



Business Objects & Electronic Commerce

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Open Engineering Incorporated



About This Session



- Produced & Delivered by...

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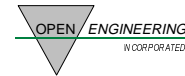
- Presented to...

Object World West 1997, San Francisco, CA, USA

Road Map



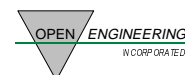
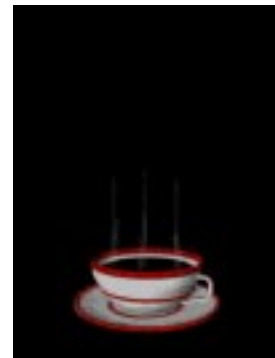
- Electronic commerce
- Objects -- *How my usage differs...*
- Business objects -- *Business components*
- Delivery architecture -- *Technology Ready*
- Business engineering -- *Business Ready*
- Management issues -- *Organization Ready*



This Presentation is NOT...



- About programming, languages, browsers, servers, Java, Beans, X components, HTML, etc.
- ***We WILL cover critical issues you must address to use such technology tools effectively in electronic commerce***





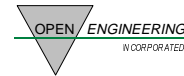
ELECTRONIC COMMERCE

Electrifying Business



OW-West 97:5

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What is Electronic Commerce?

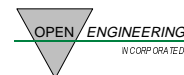


- Electronic commerce is...
 - Transacting business between people and companies in a wide-area distributed computing environment



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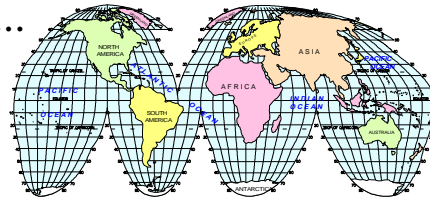
Flavors of Electronic Commerce

- Many approaches to Electronic Commerce
 - Touch-tone telephone inquiry, ordering
 - Ordering products on corporate web sites or b-boards
 - Internet "shopping malls" and on-line catalogue shopping
 - Electronic distribution of software, magazines, news
 - PC banking, payments, funds transfer
 - Electronic Data Interchange (EDI) connecting applications
 - Internet *value chain integration between companies*
- The first 6 are variations on ordering, distribution
 - Only the 7th is full-blown virtual business



Why Electronic Commerce?

- Business is being done somewhere in the world every minute of the day...
 - Wider reach
 - 24-hour, 7-day selling
 - Shorter transaction time
 - Not location-specific or dependent
 - Lower cost than face-to-face, call-center or media
 - Greater selection of suppliers than "local selling area"
- Electronic commerce focuses on *filling the need* rather than playing out a selling process



Implications of E-Commerce

- ***Public visibility*** required to reach customers
- ***Privacy*** of transactions and information
- ***Security*** threats from hacking and viruses
- ***Anonymity*** of buyers, sellers and brokers
- ***Instability*** of multi-owner network
- ***Financial instruments*** must become net-ready
- ***Virtual corporation*** is within reach

Why Value Chain Integration?

- ***Time to market*** is the focus in global business
 - Just-in-time manufacturing
 - Continuous replenishment retail resupply
 - Coordinated global logistics management
 - Total Quality Management supplier-consumer partnerships
 - Mass-customization and product localization
- ***Integration of business processes across supplier-consumer boundaries is a prerequisite*** for substantial time-to-market gains

Implications of Integration

- ***Businesses connect at the component-level***
 - Shared business processes, entities and events
- Business model exposed to the public network
- Business rules delivered to browser-equipped users
- Suppliers & customers ***participate*** in business
 - Assume business model roles in business process
 - Cause and respond to business events
- ***Supplier-consumer relationships can be program coordinated*** over the public net

What it Takes...

- If your objectives are to:
 - sell products and services over the public internet
 - integrate electronic business with suppliers, customers
- Your company must be:
 - "***net ready***" with technology
 - "***business ready***" with a well-defined business model
 - "***organization ready***" to deliver and maintain the model
- ***Only 1/3 of readiness is about technology!***



A Word of Caution...



