



Building the Next Generation Enterprises

PISA

(Planning, Integration, Security and Administration)

**An Intelligent Decision Support Environment for
IT Managers and Planners**

Application Requirements Document Generated

Note

This is a sample report that has been generated by the PISA environment for a small company. PISA generates many documents as a result of short (15 to 20 minutes) interviews. These documents are produced as html documents that can be easily modified by using MS Word (just open these documents in MS Word and edit them). For display only purposes, this document has been converted to PDF Format.

NGE Solutions, Inc. (www.ngesolutions.com)

Application Requirements Document Template

Order Processing

How This Report is Generated

Requirements development is a very time consuming and expensive undertaking. This requirements document is generated by IRG (Intelligent Requirements Generator) – a PISA Advisor that attempts to significantly reduce this time. IRG uses the following algorithm:

1. Fetch a template that includes standard requirements templates and consists of several sections which contain fixed content that is always in a requirements document (e.g., project information), application specific information, and scenario (enterprise model) specific information.
2. Application specific information is represented in application patterns (APs) that consist of “knowledge chunks” (e.g., overview paragraphs and UML diagrams with high level use cases, class diagrams and sequence diagrams) about an application (e.g., inventory management). The design approach used in PISA heavily relies on a pattern repository (PR) which houses these application patterns (APs) related to a business process.
3. Many sections of the requirement template are populated by different components of the pattern repository; others are populated by creating scenario specific models based on a user interview.

The objective of IRG is to generate a template that has 70% of the information already populated. IRG is in its early stages of development.

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Definitions and Terms

== Modify as needed

ACL Authorized Control List

ACM Association of Computing Machinery

AI Artificial Intelligence

AIA Application Integration Architecture

API Application Programming Interface

ASP Application Service Provider

ASP Active Server Pages A Microsoft technology for
building server side code

ATM Asynchronous Transfer Mode a packet switching
Technology used typically in high data rate networks

ATM Automatic Teller Machine used in banking

B2B Business to Business

B2C Business to Consumer

B2E Business to Employee

B2G Business to Government

BREW Binary Runtime Environment for Wireless

BSP Business System Planning

CAD Computer Aided Design

CAM Computer Aided Manufacture

CBX Computerized Branch Exchange

CCITT Comit Consultatif Internationale de Tlgraphique et
Tlphonique (The International Telegraph and Telephone
Consultative Committee)

CDMA Code Division Multiple Access

CDPD Cellular Digital Packet Data

CGI Common Gateway Interface - A Web gateway technology

CIO Chief Information Officer

CORBA Common Object Request Broker Architecture

COTS Commercial Off-The-Shelf

CPU Central Processing Unit

CRM Customer Relationship Management

CSF Critical Success Factors

CSMA/CD Carrier Sense Multiple Access/Collision Detect

DBMS Database Management System
DCOM Distributed Component Object Model
DDBMS Distributed Database Management System
DDL Data Definition Language used in database
management
DDTMS Distributed Data and Transaction Management System
DML Data Manipulation Language
DOD Department of Defense
DSL Digital Subscriber Loop
DTM Distributed Transaction Manager
DTMS Distributed Transaction Management System
EAI Enterprise Application Integration
EB Electronic Business
EC Electronic Commerce
EDI Electronic Data Interchange
EJB Enterprise Java Beans
ERP Enterprise Resource Planning
ETSI European Telecommunication Standards Institute
FCC Federal Communications Commission
FDDI Fiber Distributed Data Interface
FDM Frequency Division Multiplexing
FSO Free Space Optics
FTP File Transfer Protocol
GUI Graphical User Interface
I/O Input/Output
IDL Interface Definition Language used in CORBA and
other distributed object middleware services
IEEE Institute for Electrical and Electronic Engineers
IMS Information Management System - IBM DB/DC system on
mainframes
IP Internet Protocol
IPC Interprocess Communication
IRM Information Resource Management a management
methodology
ISDN Integrated Services Digital Network
ISO International Organization for Standardization
ISP Internet Service Provider

