



Functional Specification

ASP.NET Ebusiness System

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Table of Contents

Summary.....	1
1. Introduction.....	1
1.1. The purpose of the software	1
1.2. System Architecture	2
1.3. Software Components	2
2. General Description.....	3
2.1. General.....	3
2.2. Ebusiness ASP.NET Storefront.....	3
2.3. Ebusiness ASP.NET Admin Site.....	4
2.3.1. Product Entry and Configuration.....	4
2.3.2. Customer Management.....	4
2.3.3. Tax Management.....	5
2.3.4. Special and Extended Pricing, Quantity Discount Tables.....	5
2.4. Ebusiness Web Service	5
2.5. Great Plains Server Service	5
2.6. Great Plains SDK Components.....	6
2.6.1. Company Component	6
2.6.2. Item Component	6
2.6.3. Tax Component.....	7
2.6.4. SOP Component	7
2.6.5. Customer Component	7
2.6.6. System Component	8
2.7. Great Plains Service Administration Interface	8
3. System Interface.....	8
3.1. General Interface and Function Design	8

Summary

KTL Solutions' ASP.NET Ebusiness suite is the next step in the evolution of KTL's current Ebusiness suite designed using Visual Studio 6. By redesigning this solution using the .net framework, and using the Microsoft Visual Studio .NET tools and interfaces in its design, the suite is improved by offering features and capabilities unavailable in the previous version. These improvements include web based administration, the option for the solution to be hosted by an internet service provider, a more componentized Great Plains engine, the ability to house the web server and Great Plains server on separate machines, consideration for firewalls, a more user friendly and up to date storefront website, as well as improvements provided by the architecture of the .net framework like improved versioning features and an end to component registration issues.

1. Introduction

1.1. The purpose of the software

The KTL ASP.net Ebusiness suite provides a consumer or business to business, web based storefront which integrates with the Microsoft Great Plains accounting system. Ebusiness allows businesses to receive and process orders from a web interface, as well as display orders through the web which were created through the ASP.net storefront or from the Great Plains interface.

The following high level components will be in the system:

1. ASP.net Ebusiness Storefront – this is the web based store front through which customer and users view orders, create orders, and obtain information about the company or inventory status.
2. ASP.net Ebusiness Administration site– this is the web site that administrators use for managing products, customers, discounts, pricing, sales, user privileges, as well as any other administrative tasks pertaining to the storefront site.
3. Web Server Ebusiness Web Service – this web service resides on the Web Server which hosts the SQL server database that houses the data entered and used by the storefront and administration web sites. This web service gathers information from the storefront database, such as orders and customers, and sends this data to the Great Plains server when called by a service which resides on the server. It also retrieves data gathered by service on the Great Plains server and updates the web server database with new or updated information, such as tax information, orders, customers, etc.
4. Great Plains Server Service – this service calls the Ebusiness web service on a scheduled basis, and retrieves information gathered by the web service, such as new orders and customers. This service also gathers new and updated data from the Great Plains database, such as inventory and orders, and sends it to the web service so it may update the database that serves the Ebusiness web sites. This service then calls the Great Plains components to process sales orders in the Great Plains system.
5. Great Plains SDK Components – these components reside on the Great Plains server and are used for processing sales orders, as well as any other necessary functions like adding customers.
6. Great Plains Server Service Administrative Interface – an interface to the Great Plains Server Service is provided which allows the user to point the service to the correct URL

of the Ebusiness Web Service and the correct Company Database within the Great Plains system. Scheduling the service to run is also performed using this interface.

The ASP.NET Ebusiness system will be designed using Microsoft .Net and will work with Windows operating systems that are compatible with the .Net framework. Utilizing XML technology with Microsoft .Net will enable us to build a scalable application that could be adapted to a multitude of devices.

1.2. System Architecture

Most systems fail due to an ineffective architecture. An ineffective architecture doesn't allow for the system to evolve to the next generation of features and functions as the business requirements change.

The system will be designed using an N-Tier design. N-Tier means that the distinct components of the system will be broken into individual parts. This will allow for the system to evolve over time with minimal impact to the existing system or the original functionality.

The system will be broken down into three components:

1. The presentation layer – The presentation layer is the component that displays data to the user. This layer communicates with the business logic layer to perform the business rules of the application. In this case, the Ebusiness storefront and administration websites will make up the presentation layer.
2. The business logic layer – The business logic layer performs all of the rules of the application and the validation of the data that is entered through the presentation layer. The business logic layer is used as the hub between the presentation layer and the database layer. The benefit of having a separate business logic layer is that many different types of interfaces can be built to work with the system. In this case, this layer will be comprised of the Ebusiness Web Service, the Great Plains Server Service, and the Great Plains SDK Components.
3. The database layer – The database layer is used to store and retrieve the data. The business logic layer communicates with the database layer. A properly designed database layer allows for the addition of tables and fields with minimal impact on the system itself. In this case, the ASP.NET Storefront SQL Server Database and the Great Plains SQL Server database will be the database layer.