- Electronic commerce is *NOT*...
 - a technology problem
 - about browsers, web sites and Java
 - about taking orders over the internet using forms
- Hard-core electronic commerce is *business!*
 - *Your technology must be ready to deliver your business*
 - *Your business must be ready to be delivered by technology*
 - *Your organization must be ready for both!*



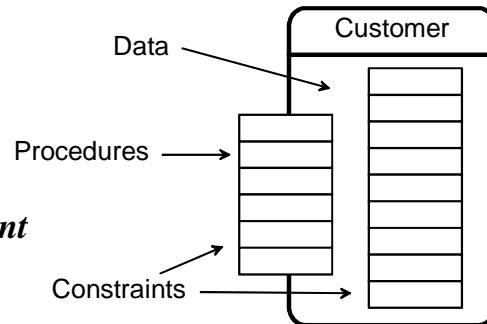
BUSINESS OBJECTS

Componentization of Business



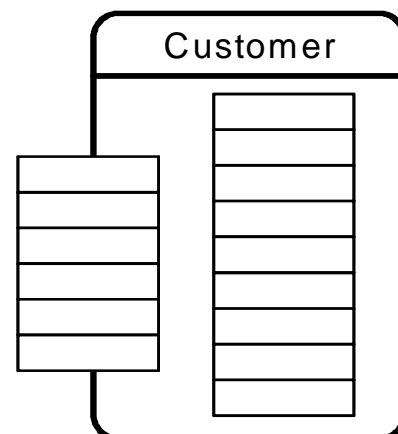
What is an Object?

- **Package** of data, procedures and constraints about one concept in
 - business world
 - computer environment
- A **module defined around a domain concept** instead of coding structures
 - We use objects in modeling, analysis, design and software
- An object is a **well-defined component**



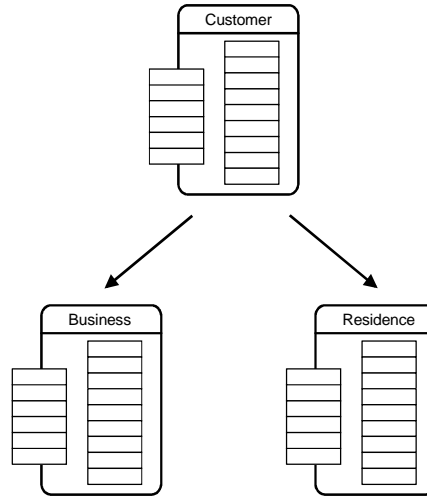
What is a Business Object

- A business modeling or software **component of business procedure, policy & rules wrapped around data**
 - Each business object represents a single narrowly-defined business concept -- customer, order
- A way to organize the **right data and right procedure in the right place**
- **Independent of applications**
- **Sharable** (i.e. business-reusable)



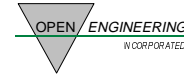
Why Business Objects?

- **Systems mirror the business**
 - Seamless integration of existing applications, wrapping
- **Internal & external sharing**
 - Business data & procedures
 - Business rules & integrity constraints
- **Managing differences and change in business rules**
 - Put divisional/local business rules in the specializations
 - Maintain corporate definitions, rules and data in the generalization



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Types of Business Objects

- There are **3 types** of business objects...

- **Entity Business Object**

- Person, place, thing or concept
- Business noun

- **Process Business Object**

- Business process, workflow, activities
- Business verb that require multiple nouns
- Structured collection of entities, interactions, events

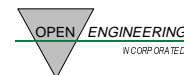
- **Event Business Object**

- An event that causes or results from processes or actions
- Occurrences, interruptions, passage of time



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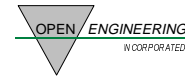
Common Entity Objects

- Customer
- Order
- Product
- Contract
- Equipment
- Capacity
- Address
- Vehicle
- Facility
- Resource



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Common Process Objects

Major Processes

- Order Fulfillment
- Procurement
- Production
- Billing

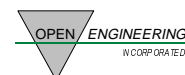


Common Sub-Processes

- Quotation, Contracting, Ordering, Delivery
- Vendor Certification, Ordering, Receiving
- Invoicing, Collections

