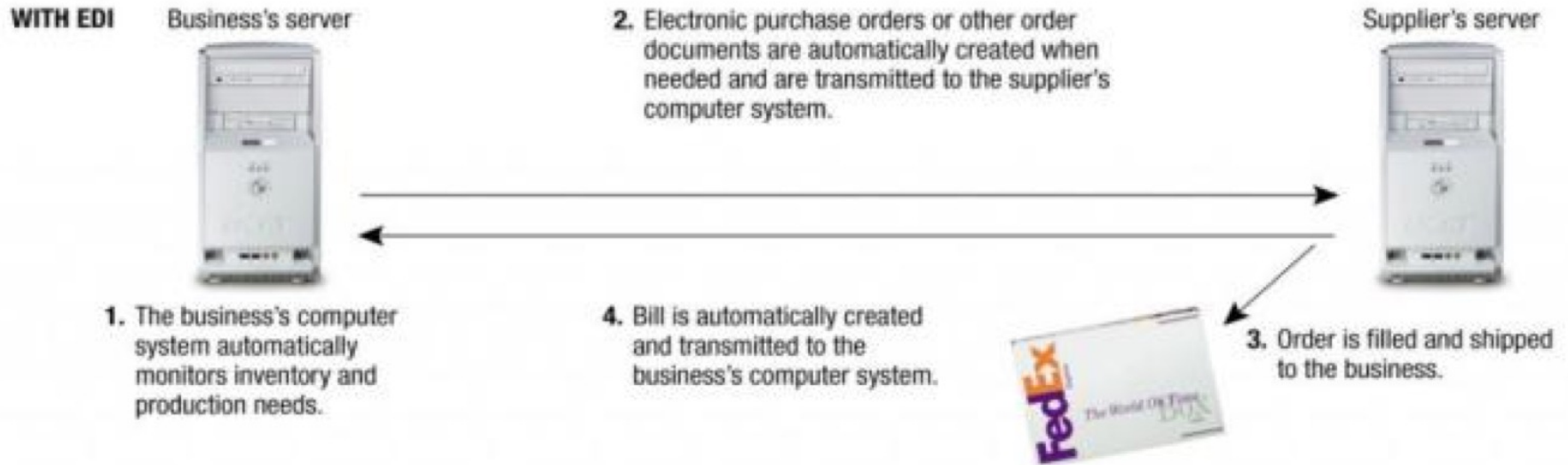http://b2b-bpo.blogspot.com

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Electronic Data Interchange (EDI) a concept developed in the 90s

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Electronic Data Interchange (EDI) a concept developed in the 90s