1.3. Software Components

The software components that will be used to develop this system will be based on standard Microsoft Technology. Utilizing Microsoft Technology will allow us to integrate to, communicate with and utilize thousands of business applications available today.

The following components and their purpose will be used:

1. Microsoft .Net – We will build the presentation and business logic layer utilizing .Net technologies. This will allow us to build a thin layer application delivered over many different types of interfaces.
2. SQL Server 2000 – SQL Server 2000 will be used to store the data for the application.

3. Microsoft Business Solutions- Great Plains 8.0 will be used to interact with the accounting data for the program.
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2. General Description

2.1. General

This general description specifies the system from the user's point of view.

The user should always be able to see all the functions that are available for him. When a function is not available in some state of the system (e.g. due to restricted privilege of the user to the current document), the non-availability must be clearly visible.

Whenever a response time of more than 5 seconds is expected for a function, an immediate feedback should be given to indicate that the command has been noticed. This could be in the form of a progress bar, clock, etc.

The language of the user interface is English.

The terminology and naming of fields on the screen will be determined during the technical specification.

2.2. Ebusiness ASP.NET Storefront

The Ebusiness ASP.net Storefront will be accessible by browsing with an internet browser to the URL that the customer has created, and points to the virtual server in which the storefront files reside.

The workspace area will contain sections that are part of the pre-existing asp.net storefront package and are configurable:

1. Login Section – user will log in or out and be able to create an account
2. Categories – act as catalog menu items that products reside under
3. Product Types- groups actual Products
4. Variants allow the further breakdown of a product by color, size, etc.
5. Departments – act as additional sections that define products
6. Home – home page and includes company announcements, new, etc.
7. Customer Service – customer can track orders, request support, etc.
8. My Account – order information as well as customer specific address information, billing, etc.
9. Help and Info – help files
10. Search – customer can search for specific products, information, categories, etc.
11. Shopping Cart – houses customer's shopping cart

2.3. Ebusiness ASP.NET Admin Site

The user will access the Ebusiness Administration site by browsing to the URL they have create for the administration website. When the user accesses the management section, they will have the ability to perform various actions:

1. Add and configure Manufacturers
2. Add and configure Categories.
3. Add and configure Product Types.
4. Add and configure Departments.
5. Add and configure Products, Product Prices, configure sales, features(variants).
6. Manage Customers.
7. Edit Staff.
8. Manage Polls.
9. Manage Ratings.
10. Edit Partners.
11. Manage Credit Card Types.
12. Manage Affiliates.
13. Manage Coupons.
14. Set Quantity Discounts.
15. Add New Topics.
16. Create Image Galleries.
17. Upload images.
18. Configure storewide settings (skins, rules, etc.)
19. Manage Sales prompts.
20. Manage mail features.
21. Reset SQL Server Log.
22. Track Expenses.
23. View and Manage Orders.
24. Enter Offline Orders.
25. View Reports.
26. Configure Shipping.
27. Manage State Tax rates.
28. Add and configure Users.

Some of the more important features worth mentioning are listed below.

2.3.1. Product Entry and Configuration

When adding a product to a category, and publishing it for use by the storefront, administrators will be limited to products that exist in the Great Plains inventory system. When configuring prices for these items, the same will be true. Data pertaining to the products in the Great Plains inventory system will uploaded to the database that serves the web system periodically by the Ebusiness web service and Great Plains service.

2.3.2. Customer Management

When managing customers, customer levels, access, etc., administrators will be limited to customers that exist in the web system, which will in turn be entered or updated in the Great Plains system. Data pertaining to the customers in the Great Plains system will uploaded to the

database that serves the web system periodically by the Ebusiness web service and Great Plains service.

2.3.3. Tax Management

Administrators must create tax schedules in the Great Plains system that service the web storefront specifically. These tax schedules usually consist of a tax rate that combines the state sales tax and the highest city sales tax in the state. The Ebusiness Web Service and Great Plains Service will import these specific tax schedules into the database that services the web storefront.

2.3.4. Special and Extended Pricing, Quantity Discount Tables

Many of the discount and special features that exist for customers and products in the ASP.NET Storefront system correspond and integrate with Great Plains' system of pricing and discounts. Changes in one system will be reflected in the other.

2.4. Ebusiness Web Service

The Ebusiness Web Service resides on a web server that has access to the ASP.NET Storefront Database. This web service is periodically called by the Great Plains Server Service which prompts it to gather new and updated orders, customers, and other updated data that integrates with Great Plains. The web server also retrieves updated data like inventory from Great Plains and updates the web server database.

The web service will perform the following actions:

1. Gather, Send data to Great Plains – The web service will gather data pertaining to customers, orders, and any data that integrates with Great Plains and may update Great Plains with the ASP.NET Web Administration web site.
2. Retrieve data from Great Plains – The web service will retrieve data from Great Plains which may be needed to update the web server database, like customers, orders, products, inventory, pricing, taxes, discounts, etc.
3. Update web server database – The web service will update information pertaining to customers, orders, products, inventory, pricing, taxes, discounts, and any other integrated information.

2.5. Great Plains Server Service

The Great Plains Server Service resides on the Great Plains Server housing its SQL Server database. This service runs on a schedule and performs several actions.

The Great Plains service will perform the following actions:

1. Gather, Send data to Web Service – The Great Plains service will gather new or updated data pertaining to customers, orders, products, inventory, pricing, taxes, discounts, and any other integrated information that is used by the web system.
2. Retrieve Data from Web Service – The Great Plains Service will retrieve data from the web system pertaining to customers and orders in order to process sales orders. It also retrieves any data needed for integration.
3. Call Great Plains SDK Components to Process Sales Orders – The service uses the information it has retrieved and passes it to the Great Plains SDK components, which create sales order documents.

2.6. Great Plains SDK Components

The Great Plains SDK Components are .net assemblies that directly access the Great Plains database system. These components are used to create sales order documents, as well as update or pull information pertaining to customers, company, orders, taxes, etc.

The following components will make up the Great Plains SDK Components:

1. Company Component – Company data
2. Item Component – Item, product data
3. Tax Component – Tax data
4. SOP Component – Sales Order Document data, processing
5. Customer Component – Customer data
6. System Component – System specific, Dynamics data

2.6.1. Company Component

The component houses the following classes:

- Company (corresponds to SY01500)
- Company Addresses (corresponds to SY00600)
- Company Address (collection used in Company Addresses)
- CheckBook (CM00100)
- ReceivablesSetup (RM40101)
- ReceivablesTypeSetup (RM40401)

2.6.2. Item Component

The component houses the following classes:

- Item (IV00101)
- Item Class (IV40400)
- Item Currencies (IV00105)
- Item Currency (collection)
- ItemKitItems (IV00104)
- ItemKitItem (collection)
- ItemPrices (IV00108)

- ItemPrice (collection)
- ItemPurchaseOptions (IV00106)
- ItemPurchaseOption (collection)
- ItemSites (IV00102)
- ItemSite (collection)
- UOMSchedule (IV40202,IV40201)

2.6.3. Tax Component

The component houses the following classes:

- TaxSchedule (TX00102)
- TaxDetail (TX00201)

2.6.4. SOP Component

The component houses the following classes:

- SalesTransaction (SOP10100)
- SopSetup (SOP40100)
- SopTypeSetup (SOP40200)
- STLineItems (SOP10200)
- STLineItem (collection)
- STPayments (SOP10103)
- STPayment (collection)
- STSerialNumbers (SOP10201)
- STSerialNumber (collection)
- STTaxLines (SOP10105)
- STTaxLine (collection)
- STKitComponents (SOP10200)
- STKitComponent (collection)
- STDistributions (SOP10102)
- STDistribution (collection)
- STCommissions (SOP10101)
- STCommission (collection)
- Control (IV40100)
- SalesBatch

2.6.5. Customer Component

The component houses the following classes:

- Customer (RM00101)
- Customer Addresses (RM00102)
- Customer Address (collection)
- Salesperson (RM00301)

2.6.6. System Component

The component houses the following classes:

- RecordNotes (SY03900)
- AuditTrailCodes (SY00100)
- CreditCards (SY03100)
- Currency (MC40200)
- PaymentTerms (SY03300)
- PaymentTerm (collection)
- PostingAccounts (SY01100)

2.7. Great Plains Service Administration Interface

The Great Plains Service Administration Interface is a windows application that allows the user to configure the Great Plains Service. Users will be able to set the URL location of the Ebusiness Web Service, point the service to the correct company database with Great Plains, and schedule the service to run.

The following components will make up the Service Administration Interface:

1. Web Service URL Screen – User can enter and save the URL of the Ebusiness Web Service used by this installation of the Great Plains Server Service.
2. Great Plains Company Database Screen – User can enter and save the datasource location of the Great Plains company database used by this installation of the Great Plains Server Service.
3. Scheduling Screen – User can schedule how frequently the Great Plains Server Service will run.

3. System Interface

The system interface that the users will use on a day to day basis will be a web based interface. The user will access the system by browsing to the correct URL using an internet browser.

3.1. General Interface and Function Design

The architecture of the interface will be consistent throughout the system. The system will have two main sections:

1. The navigation menu – This will display the areas of the system that the user can operate. This will menu will differ depending on the web site used.
 2. The center work area – This will display the forms that correspond to the area the user has selected. The user will be able to enter and modify data in these forms.
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Diagram 1 – Ebusiness Architecture