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Common Event Objects

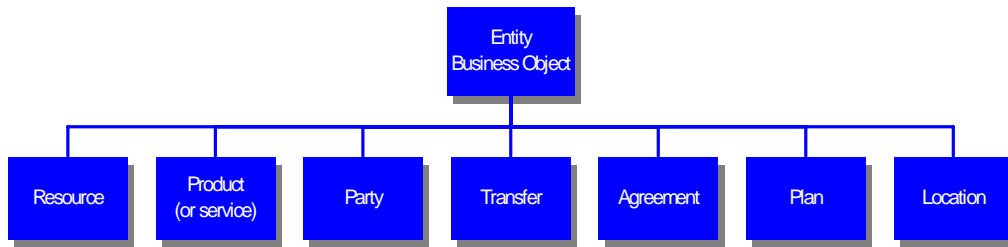
- Inventory Low
- Tank Overpressure
- Employee Absent
- Approval Granted
- Interest Rate Change
- Payment Cleared
- Fiscal-year End
- Loan Due
- Bill Payable
- Gate Closed
- Order Placed



Business Patterns

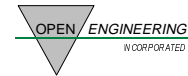
- ***Collections of business objects and associations***
 - ***Prefabricated business sub-assembly***
 - Captures a common/generic business construct
- Different types of business patterns capture...
 - Enumerations
 - Interaction (workflow) or business processes
 - Type, role and composition structures
 - Binary relationship structures
- ***Patterns are the basis for value chain integration***

7 Foundation Entity Objects

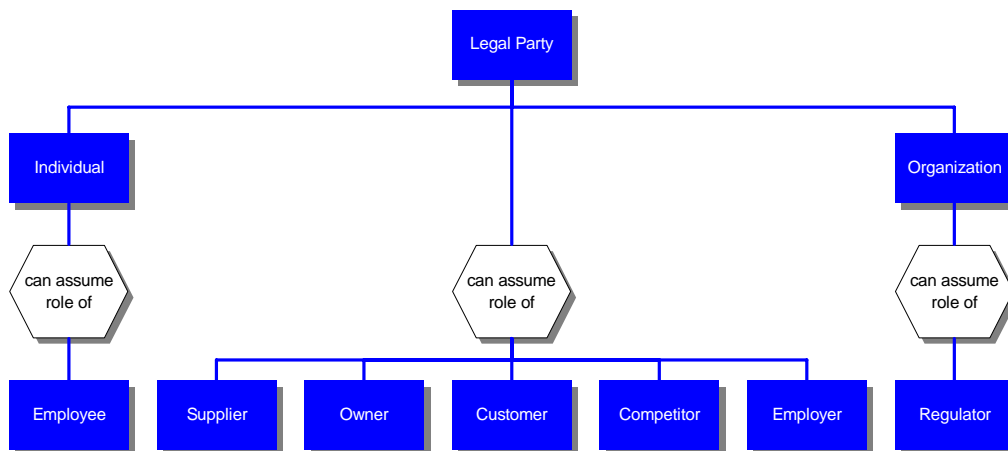


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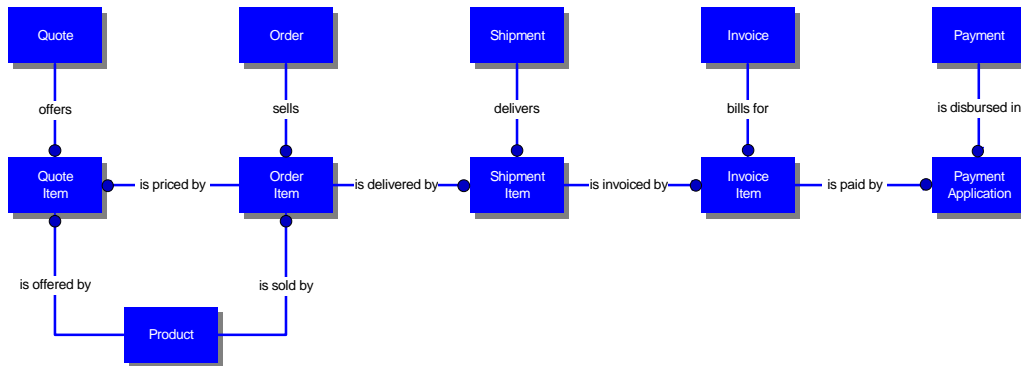


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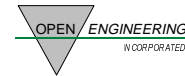


Double-W (Quote-to-Collect)



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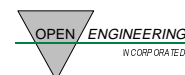


Why in Electronic Commerce?