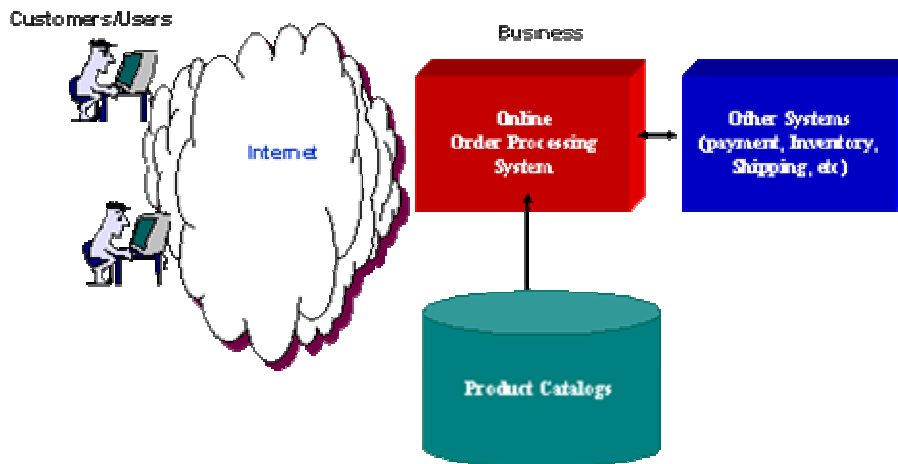
IT Information Technology
ITU International Telecommunications Union
ITUT International Telecommunications Union
 Telecommunications Services Sector
J2EE Java Version 2 Enterprise Edition
J2ME Java Version 2 Mobile Edition
JDBC Java Database Connectivity
LAN Local Area Network
LDBMS Local Database Management System
LLC Logical Link Control
LMDS Local Multipoint Distribution Service
LU Logical Unit - an endpoint in the IBM SNA environment
MAC Medium Access Control
MAN Metropolitan Area Network
Mbps Million bits per second
MMIT Microsoft Mobile Internet Toolkit
MOM Message Oriented Middleware
MVS Multiple Virtual System - operating system on IBM's
 mainframes
NBS National Bureau of Standards
NFS Network File Services - SUN Microsystem's File System
 for Networks
NIST National Institute of Standards and Technology
OAG Open Application Group a standards organization
ODBC Open Database Connectivity a de-facto standard for
 remote SQL
OMA Open Mobility Alliance
OMG Object Management Group the group that developed
 CORBA
OODBMS Object-Oriented Database Management System
OOPL Object-Oriented Programming Language
OS Operating System
OSF Open Software Foundation
OSF-DCE OSF Distributed Computing Environment
OSF-DME OSF Distributed Management Environment
OSI Open System Interconnection
PBX Private Branch Exchange

PGP Pretty Good Privacy
PKI Public Key Infrastructure
QoS Quality of Service
QPSK Quadrature Phase Shift Keying
RDA Remote Database Access
RFID Radio Frequency Identification
RPC Remote Procedure Call
SCM Supply Chain Management
SET Secure Electronic Transaction a security standard
SNMP Simple Network Management Protocol - TCP/IP Network
management Protocol
SOAP Simple Object Access Protocol part of Web
Services
SONET Synchronous Optical Network
SQL Structured Query Language
SSL Secure Socket Layer
TCP Transmission Control Protocol
TCP/IP Transmission Control Protocol/Internet Protocol
UDDI Universal Description, Discovery and Integration - a
registry for Web Services
UDP User Datagram Protocol - a protocol that runs on IP
UMTS Universal Mobile Telecommunication System (Mainly 3G
Cellular Technology)
UWB Ultra Wideband
VAN Value-added Network
VPN Virtual Private Network
VXML Voice eXtensible Markup Language
WAN Wide Area Network
WAP Wireless Application Protocol
WLL Wireless Local Loop
WML Wireless Markup Language
WS Web Services
WSN Wireless Sensor Network

1. OVERVIEW AND BUSINESS DRIVERS

Order Processing

Related Business Processes:



Order processing (OP) is usually the first step in selling goods and services to customers. Ideally speaking, an OP system only takes orders (a customer selects items to buy and places an order). However, in many cases, OP is not a separate system but instead an integral part of a larger purchasing/procurement system.