WITH EDI

Business's server
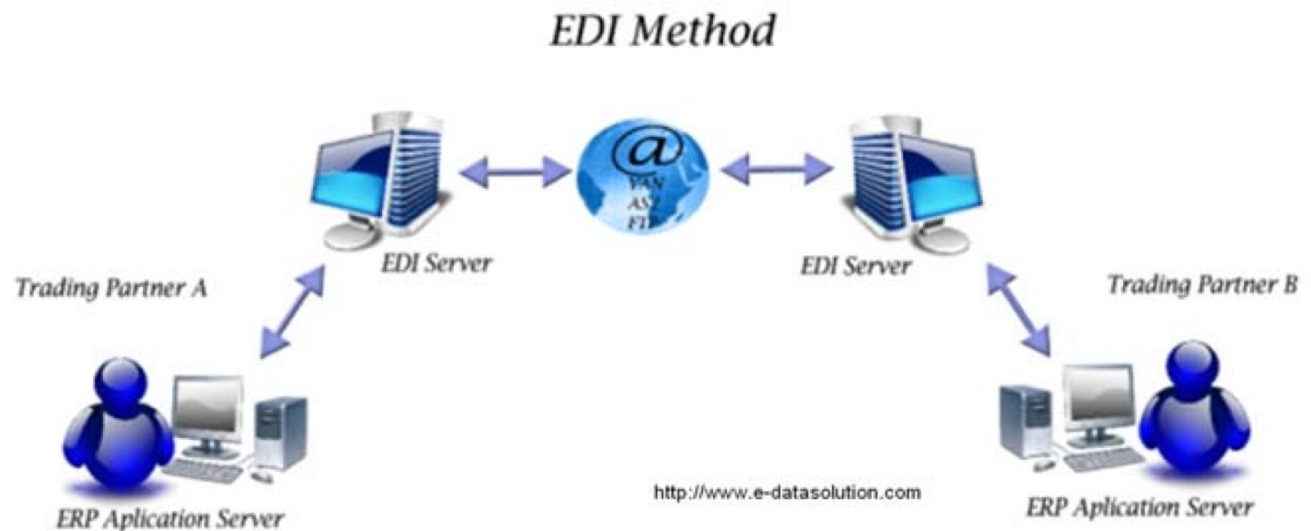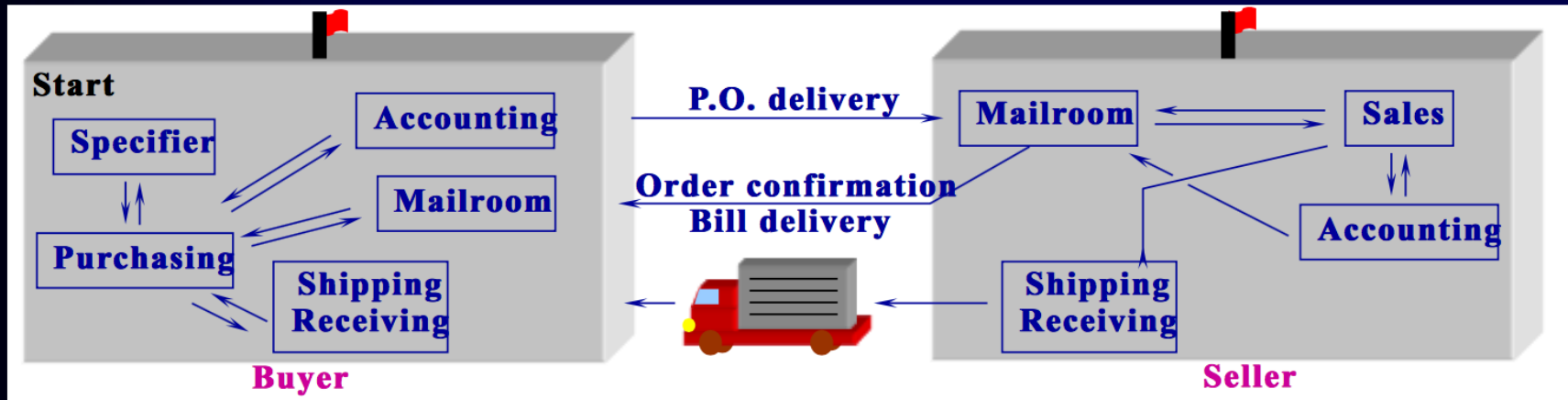
Supplier's server

2. Electronic purchase orders or other order documents are automatically created when needed and are transmitted to the supplier's computer system.

1. The business's computer system automatically monitors inventory and production needs.

4. Bill is automatically created and transmitted to the business's computer system.

3. Order is filled and shipped to the business.

FedEx

The World On Time

Electronic Data Interchange (EDI) a concept developed in the 90s

Manual Method

Trading Partner A

Data Entry → Fax → Sort Faxes → Data Entry

Trading Partner B

EDI Method

Trading Partner A — EDI Server

EDI Server — Trading Partner B

ERP Aplication Server

ERP Aplication Server

http://www.e-datasolution.com
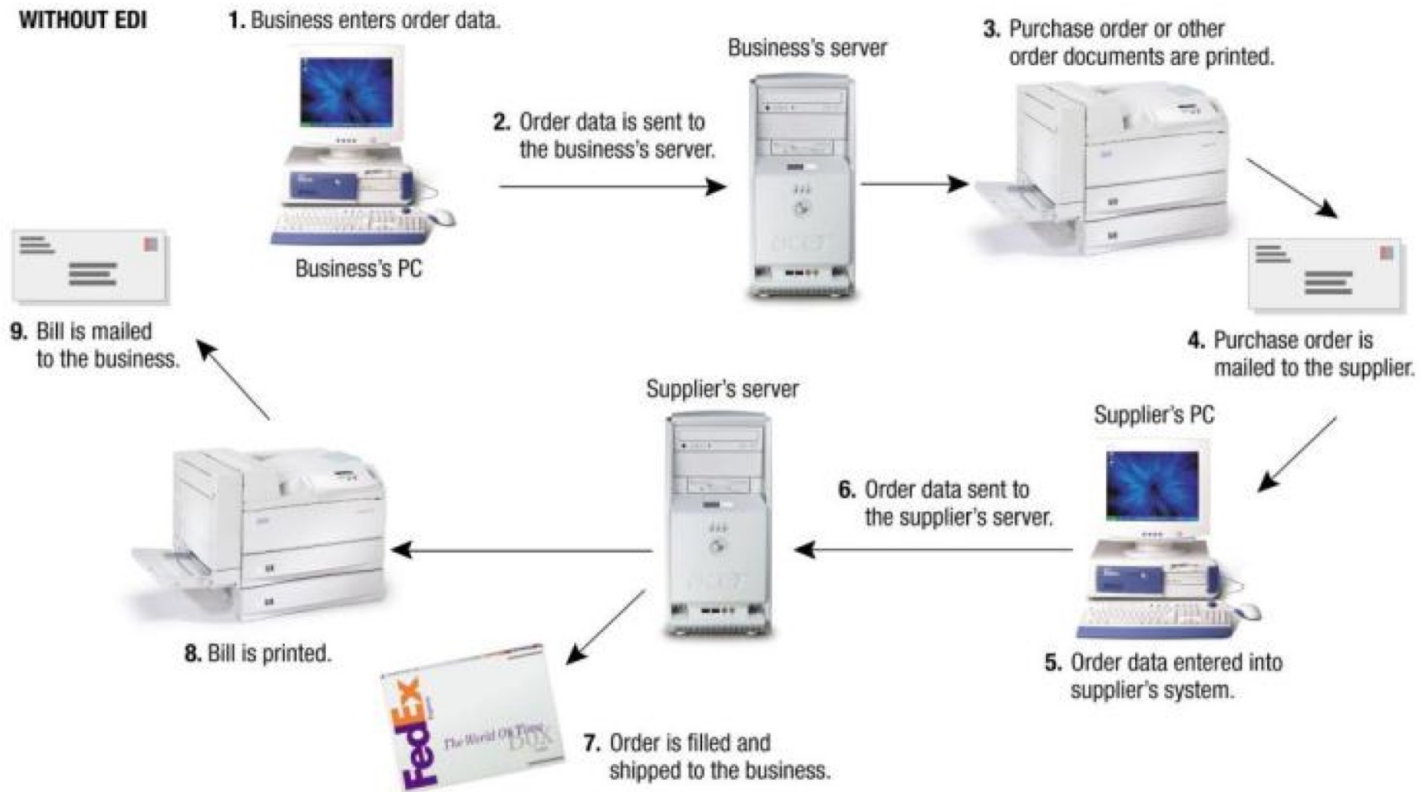
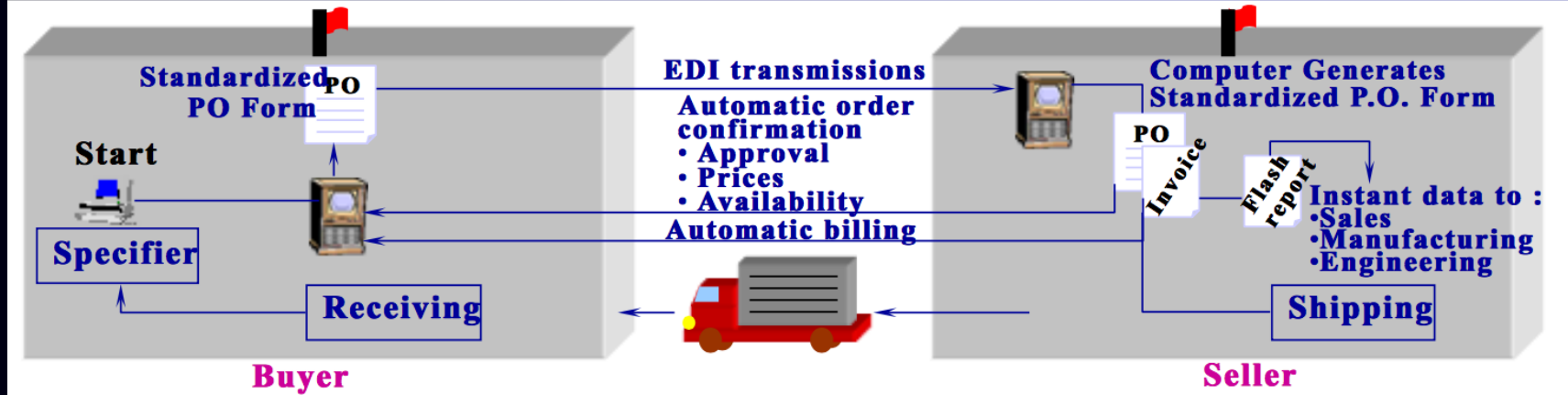# Electronic Data Interchange (EDI) a concept developed in the 90s

Development options

- XML (eXtensible Markup Language)
  - describes data and information.
  - does not say how the data will be displayed.
  - can be used to send complex messages that include different files.

- WEB Services
  - Universal, prefabricated business process software modules, delivered over the Internet, that users can select and combine through almost any device, enabling disparate systems to share data and services.
  - They can support IOSs by providing easy integration for different internal and external s

- AJAX (Asynchronous Javascript And XML) (a developer's dream)
  - Read data from a web server - after the page has loaded
  - Update a web page without reloading the page
  - Send data to a web server - in the background

- JSON JavaScript Object Notation)
  - Lightweight data-interchange format
  - "Self-describing" and easy to understand
- Language independent (uses JavaScript syntax, but the JSON format is text only which means text can be read and used as a data format by any programming language)

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

http://java.sun.com
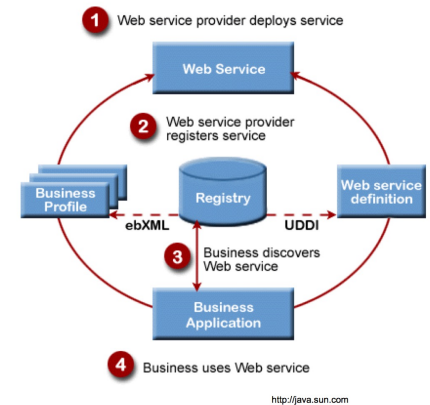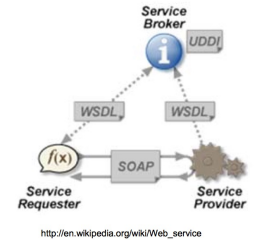
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JSON vs. XML

JSON is Like XML Because

- Both JSON and XML are "self describing" (human readable)
- Both JSON and XML are hierarchical (values within values)
- Both JSON and XML can be parsed and used by lots of programming languages
- Both JSON and XML can be fetched with an XMLHttpRequest

JSON is Unlike XML Because

- JSON doesn't use end tag
- JSON is shorter
- JSON is quicker to read and write
- JSON can use arrays

The biggest difference is:

XML has to be parsed with an XML parser. JSON can be parsed by a standard JavaScript function.

Source: https://www.w3schools.com/js/js_json_xml.asp

JSON vs. XML

Why JSON is Better Than XML

XML is much more difficult to parse than JSON.
JSON is parsed into a ready-to-use JavaScript object.

For AJAX applications, JSON is faster and easier than XML:

Using XML

- Fetch an XML document
- Use the XML DOM to loop through the document
- Extract values and store in variables

Using JSON

- Fetch a JSON string
- JSON.Parse the JSON string

Source: https://www.w3schools.com/js/js_json_xml.asp

Partner Relationship Management (PRM)

- Every company that has business partners has to manage the relationships with them.
- Information needs to flow between the firms and constantly updated and shared.
- PRM functions
  - Partner profiles
  - Partner communications
  - Lead management (of clients)
  - Targeted information distribution
  - Connecting the extended enterprise
  - Partner planning
  - Centralized forecasting
  - Group planning
  - E-mail
  - Price lists

Source: http://elearning.kocw.net/document/ch8_18.pdf

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# Partner Relationship Management (PRM)

Supplier Relationship Management

- One of the major categories of PRM is SRM, where the partners are the suppliers (e.g. PeopleSoft's SRM model.

- A model for managing relationships with suppliers in real time.

- Includes 12 steps using the core idea that an e-supply chain is based on integration and collaboration.

Source: http://elearning.kocw.net/document/ch8_18.pdf

Supplier Relationship Management
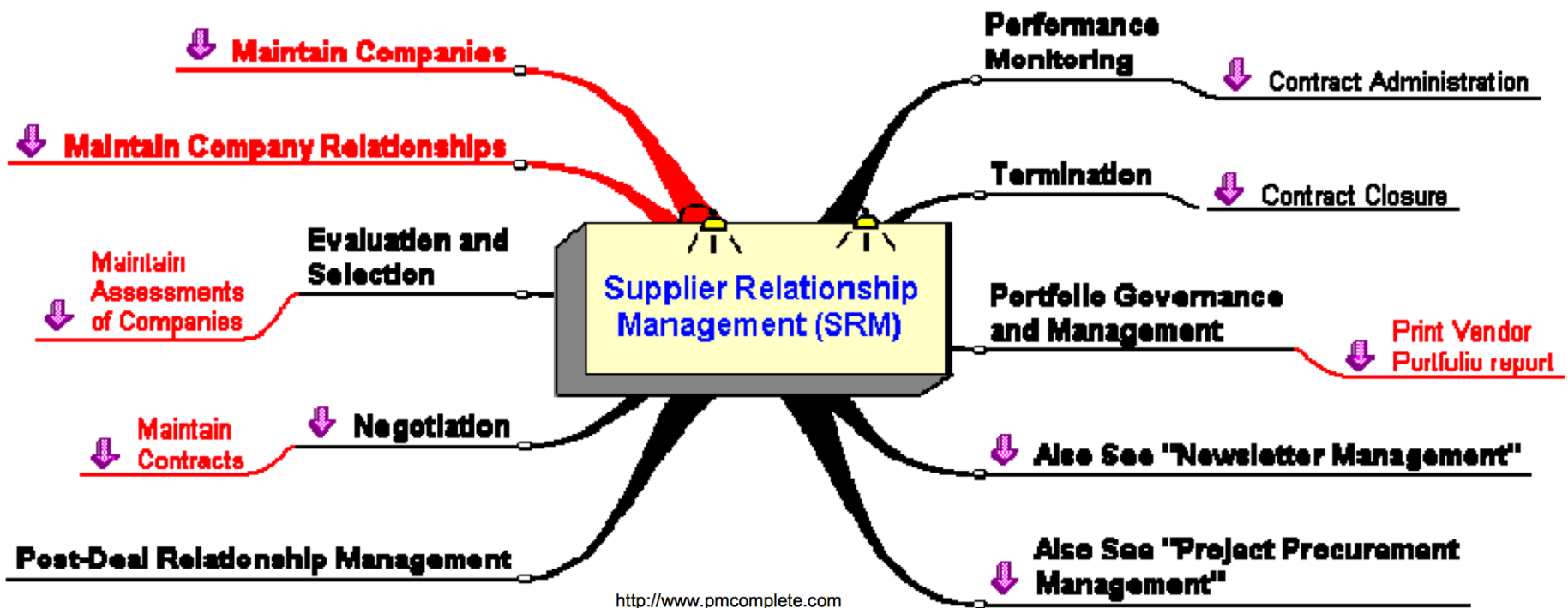
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Thank you for your attention!