- ***Business objects enable electronic commerce...***
 - Deliver ***workflow*** (process objects) and resources (entity objects) to the browser-equipped desktop
 - ***Bring customers & suppliers right into your business*** processes as first-class participants
 - ***Integrate*** your business with customers & suppliers businesses by sharing business objects
- ***Business patterns make E-commerce efficient...***
 - Scalable plug-ins that integrate business processes in collaborating enterprises around shared semantics/interface
 - Snap-together business components

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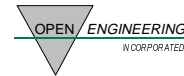
ARCHITECTURE

Being Technology-Ready



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Business Objects on the Internet



- Business objects are deployed as servers
 - Services are exposed to public or secure use
 - Data is available only through services
 - Business rules are enforced by services
- Browser and appletlets enable customer to
 - Use services of business objects
 - Participate in the business process as allowed by provider
- User can be
 - Browser-enabled person
 - Another business object
 - Any computer program

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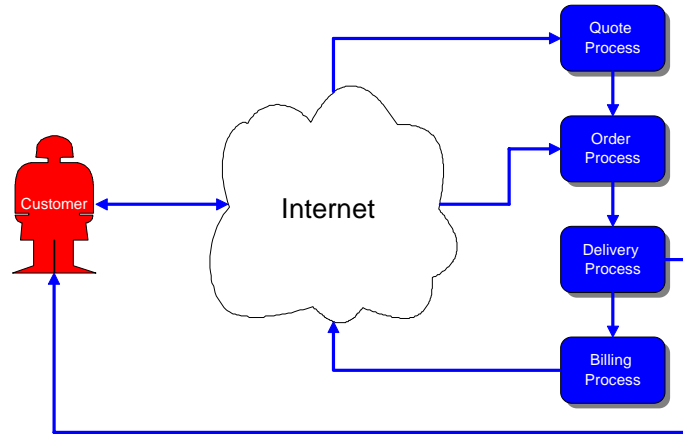
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Selling on the Internet

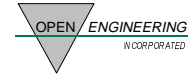
Your Customer

Your Company's
Sales Process



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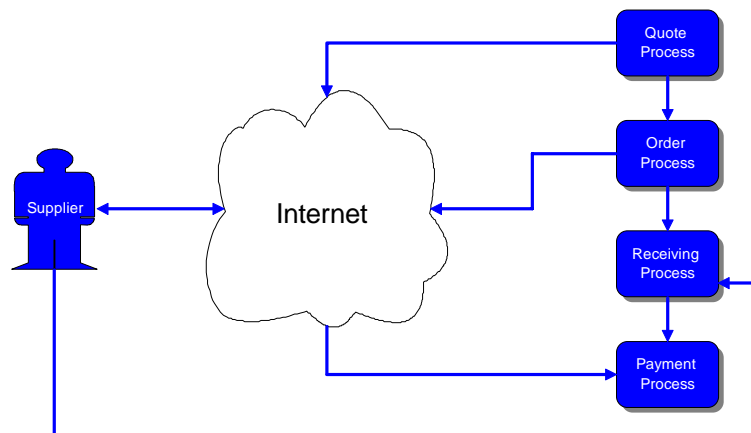
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Buying on the Internet

Your Supplier

Your Company's
Procurement Process

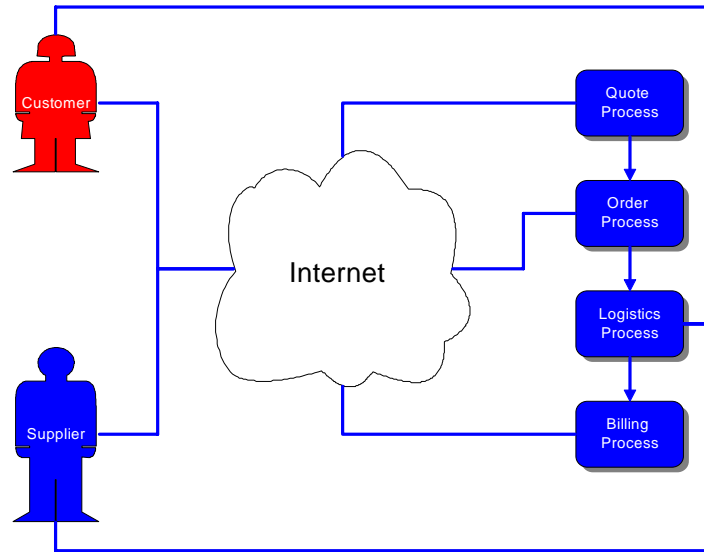


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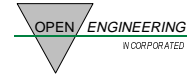


Shared Processes on the Internet

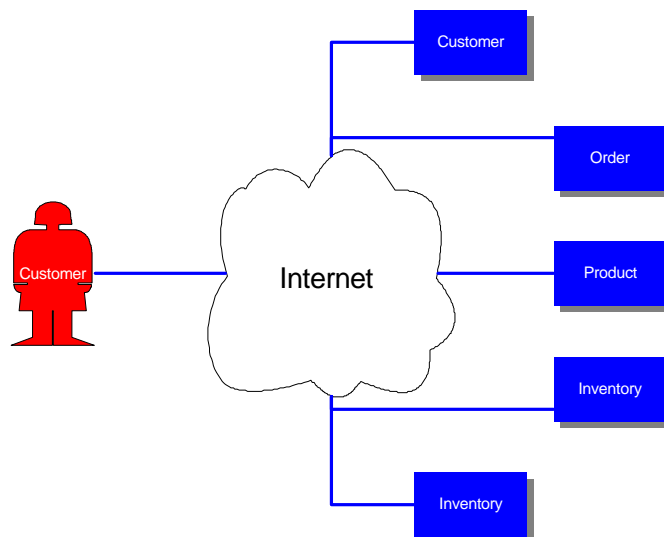


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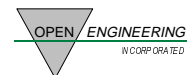


Resources on Internet



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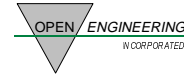
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Technology-Ready Issues

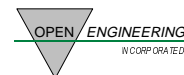


- Transaction control
- Database access, integrity
- Legacy integration
- Security
- Authentication
- Change management
- Distributed computing infrastructure
- Enterprise namespace
- Server reliability
- Internet reliability
- Payment mechanisms
- Encrypted transactions
- Firewalls
- Internal/external visibility
- Multiple browsers
- Fluid Java/HTML specs
- New products, companies



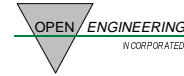
BUSINESS ENGINEERING

Being Business Ready



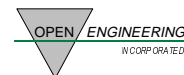
What is Business Engineering?

- Business engineering combines:
 - *Business Process Re-engineering* (BPR)
 - *Continuous Improvement* (TQM)
 - *Business objects*
- Business engineering integrates:
 - Business definition and change management
 - Information systems delivery
- Business engineering is about *synchronizing information systems with the business*
 - And maintaining synchronization when both business and technology change constantly