An OP system can use Internet to sell products and services to a global audience of customers. Web-based OP systems enable a “global” seller to differentiate its product offerings; enhance customer service; and lower marketing, sales, and order processing costs. For example, a shoe store can develop a Web-based OP system that allows customers to purchase shoes over the Internet. A very large number of Web-based OP systems, commonly known as online order processing systems, currently exist. Well-known examples are Amazon.com, Staples.com, shop.com, flowers.com, etc.

Common Automation Strategy: Use ecommerce platforms

- [More information on this topic](#)
- [Main requirements to consider](#)
- [Information models](#)

Related Business Processes:

- [Online Purchasing and eProcurement](#)

- [Websites and Webstorefronts](#)

Business Needs (edit and modify to fit your needs)

- need to improve sales
- need to improve customer satisfaction
- need to provide new services
- need to re-engineer business processes for efficiency
- need to standardize operational processes.
- need to gain economy in services, support, and buying power.
- need for better reporting. And tracking
- need to enable integration / automation with internal systems .
- need to enable integration / automation with external providers (B2B) .
- need to improve workflow mechanism to capture and manage business processes.
- need to eliminate individually programmed software that provides little or no compatibility between markets, regions, and headquarters.
- need for a support system that provides auditing, tracking, interfacing, and automation of tasks and workflows.
- need to reduce duplicity in data, processes, and effort.
- need to improve forecasting and budget tracking in all facets of the business.
- need to quickly design and implement processes and technology changes across the organization.
- need to monitor depreciation of assets.

2. BACKGROUND INFORMATION

Order Processing

Additional Information

A typical (order processing) OP system supports consumers, buyers, and suppliers engaging in on-line trade and includes links to back-end systems for inventory

updates and credit checking. The user may use a shopping cart and place an order by using a payment system. Naturally, the payment systems play an important role in this area. In addition, the system interacts with the classical "back-end" systems that handle inventory, payment settling, shipping and receiving, etc. The system allows users to search company catalogs for certain price ranges and then place orders for chosen product(s). All these systems need to work together to satisfy the demands of online buyers and sellers.

In many cases, order processing is not a separate system but instead is included as a function in a purchasing/payment system. However, in many cases an order processing system concentrates on taking the customer order, i.e., verifying customer information, verifying product information, and even creating a shopping cart. The idea is that order processing is a front-end to a purchasing system. Thus an OP system may be a separate component or part of a purchasing/procurement system.

3. APPLICATION FUNCTIONAL REQUIREMENTS

Order Processing

Main Functional Requirements

- Enable the company to identify, attract and increase potential buyers
- Provide support for customer registration and customer verification
- Classify and categorize orders in terms of size (e.g., large versus small), regions (e.g., overseas), and other possible categories
- Check credit histories if needed
- Allow customers to edit their order(s)
- Integrate with purchasing, marketing, business intelligence databases, and customer service systems for a complete view of the buyers.
- or universal access, support Web browsers to access and display information
- Support personalization for different types of customers
- Provide ability to notify management and users when any type of activity requires action.
- Capture information for clickstream mining

4. INFORMATION MODELS (USE CASES, CLASS DIAGRAMS, SEQUENCE DIAGRAMS)

== Insert information models here

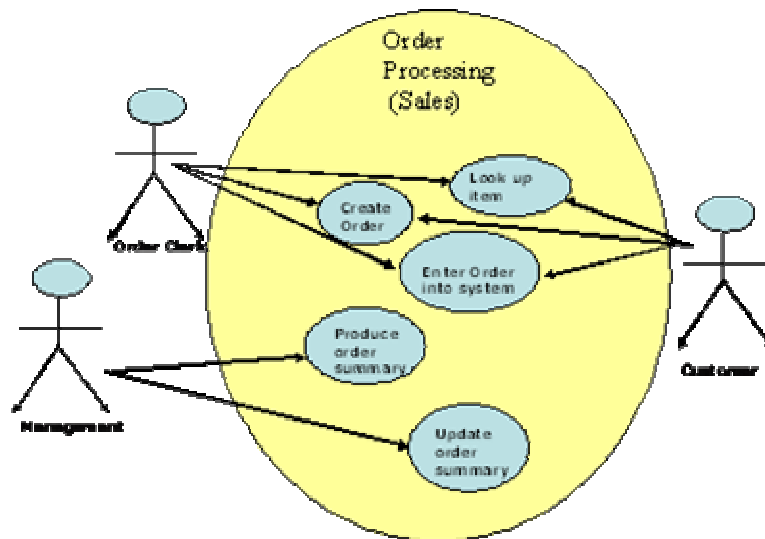
Order Processing Information Models

Note: These models (diagrams) are intended as sketches (patterns) to get you started quickly. These patterns can be refined, customized, and expanded based on your specific needs.

