

# *E-Business B2B Infrastructure*

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## *Introduction*

- B2B business models begin with the assumption that the business and its accompanying information system are up to date and robust.
- Within that environment, the business can look to intranets and the internet using “web technology” to leverage the value of those systems

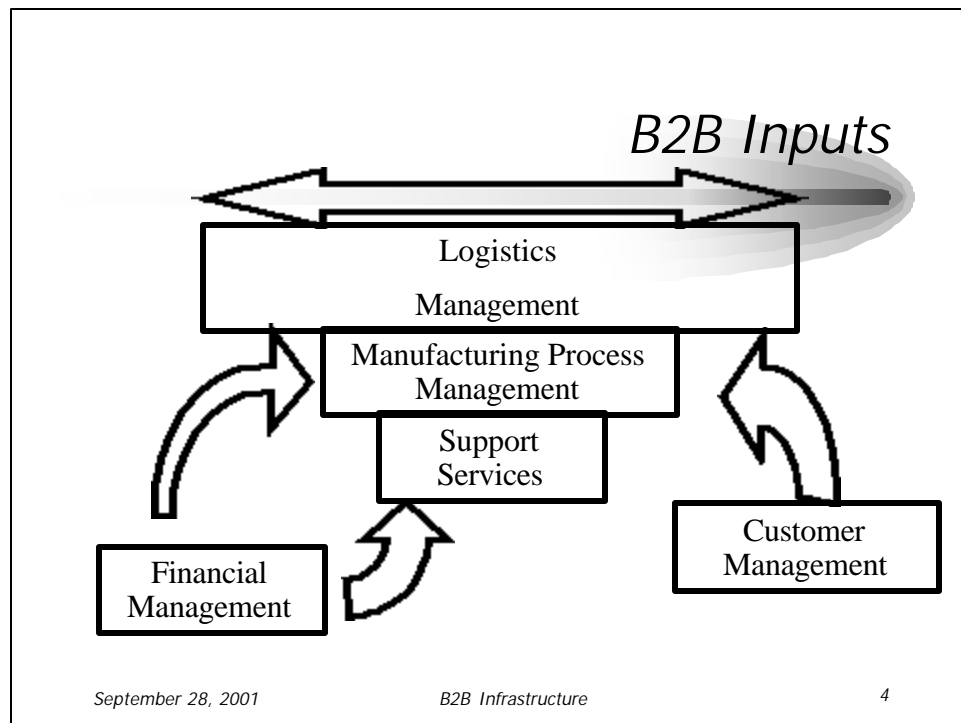
## Overview

- Global model for B2B systems
- Customer asset management
- Logistics management/supply chain
- Manufacturing and process management
- Financial management
- Human Resource and Other Support Services

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## *Customer Relations Management*

- “Pull” supply chains are based on linking customer information gathering to the upstream business processes
- CRM involves the integration of traditionally separate systems
  - Marketing management
  - Sales
  - Customer service

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## *The Rationale for CRM*

- Marketing and sales account for 15-35% of costs
- Customer input can lead to better products
- Current customers are a predictable source of future sales
- Customer assets can be valued as a part of acquisitions and mergers
- Customers increasingly expect high quality personalized service

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## *CRM Marketing management*

- Marketing has been based on product, price, and promotion
- Marketing in a global economy across multiple product categories using different channels requires better tools
- Ultimately, customer driven marketing makes it essential to gather their input