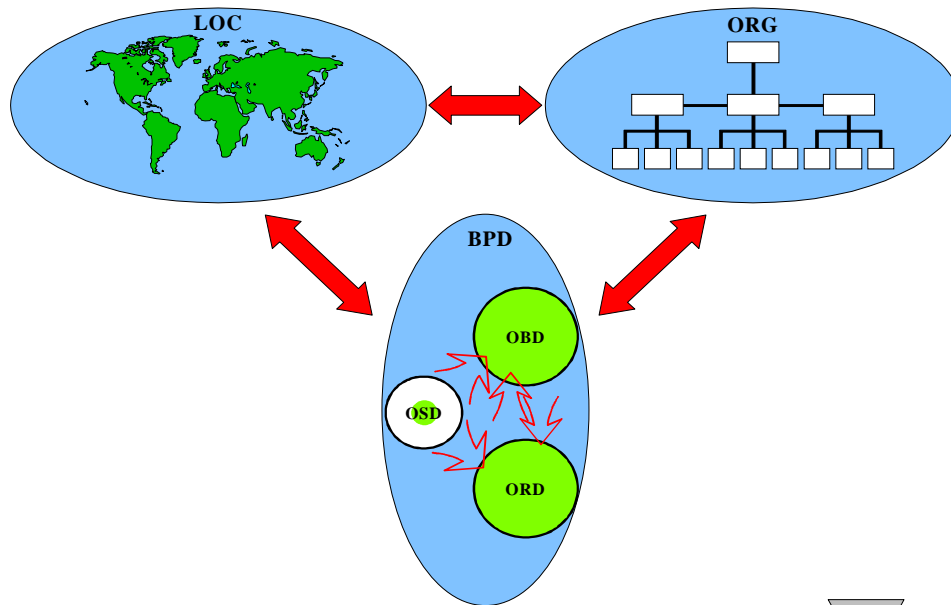


What is OOBE?

- OOBE is a reference model and discipline for...
 - Business engineering -- component definition
 - Flexible software manufacturing -- component delivery
- OOBE is unique because it...
 - Focuses on business first
 - Synchronizes business and information systems change
 - Bases business engineering on business patterns
 - Causes business object re-use by focusing on commonality
 - Aligns IS processes with business processes
 - Is based on business objects

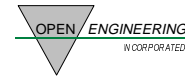


Understanding the Big Picture



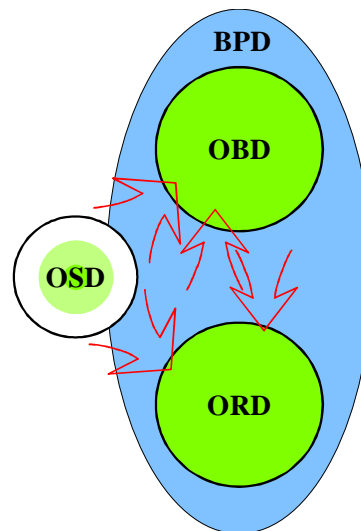
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Capturing Business Process

- **Business Process Diagram (BPD)**
 - High-level processes, sub-processes
- **Object Behavior Diagram (OBD)**
 - Process & Interaction
 - Business Events
- **Object Relationship Diagram (ORD)**
 - Structure
 - Types and Roles
 - Binary Relationships
- **Object State Diagram (OSD)**
 - Lifecycle



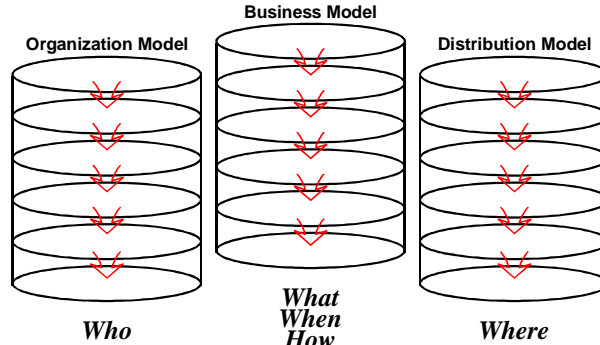
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Delivering Process as Workflow

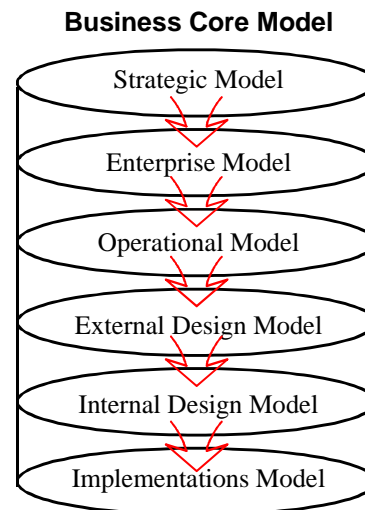
- Distribution Core Model
 - Where - locations, routes
- Business Core Model
 - What - central concepts, relationships, types
 - When - events, timing
 - How - processes, interactions
- Organization Core Model
 - Who - people, roles, organization structure



Transform BPR into Objects

Business Logical/Analysis Models

- Strategic Model
 - Vision, goals, objectives
- Enterprise Model
 - Industry generic
 - Best-of-Class
 - Non-unique business processes
- Operational Model
 - Company specific
 - Competitive advantage

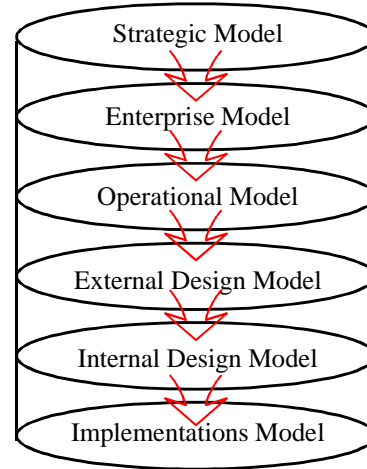


Transform Business into Software

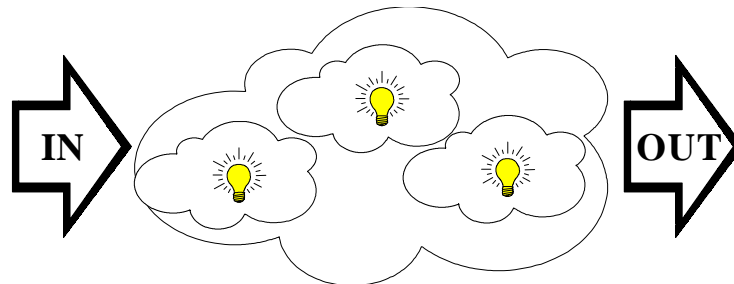
Business Physical/Design Models

- External Model
 - External interface (API)
 - Environment specific
- Internal Model
 - Insides of object classes
 - Legacy integration, mapping
 - Methods, data structures
- Implementation
 - Server program code

Business Core Model



OOBE: From Business to Internet



- Capture the business using "business object models"
- Re-design the business for optimal business performance
- Translate business objects into software implementations
- Deliver software business objects as internet servers

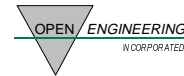


ORGANIZING *for* *Component Delivery*

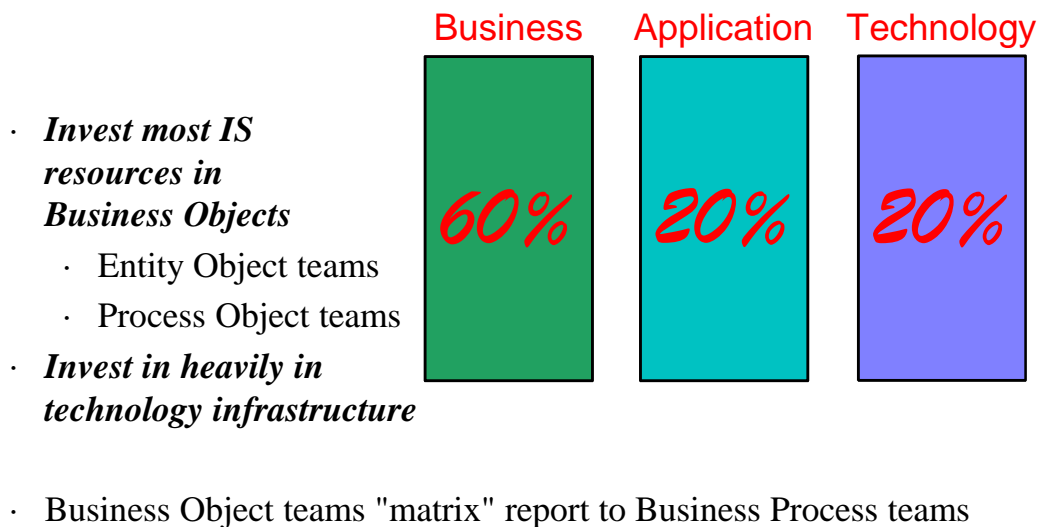


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Process-Tuned I.S. Organization



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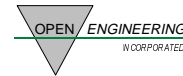


Scope of the Change



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Parting Thought...

- Today's manufacturing giants profit from ideas once considered impossible...
 - Interchangeable parts
 - Standard interfaces
 - Flexible manufacturing
 - Mass customization
 - Just-in-time delivery
- ***Electronic commerce implements these ideas in software on the public internet***



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