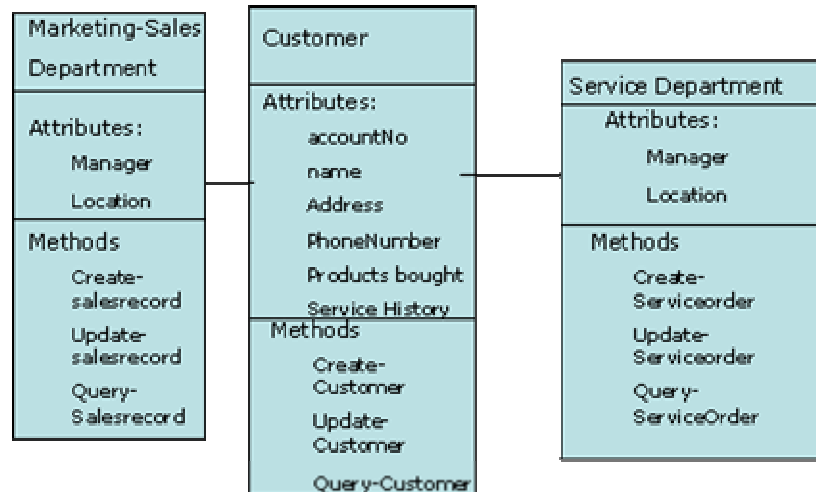
General Information:

- Order processing systems takes customer orders and process them before payment.
- The following information models represent different aspects of order processing systems for SMBs. These can be extended if needed

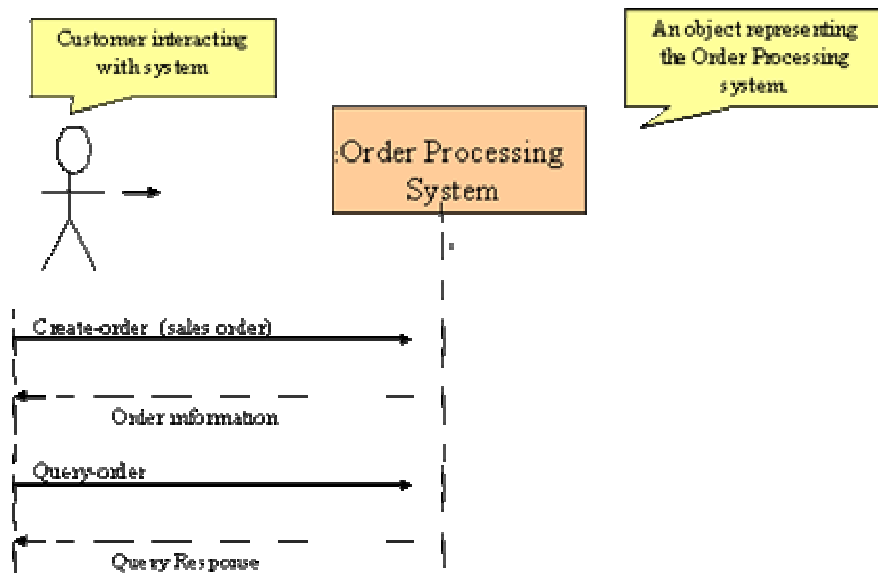
Order Processing Use Case - Simplified View



Order Processing Class Diagram - Simplified View



Order Processing SSD - Simplified View



5. LOGICAL ARCHITECTURE (APPLICATION PATTERN)

== Insert application pattern here

6. ARCHITECTURE AND INTEGRATION REQUIREMENTS (GENERAL)

Distributed Architecture Requirements

== Modify the following as needed

- The application must be decomposed into well defined business components that can be deployed, installed, and invoked independently over the Internet.
- The application must support an N tiered ($N > 2$) architecture with client, server, and databases.
- The architecture must support a front-end as well as back-end integration tiers.
- The application must support a replication mechanism so that all data and processes do not reside on one location.
- All levels of the architecture must be both forward and backward compatible.
- The application must be highly configurable within the server environment allowing for multiple workflow options concurrently.
- The application must allow for internal application customization in a GUI environment.