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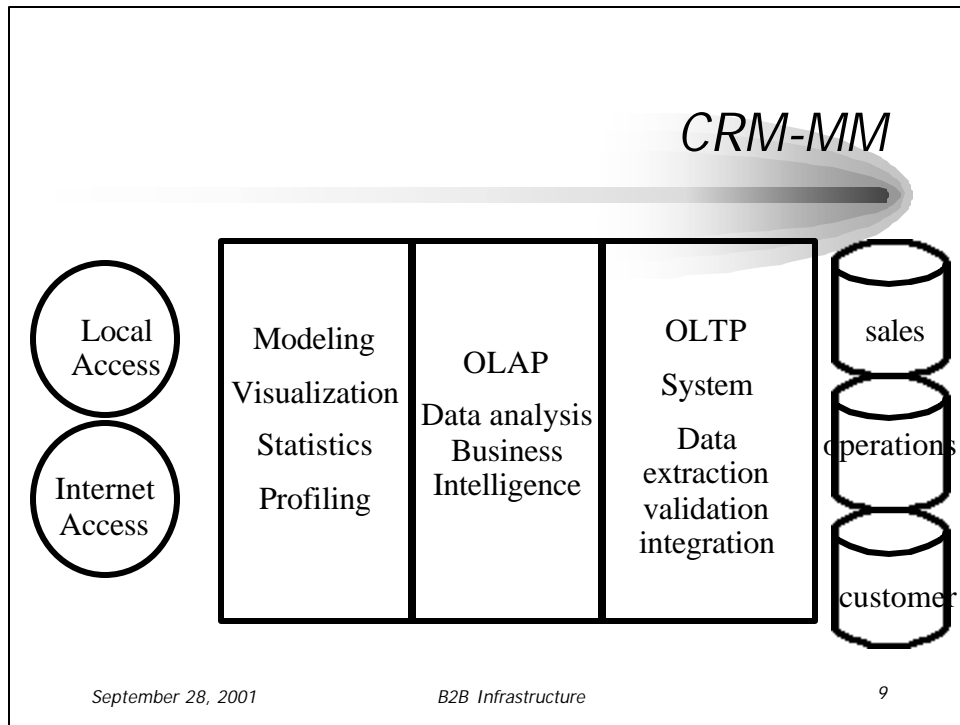
## *CRM-MM Goals*

- Provide data for data mining and OnLine Analytic Processing(OLAP)
- Provide real time accurate data
- Allow for better inventory management and input into promotions and sales
- Provide trend analysis data across channels to drive operation

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- ## CRM Sales Force Automation
- Two goals in sales force automation
    - Support the sales person in the field
    - Economically integrate sales information increasing corporate wide coordination
  - A good system will:
    - Support salesperson and telemarketing productivity
    - Automate selected sales processes
    - Maintain direct mail and email systems
    - Support sales and marketing management including compensation management
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## CRM-SFA *Support of Sales Representatives*

- Provision of marketing materials, price lists, business intelligence online
- Provision of customer leads and information captured from all sources
- Triage/prequalification of sales prospects and classification of customers
- Provision of real time product availability and order entry information

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## CRM-SFA *Some basic examples*

- Web information requests are processed
  - Through a standard set of follow-ups
  - To the appropriate sales person
  - Automated tickler systems
- Tracking of contacts
  - Prospects stored for future use
  - Datamining of prospects
- Provide information
  - To sales people about current pricing inventory etc,
  - To other company support units to enhance sales

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## *CRM-SFA*

### *More sophisticated examples*

- Develop agents to acquire news items and competitor information for distribution to the sales force and management
- Develop analysis tools to detect trends in customers and sales
- Develop network based push promotion and information dissemination
- Provide online customer controlled input and tracking information

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## *CRM*

### *Customer Service and Support*

- Customers are increasingly defined as an important company asset
- The Web makes new forms of customer support possible and cost-effective
- The Web can serve both as a way to reach out to customers and as a way for them to reach into the company

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## *CRM-CSS Goals*

- Lower support costs
- Provide global access
- Create proactive services
- Empower customers to solve issues independently
- Provide an opportunity for customers to input into the business process

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## *CRM-CSS Basic Processes*

- Provide the customer with product update information, fixes, new product information
- Provide a simple registration system that gathers:
  - User demographics
  - Product satisfaction
  - Agreement to receive targeting notifications

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## *CRM-CSS Advanced Processes*

- Link sales information and customer ID for telephone help desk support
- Use a workflow system to track resolution of customer issues through involved departments
- Feed problem reports into research and development operations for action
- Use problem tracking data to manage field service personnel

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## *Logistics Management Supply Chain Management*

- Supply Chain Management (SCM) is an outgrowth of “traditional” logistics management and Enterprise Resource Planning (ERP)
- It extends the management function outside the organization to both the supplier organizations and the distribution channels
- Good ERP/SCM can increase net revenues 4-6%
- SCM has become an expectation for industry

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## LM-SCM Approaches

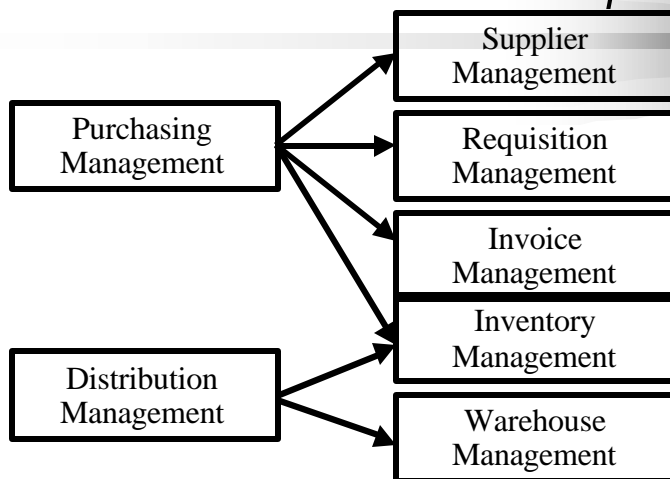
- The best-in-practice approaches have been incorporated in various systems
- Major vendors include
  - SAP
  - PeopleSoft
  - Baan
- Often, organizations find adoption of full blown ERP/SCM systems require significant organizational change

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## LM-SCM Components



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## *LM-SCM Purchasing/Supplier Management*

- The goal is to simplify routine transactions and reduce paperwork
- Trend is to reduce suppliers and partner with the selected suppliers so that both organizations win
- Purchase orders can be issued by DBMS triggers on inventory
- Suppliers can be allowed to replenish inventory based on agreed upon parameters

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## *LM-SCM Distribution Management*

- The distribution or demand chain is concerned with:
  - Speeding data acquisition
  - Controlling inventory, warehousing and shipping
  - Reducing paperwork
- It also includes invoice auditing and order tracking

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## LM-SCM Ultimate Goals

- When a sophisticated SCM system is coupled with agile manufacturing system, customer driven manufacturing is possible
- A first experiment in this direction is the Levi-Strauss custom jeans
- Most of the computer vendors offer similar capabilities

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## *Manufacturing/Process Management*

- Driven by the need for efficiency and flexibility in the manufacturing process
- Manufacturing information systems must be designed to control specific types of manufacturing processes:
  - Discrete (semiconductors, disk drives)
  - Batch (pharmaceutical, fast food, beverage)
  - Continuous (steel, oil)

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## *M/PM Discrete Manufacturing*

- Concern with part inventory, work in progress, and finished goods
- Agile manufacturing allows finished goods to be made to order assuming real-time sales and configuration information
- Production execution systems are used to control materials requirements planning, capacity planning, shop floor control, and quality management.

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## *M/PM* *Process Manufacturing*

- A continuous process plant has a large investment in the plant and focuses on capacity planning
- Frequently, regulations require full traceability to assess consistency of composition
- Process manufacturing often results in very varied packaging forms

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## *M/PM* *Components*

- The component parts of a manufacturing management system include:
  - A Manufacturing Resource Planning(MRP-2) System is focused on materials and scheduling
  - A Manufacturing Execution System is real time management with operation level scheduling, production monitoring, quality assessment, and distribution of work.
  - An Enterprise Resource Planning (ERP) system incorporates these systems and integrates multiple plants and financial systems

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## *M/PM Next Steps*

- Optimal evolution of ERP/MES systems moves to distributed control via information sharing
- With data collection and distribution enabled, organizations can explore:
  - Customer driven manufacturing
  - Real-time decision support
  - Automated administrative systems

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## *M/PM Key Technologies*

- Two key technologies support manufacturing and process management
- “Bar coding” or more generally automatic identification systems provide accurate and rapid input into internal systems
- EDI or XML enhanced EDI provide standardized mechanisms for the rapid exchange of information between organizations

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## EDI

- Generally speaking, large firms with extensive relations have already adopted EDI
- The cost, rigid requirements, and lack of common transport have caused EDI adoption to lag
- XML based EDI solutions allow Web browsers to be extended to SME

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The screenshot shows a Netsite browser window with the URL <http://www.xml-edi.com/>. The page content is as follows:

**XML** (eXtensible Markup Language) is a simplified subset of the Standard Generalized Markup Language (SGML, ISO 8879) which provides a file format for representing data, a schema for describing data structure, and a mechanism for extending and annotating HTML with semantic information.

**EDI** (Electronic Data Interchange) works by providing a collection of standard message formats and element dictionary in a simple way for businesses to exchange data via any electronic messaging service.

**XML/EDI** provides a standard framework to exchange different types of data -- for example, an invoice, healthcare claim, project status -- so that the information be it in a transaction, exchanged via an Application Program Interface (API), web automation, database portal, catalog, a workflow document or message can be searched, decoded, manipulated, and displayed consistently and correctly by first implementing EDI dictionaries and extending our vocabulary via on-line repositories to include our business language, rules and objects. Thus by combining XML and EDI we create a

**Tagging Standard** + **Business Language** =

- Script Attachment
- Transaction Validation
- Search Techniques
- Linking & Reference
- Multimedia
- Wide World Web
- Authoring Tools

- Business Language
- Business Practices
- Trading Partner Profile
- Logging and Archiving
- Acknowledgements
- Application APIs
- Transaction Expertise
- Message Standards

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## Automatic Identification

- The automatic identification and data capture community is supported by AIMUSA.
  - The technologies have expanded beyond the original bar codes – of which there are more than 250.
  - Radio Frequency Identification systems are being used increasingly – as a part of real time locator systems
  - Smart card variants are being used to store routing information
  - Electronic article surveillance is used to track items in controlled environments

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## *The Impact of Identification*

- The Universal Product Code (UPC) allows the identification of grocery products by scanning
- For supermarkets, this allows faster checkout, but more importantly, better inventory control
- Once the instore inventory can be known in real time, SCM is possible
- RFID offers the opportunity for less labor intensive inventory control
  - Control of mobile products
  - Control of on-shelf inventory

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## *Digital Object Identifiers*

- The Corporation for National Research Initiatives has developed the DOI system
  - It consists of a two part identifier – and authority and an object id
  - This allows different authorities to use different formats for objects
- Once widely implemented, it solves two problems:
  - Objects have a persistent locally controlled id.
  - Actions on an object can be reported and managed consistently across an enterprise.

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## *Financial management*

- Involves the integration of various finance systems along with business intelligence
- Agents are used to gather corporate intelligence on competitors and the environment
- OLAP systems are used to do what-if planning
- The Web is used to make data available

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## *FM Accounting Systems*

- Accounting systems capture, records, tracks, and aggregates financial information
- Financial accounting systems are used for reporting information to shareholder, regulatory bodies, etc.
- Management accounting systems are used to link financial outcomes to management decisions

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*FM*  
*Corporate Performance*

- Corporate performance measurements must include additional measures:
  - Customer satisfaction
  - Quality
  - Innovation
- The financial component needs to be processed in such a way that it yields simple and understandable measures

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*FM*  
*Components*

- The basic components of the accounting system include
  - General Ledger
  - Accounts Payable
  - Accounts Receivable
  - Asset Management
  - Costing (project cost)
  - Billing and Invoicing

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## *FM Goals*

- Track market conditions and competition performance
- Provide financial reports that link the various ledgers to the production process and the various business units/functions
- Support “discovery mode” exploration of financial information

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## *FM Web Enabling*

- Web transaction entry allows distributed but controlled transactions and tracking and auditing
- Backend processing can do inventory knitting to allow “kits” to be ordered
- Payment management can be enhanced by the use of EDI
  - Current uses of EDI through Value Added Networks (VANS) will be expanded via XML based EDI

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## *Human Resource and Other Support Services*

- Any other support service in the organization can also be enhanced by distributed electronic processing
- Human resources management is frequently addressed as a part of the effort because of the complexity of modern benefits packages

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## *HRM Functions*

- Recruiting, training, salary administration
- Payroll functions including time reporting, payroll calculation and tax computation
- Benefits administration including flexible spending accounts, pension programs and defined benefits
- Health care benefits management

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## *HRM Information Dissemination*

- A big part of the human resources function involves making information available to employees
- Policies, procedures, options can be maintained and updated efficiently using intranet technology
- Employee queries related to options and enrollments can be distributed by intranet

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## *HRM Workflow*

- Benefits claims and queries can be submitted electronically and processed using workflow systems
- Standard queries can be processed and returned securely by email to the appropriate person
- Relationships with external agencies can be facilitated by email and EDI processing

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