Interface/Integration Requirements

== Modify the following as needed

- The application must support well defined interfaces for external integration.
- The application programming interface must be documented and supported.
- The application must provide loose coupling with external systems for flexibility
- The application must have a browser-based GUI for user interactions
- The application must have conversion capabilities for different financial and regional data items (e.g., dollars to Euro).
- The application must be able to download external data files .
- The application must be able to process transactions with third party systems.
- The application must be able to interchange status information with third party systems for logistics functions.

- The application should be capable of supporting data mining applications.
- The application must provide an effective and efficient interface for highly mobile personnel.

7. ARCHITECTURE AND INTEGRATION REQUIREMENTS (SPECIALIZED BASED ON THE INTERVIEW)

Front-end Considerations

- Simple Web browser interface over HTTP because of lightweight informational interaction

Back-end Considerations

- No interfaces with back-end systems
- No data translation needed for back-end applications

B2B Considerations

- No interfaces with external systems for B2B interactions
- No data translation needed for B2B applications

8. OPERATIONAL REQUIREMENTS (GENERIC)

Security/Permission Requirements

- The solution shall allow for the creation of privileges and permissions based on work groups composed of different users at different sites.
- The solution shall enforce privileges and permissions on data fields and user screens.
- The application will support privileges for read, delete, and edit.
- A local administrator will be able to assign all user privileges and permissions.
- The application must conform to security standards, policies, and procedures established by the company

Performance Requirements

The system must provide adequate turnaround for interactive work.

The system should be robust to handle user access needs without crashes and restarts

The system must allow backup of needed data while being continually available to users for business as usual operations.

The system should degrade performance gracefully if workload increases dramatically.

Hardware Requirements

- The application server must support the following platforms: Windows/Linux/Others (specify)
- The application server must support the following platforms: Windows/Linux/Others (specify)
- The application client must support the following platforms: Windows/Linux/Others (specify)
- The application must support a hardware High Availability environment through replicated servers.
- Add more

Software Requirements

- The application server must utilize the most recent operating systems from the following list: Windows/Linux/Others (specify)
- The application client must utilize the most recent browser version from the following list: Internet Explorer/Netscape/FireFox (specify)
- The application must utilize relational databases.
- The application must utilize a commonly available and used development environment such as Rational Rose.
- Add more

9. VENDOR SUPPORT REQUIREMENTS

Application Service Provider (ASP) Support

- The ASP must guarantee, in writing, complete privacy and security of application and data.
- The ASP must support the application 24 hours a day, 7 days a week, 365 days a year.
- Response of an application failure must be made according to the failure types by the ASP. The application shall use 3 failure types: critical, important, and minor.
 - Critical failure shall mean that the System is un-useable. The response to a critical shall be immediate to 3 minutes with 30 minutes to repair after vendor notification.
 - An Important failure shall mean that some part of the system is un-useable. The response to an important failure shall be 1 hr with 4 hrs to repair after vendor notification.
 - A Minor failure shall mean that impairment is affecting application performance. The response to a minor failure shall be within 24 hours with 7 days to repair after vendor notification.
- The ASP will support necessary upgrades of the software features.
- The ASP must provide all the necessary documentation needed for the customer to use the applications (e.g., a user guide, troubleshooting information, etc).

Back Up and Maintenance Support

- The backup files shall be generated and stored according to the following IT standards
 - backups will be taken once a day (recommended) or once a week (required)
 - backup copies will be stored at an external site for safety
- The application shall support an incremental online backup of the complete system, including database, as well as a full weekly online backup..
- The application vendor must provide maintenance and upgrades on a regular basis.

Documentation Support

The application provider, in the following discussion, may be an outsourced development house or an internal software development group.

- The application vendor must provide a Users guide for all user categories interfaces.
- The application vendor must provide an Administrators guide for the application.
- The application vendor must provide online Help on all client interfaces.

- The application vendor must supply documentation on the applications maintenance.
- The application vendor must provide documentation on each database used in the proposed solution.
- The application vendor must supply upgrade instructions and release notes 30 days before a release.
- The application vendor must provide upgrade and rollback procedures for new releases.

Training Support

- The application vendor must provide on-site and/or application vendors site training. .
- The application vendor must provide interactive training on CD-ROM or through Web.

10. PROJECT INFORMATION

Project planning is essential for any successful effort. A project plan typically includes project goals and objectives, tasks needed to achieve the goals, the resources needed, and the timelines for completion. It also typically includes charts to identify the "critical paths". Specifically, it should have the following:

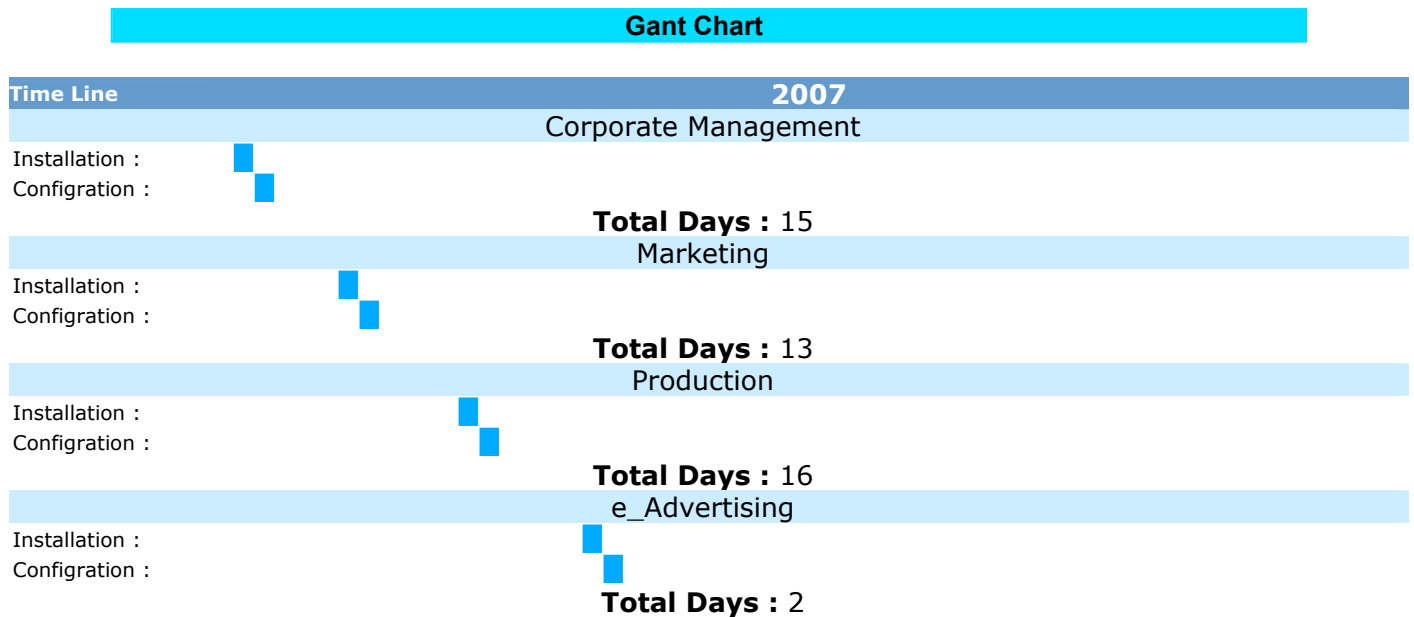
1. A WBS(Work Break Structure) for the Business Processes.
2. A Gantt Chart from the WBS.
3. Staffing information (who will do what)

Here is a sample WBS for order processing application.

Order Processing Integration				
Activities	Starting Date			Days
Analysis and Design	May	13	2007	7
Implementation	May	14	2007	25

1.1. COST	Estimated staff effort for buying	2
	Estimated expense per person day	\$ 500
	Estimated staff cost	\$ 1000
	Estimated cost for software package	\$ 500
	Complete estimated cost for software package	\$ 1500

The following is a Sample Gant Chart



The following is a sample staffing chart:

Project Manager:
Systems analyst and architect
Customer Contact (s):
Vendor Contacts:
Development manager: