Samples

Employment/Hiring Testing

Original statements:

- The application must be able to track the different pre-employment tests (e.g., drug, physiology, aptitude, polygraph, and etc) and pre-employment checks (e.g., credit, education, past employment, criminal and etc.) that an organization may decide to use
- The application must also be able to record the results of these tests and checks
- The application must be able to record any pre-employment tests that have been failed and associate any disciplinary action up to and including withdrawing the offer

User requirement:

HIR.1 The system shall provide for the monitoring of pre-employment test and checks chosen by the organization for each applicant processed.

Functional requirements:

1. The system shall provide a client-specific master set of pre-employment test and check definitions.
2. The system shall provide for the assignment or exclusion of pre-employment tests and checks to each applicant processed for hiring.
3. The system shall provide for the recording of pre-employment test and check activities against an applicant; including notification, scheduling, execution, results, and confirmations.
4. The system shall provide management and hiring managers with on-going status of each applicant's activities against their assigned pre-employment test and check activities.
5. The system shall integrate pre-employment test and check results into any subsequent processing for acceptance or rejection of each applicant.

Handling Compliments & Complaints

User requirement:

SAL.17 Provide the ability to track individual customer compliments, complaints and resolutions. The system needs to provide information regarding complaints and compliments, as well as a record of all activity conducted to reach resolution.

Functional requirements:

3.4 Handling Compliments. Compliments received from customers should be:

- **3.4.1 Recorded.** Document and tie the compliment to the appropriate customer record to be available electronically.
- **3.4.2 Acknowledged.** System will facilitate the acknowledging of customer compliments. (Thank you)
- **3.4.3 Tied to the Service Transaction.** Deliver the documentation to the relevant department electronically.
- **3.4.4 Analyzed.** Analyze characteristics of service transactions that prompted compliments. Includes patterns to improve service.

3.5 Handling Complaints. Complaints received from customers should be:

- **3.5.1 Recorded.** Document and tie to the appropriate customer record to be available electronically.
- **3.5.2 Acknowledged.** System will facilitate the acknowledging of customer complaints.
- **3.5.3 Tied to the Service Transaction.** Deliver the documentation to the relevant department electronically.
- **3.5.4 Resolved.** Require and record resolution to each complaint tied to the service transaction.
- **3.5.5 Communicated to Customer.** If resolution time takes longer than designated by management then acknowledgement will be sent to customer.
- **3.5.6 Analyzed.** Analyze characteristics of service transactions that prompted complaints. Includes patterns to improve service.
- **3.5.7 Followed Up.** The system will facilitate customer follow-up within 30 days provided the complaint involves a partner or is considered severe. Follow-up may include a system-generated customer service survey and additional sales opportunities through prompts.

User Sign-on & Security

User requirement:

SO.1 The system shall uniquely identify each user.

SO.2 The system shall assure that each user accesses only those aspects of the system for which they are authorized.

Functional requirements:

1. The system shall verify user identification by requiring user sign-on.

2 The system shall provide user authorizations through specifically granted permissions.

3 The system shall generalize users in order to ease security maintenance.

4. The system shall provide role-based templates to ease the security definition function.

5. The system shall limit user access to only authorized information.

6. The system shall actively control functional and data access throughout a user's session based on the granted permissions and information access profile.

7. The system shall provide for the definition of administrators authorized to maintain user identifiers, profiles, and permissions.

BSR Report – Data Feed Feasibility

The sample provided below is excerpted from an actual Business System Requirements Report created using the process taught in this course. It is intended to provide an example of how the overall document can be structured, and of the tone and type of information that is provided in each requirement statement. Because this sample is an extract of a much larger document, the numbering scheme will not flow as it would in a complete document.

Note: This document version was for a project that wasn't looking to develop a working system immediately. The intent was to focus on User Requirements as **an exploratory effort**. Whether or not the project would move on toward implementation after requirements was unknown at the time. As such, this document is as it appeared **very late** in the requirements process. The high-level User Requirements are very broad and unfinished, but that was the intent of the project. No Functional Requirement statements have been provided.

Conceptual System

The Data Feed & Reporting System collects order and delivery data from the various business units in the company, stores that data in a sharable data mart within the Customer Data Warehouse (CDW), and produces reports in support of the business delivery metric, and transmits required delivery metric data for corporate-level reporting. The primary use is to measure on-time delivery performance vs. plan and facilitate the impact of continuous improvement efforts at the shipment-location level.

The *conceptual* Data Feed & Reporting System described in this section provides basic data management functionality in support of the company's various business unit's compliance with corporate reporting requirements for the customer delivery metric. This material describes the system requirements independent of any technical considerations.

The system needs to perform four conceptual functions:

1. Receive source data feeds from each shipping location,
2. Load and manage a data mart of consolidated source data,
3. Produce local delivery metric reports for use within operating locations, and
4. Provide required data transmittals to corporate headquarters for corporate metric reporting.

Data Requirements

This system is primarily about data; the measurement data that supports the customer delivery metric, and the segmentation data that provides visibility into that data. Specific data requirements include:

1. **The system shall provide data quality indicators for each data field.** No specific indicators have yet been identified; however, the complexity and variability of the data being collected from such a diversity of sources raises concerns about data definition and integrity risks. Possible indicators might include:
    a. **Explicit vs. Proxy Indicator.** In several cases, the way a field value is validated and used could be dependent upon whether the value was directly taken from the source system or was derived from the data extraction utility that created the data feed.
    b. **Reason Codes for Change.** Aspects of the use of some data fields may be dependent on the reasons some of the data values change. For example, a canceled order might be treated

differently for metric purposes if it was cancelled by the customer because of late shipment versus any other non-delivery based reason.

c. **ASAP Indicator.** If a surrogate requested ship date of order date plus one day is being used because the customer requested the order ASAP, the metric reports might need to know that such a condition occurred. Therefore, the use of such a surrogate would need to be reported as an indicator in the source data feed.

Interface Requirements

The system requires that data from multiple source applications systems be consolidated and loaded into a common data area for reporting and analysis. This represents the majority of the processing capability and complexity of the system. Specific interface requirements include:

Sourcing

Requirements for obtaining the necessary data from each operating source systems include:

2. **The system shall accept data from multiple operations source data systems.** Collecting all of the necessary data from within each operating location will require accessing data from multiple source systems.
3. **The system shall provide a defined format for source data transactions.** Final format for the source data feeds is still not completely determined. There are issues surrounding the definition of a transmittal record than will be adequate for all of the types of order and shipment transactions (e.g. entered, shipped, delivered) defined for support of the delivery metric.
4. **Each location data feed shall conform to the specified source data transaction format.** Conformance to layouts is contingent upon final definition of the source feed transactions.
5. **Source data for each location shall include at least 40% of shipments.** While all orders and shipments logically belong in the delivery metric, a baseline of 40% of volume is considered essential.

Loading

Requirements for validating and loading operating location source data include:

6. **The system should validate all source data feed transactions.** Each location is responsible for verifying that all data sent in a data feed as been validated and is correct to all extents possible. Validation within this central system will be limited to those errors that would actually disrupt processing or produce erroneous results. Such validation may include:
   a. Syntax errors shall include invalid dates, invalid shared codes, or missing required values.
   b. Semantic errors shall include improper combinations of fields, and illogical date sequences.
7. **The system should route load data errors back to the support team responsible for the source feed containing the errors.** No decisions have been reached on exactly how to do this. Different mechanisms will be needed depending upon the final technical design considered for the implementation.
8. **The system shall provide traceability, for each data element stored, back to the source system.**
9. **Fiscal calendar weeks shall be determined based on a Monday-through-Sunday calendar.** Because this is a data translation common to all data feeds, the determination of fiscal period will be carried out in this system. Source systems need only provide specific dates.

10. **The system shall interpret certain data conditions according to pre-defined business rules.** The exact impact of this requirement on central processing remains unclear. It appears that any implied processing will be carried out in the source system prior to the data feed being sent to the central system. In this case, this requirement is unnecessary within the central system. Further analysis is needed in order to finalize this conclusion. Rules include:
    a. The system shall interpret the delivery of international orders according to the destination point at which the ownership of goods is transferred depending on the shipment terms.
    b. The system shall interpret sales orders requested "ASAP" (as soon as possible) having a requested delivery date of order date plus one day.
11. **The system shall annotate non-translated code values to assure uniqueness of segmentation data values across location data records.** For segmentation fields not converted to common corporate values in the data feed, a high-order value will be appended to segmentation data values in order to assure that data is properly separated for multiple locations sharing common data values in segmentation fields.

Storage

Requirements for storing location source data include:

12. **The system shall store collected source data in a common data mart.** The design of such a data mart has not yet been conducted, but it is anticipated that the data requirements of this system are unique enough that a separate physical data mart will be required within the CDW environment.
13. **The system shall retain data in the data mart indefinitely.** Standard reports require retention of data for at least 15 weeks, however longer-term longitudinal analysis is expected to be required.
14. **The system shall support the appropriate data volumes over time.** The size of the data base design to support these data mart requirements must be sufficient to handle the volume of order-delivery-lines handled across the businesses; and to maintain such records arriving at the appropriate frequency.

Usage Requirements

The primary purpose of the system is to accumulate a metric data mart that will be available for local standard and *ad hoc* reporting within participating businesses as a driver for continuous improvement. As a by-product, the system will provide a metric data feed to headquarters for consolidated metrics reporting.. Specific usage requirements include:

Control

Requirements for controlling access to consolidated location source data include:

15. **The system shall provide views to all data across the entire company.** The convention within the company is that all authorized users have access to all metrics data across the different businesses.
16. **The system shall limit access to authorized users.** The definition of such user authorizations has not yet been determined.
17. **The system shall warn of missing source data feeds.** The viability of the delivery metric requires that all necessary data be available at the time that the standard reports are produced. Missing source feeds could indicate an under-reporting of delivery-related failures.
18. **The system shall prohibit downloading of data.** Particularly owing to the sharing of information across the businesses, the system will not be used to make detail customer, order, or volume information available for downloading.

Analysis

Requirements for accessing and using metric data for analysis include:

19. **The system shall allow analysis of data contained in the metric data mart.** Reports will not be dependent upon a complete set of expected data being available at the time of the production of any report;

meaning that the reports may be run produced at any time. The system will be as fault tolerant as possible, being able to produce reports even if some or most of the desired data feeds have not been loaded.

20. **Orders and shipments shall be included in analysis at their most advanced error-free lifecycle stage.** Data received as invalid will not be included in the reports, although it will be stored in the data mart pending correction.
21. **Delivery incidents shall be inferred by the absence of data for future order stages.** Because data feeds from each business unit will differ in the initial implementation stages, the system will require intelligence to be able to infer order-ship transitions for which a transaction record may not actually be received by the system. Situations in which such inferences may be required include:
    a. **Backorders.** Open orders that haven't (or can't possibly) ship by their ship date represent delivery incidents even though no actual shipping date is available for an accurate metric measurement.
    b. **Customer Pickups.** The different businesses have slightly different rules for pickups, but all consider an order shipped when available at the dock. Late customer pickups are not treated as delivery incidents.

Reporting

Requirements for reporting of metric data include:

22. **The system shall provide a collection of standardized reports**, including: *<omitted>*
23. **Standard reports shall look at multiple rolling weeks with a defined delay.** Current report requirements include rolling thirteen weeks, with a two week delay.
24. **Reports shall include data for selectable subsets of segmentation data.** Detail needs have not yet been defined, but examples might include running the reports for only certain source points, product types, or customer segments.
25. **Reports shall be available via the Intranet.**

Transmission

Requirements for sending metric data to headquarters include:

26. **The system shall transmit required data according to required schedules.** Final transmission requirements, including format and schedules, will be determined during design.

BSR Report – Human Resources

The sample provided below is excerpted from an actual Business System Requirements Report created using the process taught in this course. It is intended to provide an example of how the overall document can be structured, and of the tone and type of information that is provided in each requirement statement. Because this sample is an extract of a much larger document, the numbering scheme will not flow as it would in a complete document.

Note: This is a document version as it might appear **very early** in the requirements process. Note that the User Requirement statements are too numerous and overlapping. The Functional Requirements have only been outlined. Much of the detail in the User Requirements will eventually be moved down into the Functional Requirements, and the User Requirements section will solidify with around 15-20 statements per topical area.

User Requirements

Hiring Requirements

The Hiring requirements have been defined to encompass wide area of functionality. The XYZ system shall define a resource as a generic entity that can be categorized as an employee, consultant, temporary staff etc. This resource shall be treated as an individual entity or as a group, that could consist of individuals or other groups. The processes for acquiring and managing resources will be rule driven; these rules shall be defined by each client. The system shall use workflow tools to proactively manage and monitor all processes.

Statements of Requirement

The XYZ system shall:

HIR.1 Provide for collaborative (calendar feature) scheduling between organizer, interviewers and candidate, with access via the Internet, and ability to recognize mutual availability.

HIR.2 Provide multiple paths to receive resumes, referrals, and applications.

HIR.3 Maintain a rejected resume database (catalogued and categorized) and allow customers if they choose to compare those candidates to open positions requirements and hold rejected resumes for a customer provided amount of time.

HIR.4 Link to third parties (recruiters, contractors) via the web allowing flow of information in and access to information by approval.

HIR.5 Identify the skills and requirements for open positions.

HIR.6 Provide an internal job posting process and allow internal candidates the ability to apply for an open position. The Posting process must contain flexible posting rules.

HIR.7 Provide the ability to measure efficiency of recruiting efforts.

HIR.8 Provide an interview candidate evaluation tool.

HIR.9 Provide the ability to compare skills required for an open position to candidate skills.

HIR.10 Develop a hiring requisition process with approval levels and tracking.

HIR.11 Provide an ability to record resume details.

HIR.13 Provide the ability to associate skills required for an open position from a skills database.

HIR.14 Provide for multiple rules, alerts, and workflow for hiring the various types of resources.

HIR.15 Post open positions to web sites such as Hotjobs.com and agencies such as the America's Job Bank.

HIR.16 Be able to receive candidate responses and perform a quick assessment comparing skills required to skills possessed by a candidate.

HIR.17 Provide an automated rejection capability for candidates that do not meet requirements anywhere in the hiring process.

HIR.18 Develop a shortlist process.

HIR.19 With respect to comparing required skills to candidate skills, provide an automated capability that provides weighting criteria. In other words, there must be a one to one skills match but each skill can be a different weight. For example, a technical skill might be much more important than a teamwork skill for a specific position.

HIR.20 Send confirmation letters back to candidates acknowledging receipt of resume and/or application, offer letters, rejection notices, and receive confirmation from candidates.

HIR.21 Provide an interview scheduling and evaluation process.

HIR.22 Provide links to travel services so that travel can be arranged for the candidate and interviewers.

HIR.23 If the candidate is from a consulting firm, provide an interface with or cut a purchase order. The information on the PO can include: PO number, Vendor, Candidate, fees, payment cycle, engagement duration, and terms.

HIR.25 Provide for Orientation lists (tailored to each client) and validation on completion of the orientation checklist.

HIR.26 Provide for hiring information to electronically feed into Employee Details.

HIR.28 Include a process for arranging/conducting campus interviews for campus recruiting.

HIR.29 Provide a link to salary surveys and use them to compare to the compensation level anticipated on the RFR to survey results. Examples of the available surveys are US Salary Survey and etc.

Employment Requirements

The purpose of the Employment module is to maintain records on resources once they have been acquired. The system shall be able to manage all information about the resource from this module. All history on the resource activities shall be recorded, a full auditable history shall be created.

Statements of Requirement

The XYZ system shall:

EMP.1 Maintain an Employee Profile with critical information for managing employee lifecycle including processing resource records, describing job descriptions, retaining basic salary information, update COBRA and benefit plans, and identifying training needs.

EMP.2 Provide an assignment process that assigns both primary and numerous secondary assignments. The process will be able to provide assignment capabilities for future periods.

EMP.3 Allow the assignment module to contain specific people and team goals and link assignments to skills needed.

EMP.4 Notify current supervisors of when assignment durations are about to end.

EMP.5 Integrate with the job description and skills master tables.

EMP.6 Provide the processing necessary to plan overall shift work coverage assign specific resource level calendars. The processes take the company calendar created in Organization Design and map anticipated schedule demand against specific resources to create time and assignments with adequate shift coverage to satisfy overall requirements.

EMP.7 Maintain a company calendar function that will allow for the determination of working and non working days, roles, and quantity needed for a shift, and available resources.

EMP.8 Monitor shift coverage levels and alert managers if shifts are short handed.

EMP.9 Develop a comprehensive leave processing capability including encashment, leave exception, and allow resources access by ESS.

EMP.10 Record promotion details in the employee details, update approval hierarchy tables, and record payroll changes.

EMP.11 Provide a comprehensive employee transfer process

EMP.12 Develop a comprehensive employee termination process reflecting the many termination possibilities

EMP.13 Produce reports that analyze turnover results

Compensation Requirements

The purpose of Compensation is to provide each individual with remuneration based on their contribution and value to the organization. The system shall allow an organization to develop and document a structured plan that is managed by the client. This plan shall be used as a metric from which each resource is compared and measured. The system shall create a documented path in order to evaluate resource performance, track industry trends and manage any analytical measurements that a client may need.

Statements of Requirement

The XYZ system shall:

COMP.1 Have capability via input tables for clients to label and provide a text description for each of their compensation plans.

COMP.2 Provide functionality for an electronic routing/approval process for all events – recommendation for new and or changes to salary structures, job evaluations, salary changes, cash incentive awards and long-term plan awards.

COMP.3 Have capability via input tables for clients to identify within each salary structure the number of grades/band levels, and input for each grade/band up to 11 data points representing ascending levels of pay.

COMP.4 Calculate the salary ranges populated by the clients on various payroll bases – annual, monthly, semi-monthly, bi-weekly, weekly and hourly.

COMP.5 Have the capability to calculate derivative salary structures, and salary ranges based on a percentage (geographic or functional index) inputted by the clients via a table.

COMP.6 Enable clients to identify business locations and regions, and/or jobs that are associated with each salary structure

COMP.7 Have the capability via an input table for clients to assign to each job the following attributes: FLSA status – exempt (not eligible for statutory overtime payments) or non-exempt (eligible for overtime payments), and Benchmark job designation (yes or no);.

COMP.8 Have the capability for clients via input tables to record or import via electronic means salary survey data for each of their benchmark jobs.

COMP.9 Have capability via input tables for clients to define specific elements and calculations for each of their job evaluation methodologies.

COMP.10 Have capability as determined by clients, to retrieve salary survey data for selected jobs as well as applicable salary structures

COMP.11 Have capability as determined by clients, to retrieve salary survey data for selected jobs as well as applicable salary structures

COMP.12 Record the approved job evaluation to the job database and all applicable employee profiles. .

COMP.13 Provide capability via input tables for clients to specify and provide a text description for their different types of salary increase actions.

COMP.14 Provide capability for clients via input tables to record salary increase guidelines for each type of salary action including guidelines differentiated by performance level and/or how far the employee's current salary has penetrated their assigned salary range.

COMP.22 Upon final approval of employees' incentive payments, update the employee profile and record earned incentive payments to payroll.

COMP.24 Provide capability via input tables for clients to record long-term awards for each participant including identifying the applicable long-term incentive plan, grant/award date, number of shares/options awarded and stock price or stock option exercise price for the award.

COMP.25 Calculate the earned income of the participant upon vesting of a restricted stock (number of shares <times> stock price, as inputted by the client)

COMP.26 Calculate the payment owed by the employee upon exercise of a vested stock option (number of shares exercised <times> the exercise price per share)

COMP.27 Calculate the resulting earned income of the participant upon exercise of a vested stock option [number of shares exercised] <times> [stock price at exercise <minus> stock option exercise price].

COMP.28 Interface participants' earned income amounts to the payroll system for inclusion into W-2 earnings and collection/payment of income taxes.

COMP.29 Interface all stock option payments by participants to the accounting system (either electronically or via a system's generated report) for inclusion into retained earnings.

COMP.30 Interface the number of shares required from the vesting of a stock award or the exercise of a stock option to the company's stock transfer agent (either electronically or via a system's generated report).

COMP.31 Have the functionality to adjust all long-term plans for the effects of a stock split -- shares available for grant, shares/options awarded and stock option exercise prices.

Benefits Requirements

The benefits module has been defined to encompass the needs of the US market. The system shall allow the client to define new and unique benefit plans via a rules based mechanism. Each client shall define these rules. The system shall be of a self-service type that will allow resources and plan administrators to manage the benefits.

Statements of Requirement

The XYZ system shall:

BEN.2 Allow customers to relate a COBRA event indicator and COBRA months element with each Designate Event and Reason combination.

BEN.3 Provide for definition of *Consequent Actions Rules* function, which allows users to define actions that must take place in concert with or subsequent to the recording of an Event and Reason code.

BEN.4 Effect changes defined in Consequent Actions Rules when an Event and Reason code associated with a rule is recorded.

BEN.5 Provide for classifying each benefit plan in a *benefit group*, *benefit type*, and *benefit subtype*.

BEN.6 Enforce a participant's being active in no more than one plan in a benefit type on any date.

BEN.7 Relate different employee populations with different benefit programs via *Benefit Associations.*

BEN.8 Accommodate rules-based derivation of a person's Benefit Association.

BEN.9 Provide an *Open Enrollment Pattern* function by which users specify the Benefit Types for which participants may make elections during a specified span of time.

BEN.10 Provide an *Enrollment Action Permissions* function by which customers specify changes in benefit plan coverage that may be made as the result of a recorded Event and Reason or a change to the value of a data element.

BEN.11 Provide a *Benefit Plan Transition Rule* function that allows customers to define rules that limit enrollment in one plan based on the person's current plan participation and/or elapsed span of time in the current plan.

BEN.12 Provide a *Benefit Plan Dependency* function that enforces customer-defined requirements that a participant be enrolled in one type of benefit and/or a specified benefit plan before enrolling in another type of benefit and/or specified benefit plan.

BEN.13 Accommodate Benefit Plans that can be composed of multiple "chunks" or portions.

BEN.14 Provide for definition of cliff and step *Vesting Rules* based on age, service, or a combination of age and service.

BEN.15 Provide for calculation of vesting service on both anniversary or calendar year bases based on elapsed time and/or units of service such as hours.

BEN.16 Allow customers to associate a Vesting Rule to one or many benefit plans.

BEN.18 Allow customers to specify waiting periods and the date that serves as the basis for determining benefit plan eligibility.

BEN.19 Allow for optional restriction of eligibility based on *plan service areas*.

BEN.20 Present benefit election options for a participant consistent with participant eligibility rules, open enrollment patterns, enrollment action permissions rules, benefit plan transition rules, and benefit plan dependency rules.

BEN.21 Provide a facility by which Benefit Event codes are recorded when eligible individuals are enrolled in plans, either by themselves or administrative staff.

BEN.22 Maintain a *Benefit Plan Status Code* and related dates on each participant/plan record.

BEN.23 Provide a *Benefit Amount Calculation* function that allows users to specify rules for computing up four amounts per participant per plan, e.g. benefit salary, e.g. individual and family deductible and stop loss amounts, life insurance coverage amounts, savings plan contributions, etc.

BEN.24 Allow users to establish *Default Benefit Plan Values* for a number of items, including coverage code, benefit amounts 1 – 4, user defined rating factors, billing frequency.

BEN.25 Include an *Automatic Enrollment Rules* function by which users define to the system the plans in which eligible people should be enrolled automatically when hired.

BEN.26 Enroll a person in benefit plans according to open enrollment rules and default plan values when the person is hired.

BEN.27 Provide a facility to record data about *Designates,* i.e. people and things a benefit plan participant may name as a beneficiary or emergency contact or enroll as a dependent.

BEN.28 Provide a means of stipulating designates as emergency contacts.

BEN.55 Include for each pension plan a facility for including amounts captured by specified payroll earnings buckets as part of "pensionable" salary.

BEN.56 Periodically, as specified by the customer, compute and store pensionable earnings and vesting.

BEN.57 Compute estimated and actual pension benefits according to plan provisions and based on historical pensionable earnings, vesting, credited service, age, and other parameters.

BEN.58 Integrate compensation, benefits, payroll, and base data about an employee (resource) to eliminate redundant data capture via the transaction processor component.

BEN.59 Support independent Employment, Payroll, and Benefit statuses.

BEN.60 Support the use of Base Rate and related elements, including Base Rate Adjustments, in compensation and benefits modules.

BEN.61 Allow for recording Event and Reason codes with transactions reflected on employee/resource records, in Base HR, Benefits, Compensation, and Payroll modules.

BEN.62 Allow for linking a number of status codes with each Event and Reason code.

BEN.63 Relate a benefit status code, COBRA indicator, and COBRA months value to each Event that affects a person's employment status.

BEN.64 Maintain valid employment and benefit status codes for every historical, current, and future point in time for which data about a person are on record.

BEN.67 Make available to Compensation and Benefit modules personal demographic data that live on base records: Gender, Country, Postal Code, Smoker Status, Disability Status, and Student Status.

BEN.68 Provide links for transfer of data to and from: Payroll Earnings buckets, Payroll Deduction buckets, Payroll Tax buckets, General Ledger Accounts.

BEN.69 Provide a facility, shared by all modules, for capturing Vendor information.

BEN.70 Provide a Consequent Actions function, that allows customers to define actions that must happen in concert with or subsequent to an event's occurring and that ripples appropriate updates to records throughout the integrated system when an action is recorded.

Payroll & A/P Requirements

The purpose of the Payroll & Accounts Payable module is to manage the numerical compensation for resources. The system shall allow for online real time processing for payroll and accounts payable. The system shall manage, audit, and control all aspects of these business processes.

Statements of Requirement

The XYZ system shall:

PAY.1 Provide for the creation of off cycle paychecks as a corrective measure when errors occur in processing

PAY.2 Provide for the creation, controls and tracking of manual checks

PAY.3 Provide for check reversal capabilities through issuance of negative amount check processing

PAY.4 Provide for the creation of reprinted checks that have previously been printed and cancelled

PAY.5 Provide for processing of properly authenticated garnishment judgments

PAY.6 Provide for online check capabilities in order to process 'what if' pay scenarios for employees

PAY.7 Provide interfaces to tax organization that will provide all necessary tax tables, along with providing all tax reports and requirements by state

PAY.8 Provide ability to create pre-defined elements such as sick pay, workers compensation, and unemployment compensation

PAY.9 Provide links to benefits and compensation modules in order to associate awards, refunds, and other credits to an employee's payroll system

PAY.10 Provide the ability to define each earning as subject to various deductions such as pension, 401K, garnishments, etc

PAY.11 Provide for regulated payments through the payroll system to various investments such as 401K, Stock purchase plans, and savings bonds purchase

PAY.12 Provide for gross up processing which assigns the appropriate taxes to a specified lump sum payment

PAY.13 Provide for direct deposit within the payroll module

PAY.14 Provide for interfaces to banking institutions in order to process direct deposit payments

PAY.15 Provide for check and advice printing capabilities within the payroll module

PAY.16 Provide certain payroll tables with effective dated logic in order to process multiple payments and to track history

PAY.17 Provide for currency definition

PAY.18 Provide for interface to general ledger to include recording of salary expenses, salary payments, taxes, and deductions

PAY.19 Provide for interface to accounts payable in order to record recruiting expenses and payments of recruiters

Technical Architecture Requirements

Statements of Requirement

The XYZ system shall:

TECH.1 Provide support for communication over Internet using secured socket layers when certificates and encryption software are installed on the server in production.

TECH.2 Provide state-less communication between presentation and application layer. i.e. cookies or similar method should be used.

TECH.4 Integrate seamlessly with third party software that will be used to achieve automatic fail-over / recovery at each server used by system.

TECH.5 Provide interfaces to support the data transfers in standardized format (XML, EDI, etc. capabilities).

TECH.6 Provide XML interfaces as defined by the HRXML consortium. These interfaces will be used to convert existing data from client legacy data and to interface with client transactional systems.

TECH.7 Provide a user and module license management facility. The system shall provide the dynamic modifications to licensing parameters without any disruption to the service.

TECH.8 Allow a phase-in mechanism for future releases. These changes will be applied in a controlled manner with minimal system downtime.

TECH.9 Provide interfaces to standard reporting mechanisms such as industry available reporting tools.

TECH.10 Provide an internal auditing facility that shall be configurable by each clients requirement.

TECH.11 Ensure remote software management tools are compatible with the system. Remote management is required for both the server applications and the client configurations.

TECH.12 Provide an interface to automate the third party virus protection software to scan data brought to system by method other than browser interface prior to utilizing it.

TECH.13 Provide the facility for end-users and administrators to create XML specifications dynamically. All data documents should use XML as the definition format.

TECH.14 Provide utilities to interpret the site usage in simple terms. These statistics will range from system usage to trend analysis.

TECH.15 Provide utility for load balancing. The web/application server should be able to load balance the request for the consistent delivery of data to all applicable layer/nodes.

TECH.16 Provide support to industry standard browsers (popular versions of Microsoft and Netscape)

Functional Architecture Requirements

Statements of Requirement

The XYZ system shall:

FUNC.1 **Allow the end user and client to configure presentation interface parameters.** These parameters range from screen colors, date formats, and currency formats to language defaults.

FUNC.2 **Contain independent data models for each module.** Each application module shall be self-contained, with its own set of API's (application programming interfaces)

FUNC.3 Contain a data area to store all common data elements. The common application elements shall be stored in a common class structure. Provide a dynamic and consistent interface for all look up tables.

FUNC.4 **Contain security models that can be configured at four levels; system, application, database and user.** The system shall allow a rules based security model for each area that can be configured for the all elements in the system (files, application, modules, screens, fields, files etc). This model will define users, groups, context, roles and access.

FUNC.5 **Allow for menu items to be generated dynamically.** The source of the menu items will be a database table. Through relational rules that will be defined only the menu items that are accessible by the user shall be displayed. User shall be allowed to traverse the menu hierarchy laterally without re-traversing the menu hierarchy.

FUNC.6 Use industry standard help text tools (e.g. Robo Help) to create a comprehensive, interactive and context sensitive help text. Short help text shall be defined for all links, buttons, icons, and fields.

FUNC.7 **Provide an application audit facility that shall be configurable by the client.** The system shall maintain records for all contact and interaction between employees and the system. Each client will define the rules.

FUNC.8 **Provide and exception handling routine that shall be seamlessly handle and report on all exceptions.** The client will define these rules for reporting and severity. The reporting mechanisms will range from hard copy output to email and pager notification.

FUNC.9 Incorporate an industry standard workflow tool. This tool will provide a mechanism to manage the business process, monitor and control events. Each client will define the rules.

FUNC.10 **Provide the ability to *logically* lock particular data records or elements so that users may "own" such data across multiple data-security sessions.** This is necessitated by the extended periods of time (e.g. days, weeks, months) over which many business events will be conducted through their workflow paths.

FUNC.11 **Provide the ability to allow users to link to other Internet sites through links provided on XYZ pages.** The system must assure that the use of such links are made and logged through the XYZ system so that metrics can be captured and analyzed on their usage.

FUNC.12 **Control measurement data from throughout the system and present dashboard metrics to client management.** The client shall control the selection and prioritization of metrics maintained and presented on dashboards, and the desired trigger levels for possible alerts.

FUNC.13 **Monitor and control all name and contact information maintained throughout the system to reduce redundancy and increase accuracy.** Typical processing shall include address cleanup, duplicate address merge, household processing, and e-mail re-validation. Records will never be altered automatically; rather, suspected data cleansing opportunities shall be queued for action in the workflow manager.

FUNC.14 **Monitor data and processing within the system and generate various levels of alerts to appropriate XYZ and/or client contact staff when predefined conditions arise.** The client shall have control over what conditions are monitored, and how alerts are communicated and handled. Alerts will typically be added to the recipients work queue in the Workflow Manager, but more severe alerts can be generated via e-mail or voicemail.

FUNC.15 **Provide ability to integrate with industry standard business intelligence system with OLAP/MOLAP functionality.** This system shall be used to develop all standard and ad-hoc reports. This system shall also be used to analyze data, share information and make better business decisions.

FUNC.16 **Support data warehousing and analysis functionality by providing an ability to export data to third-party data analysis, data mart, and data warehouse product suites.** This requirement also includes an ability to provide integrated support to one or more such tools within the XYZ system and operating environment.

FUNC.18 Allow individual users to personalize their interface through specifying options-in-effect that will determine the content and style of information and services presented.

FUNC.19 Consist of a highly normalized transaction processor and a decision support component that includes a dimensional data model.

FUNC.20 Provide for translation among relative temporal frequencies (e.g. hourly, weekly, monthly, quarterly, annually).

FUNC.21 Accommodate multiple transactions per employee on a single day.

FUNC.22 Display on-line help that incorporates (in help text) column descriptions and values that live in parameter/rules tables.

FUNC.23 Provide a link to live help -- an instant messaging, voice, and e-mail connection to service representatives or subject matter experts.

FUNC.24 Provide a spreadsheet interface for populating reference/validation/ parameter tables and for managing data entry from salary planning, stock option planning, and other worksheets.

FUNC.25 Allow "cloning" of rows in tables, i.e. a user can display a table entry, change some values, and save the result as a new table entry (row).

FUNC.26 Feature "live action." So, when items are being modeled results display immediately.

FUNC.27 Provide a facility to specify dates relatively in order to calculate time spans. E.g. <bcq = go back to the beginning of calendar quarter.

FUNC.28 Provide a “wildcard” value that enables joins to all values.

FUNC.29 Provide a facility by which for each type of transaction customers can define edit patterns, by which they indicate required fields, elements for which values much change, dates to be derived based upon the transaction’s effective date, etc.

Data Architecture Requirements

Statements of Requirement

The XYZ system shall:

DATA.1 Implement data structures normalized to at least third normal form (3NF), particularly with respect to the use of non-intelligent key structures.

DATA.2 Maintain client data keys and tokens (e.g. Employee Numbers) as non-key data fields.

DATA.3 Manage all human resources; either independently as people, or collectively as organizations supplying such people. These people and organizations have a data existence independent of their role as resources, and so must be provided an independently normalized set of data structures.

DATA.4 Isolate information about a Person or an Organization functionally — using data normalization — from the use of such information in the system.

DATA.5 Document relationships between Persons and Organization. Such relationships shall include various roles; including Employee of, and Subscriber of. Note that the Employee of relationship is specifically for noted employment relationships *outside* the scope of the XYZ system (e.g. employees of contracting organizations retained as resources through that contracting organization).

DATA.6 Support multiple names of Persons in support of common naming conventions; including Legal Name (e.g. Richard Earl Biehl, Jr.), Common Name (e.g. Richard Biehl), Professional Name (e.g. Richard E. Biehl, CSQA), and others as required (e.g. Salutation, Correspondence). Such names, if not explicitly provided to the system, shall be defaulted using a combination of the Prefix, First, Middle, Last, Suffix fields already defined for Persons.

DATA.7 Support data for Organizations to be processed through Accounts Payable processing. The concept of Vendor shall be either synonymous with, or subsidiary to, the definition of Organizations.

DATA.8 Define Resources generically, rather than dealing with simply Employees. A Resource may be an Employee, Contractor, Volunteer, or Team made up of these things and a Resource can be an Employee, Contractor, and Volunteer at the same time.

DATA.9 Define Organizations as external to the client and made up of collections of people. They are considered to be are aggregations of skill; whether or not the distinct people are identified.

DATA.10 Define Teams as internal to client; made up of collections of Resources, whether other Teams or individual Employees, Contractors, or Volunteers.

DATA.11 Define Teams as aggregations of skill also; with some skills attributable to the team as a whole through synergy, not just to the individuals within the teams.

DATA.12 Define Assignments as to jobs/positions; but also more specifically to projects, committees, and task forces that have been pre-established in the organization design.

DATA.13 Maintain data tracking Resources in multiple system hierarchies. Every Resource defined to the system shall be able to be rolled up into multiple hierarchies that are independent of each other, including reporting, accounting, functional, geographic, and other hierarchies.

DATA.14 Associate language identifiers with all non-proper noun texts.

DATA.15 Provide multiple language interfaces based on preferred languages of individual users.

DATA.16 Support phonetic search and "sounds-like" data for names and other fields requiring search and pronunciation support.

DATA.17 Provide timestamps and context that are local to each user and business transaction.

DATA.18 Provide multiple time-sensitive currencies and exchange calculations for financial amounts.

DATA.19 Isolate the storage of context-independent information about people and organizations from the context-dependent data about them in the system.

DATA.20 Record contact information for People and Organizations in a generic fashion independent of the use of that data in the various business contexts supported by the system.

DATA.21 Provide an unlimited number of Contact Points (e.g. Address, Telephone, and E-mail), each clearly identified as to the timeframes and types of contacts appropriate to the contact point, for each person or organization.

DATA.22 Support addresses and telephone numbers in various common international formats.

DATA.23 Normalize contact points so that they are not stored multiple times.

Functional Requirements

Hiring Functions

The system shall:

1. Hiring Module
   - 1.1. Request for resource.
   - 1.2. Posting.
   - 1.3. Free Agent / Independent Contractor.
   - 1.4. Consulting.
   - 1.5. Integrator.
   - 1.6. New Hire.
   - 1.7. Re-hire.
   - 1.8. Employee referral.
   - 1.9. Volunteer.
   - 1.10. Web New Hire.
   - 1.11. Internal Transfer.
   - 1.12. Campus recruiting.
   - 1.13. Rejected resumes.
   - 1.14. Job fair and open house.
   - 1.15. Vendor
     - 1.15.1. Profile.
     - 1.15.2. Setup.
     - 1.15.3. History.
     - 1.15.4. Payment status.
     - 1.15.5. Skills master
     - 1.15.6. Job description.
     - 1.15.7. RFR
     - 1.15.8. Assignment.
     - 1.15.9. Response.
     - 1.15.10. Candidate processing
     - 1.15.11. Evaluating contractors.
     - 1.15.12. Vendor process?
   - 1.16. Pre-employment tests and checks.

Employment Functions

The system shall:

2. Employment Module
   - 2.1. Assignment.
     - 2.1.1. Job assignment.
     - 2.1.2. Project Assignment.
   - 2.2. Goal alignment.
   - 2.3. Scheduling.
     - 2.3.1. Shift Assignment.
   - 2.4. Leave processing and encashment.

2.5. Promotion.
2.6. Transfers and relocation.
2.7. Termination.
2.7.1. Resignation.
2.7.2. Retirement.
2.7.3. Dismissal for cause.
2.7.4. Death.
2.7.5. Reduction in force.
2.8. Post-termination.

Compensation Functions

The system shall:

3. Compensation Module
3.1. Job descriptions.
3.2. Job evaluation.
3.3. Pay structures.
3.4. Salary structure.
3.5. Pay increases.
3.6. Analyzing data.
3.7. Pay spreadsheet template.

Benefits Functions

The system shall:

4. Benefits Module
4.1. Type definition.
4.2. Plan definition.
4.3. Postal code service area definition.
4.4. Definition of benefit association.
4.5. Definition of eligibility rules.
4.6. Defining coverage codes.
4.7. Creating designate records.
4.8. Establishing eligibility for dependents.
4.9. Definition of automatic enrollment rules.

Payroll & A/P Functions

The system shall:

5. Payroll & Accounts Payable Module
5.1. Off-cycle check processing.
5.2. Manual checks.
5.3. Check reversal and reprint.
5.4. On-line check.
5.5. Garnishments.
5.6. Tax reporting, interfaces, and reciprocity.
5.7. Elements

5.8. Investments
5.9. Gross-ups
5.10. Direct Deposit
5.11. Check and Advice Printing
5.12. Effective Dated Tables
5.13. Currency
5.14. Integration with General Ledger
  5.14.1. Salary expenses
  5.14.2. Salary payments
  5.14.3. Taxes
  5.14.4. Deductions

BSR Report – Customer Management

The sample provided below is excerpted from an actual Business System Requirements Report created using the process taught in this course. It is intended to provide an example of how the overall document can be structured, and of the tone and type of information that is provided in each requirement statement. Because this sample is an extract of a much larger document, the numbering scheme will not flow as it would in a complete document.

Note: This is a document version as it might appear **relatively late** in the requirements process. The User Requirement statements are fairly solid and well edited, but the Functional Requirements still need many of the details filled in and some general cleanup.

System Overview

Stakeholder Interactions

At the highest level, the Customer Information Management System interacts with five major stakeholder groups. Each major interaction is described below.

Customers

The primary interaction the system needs to support is with customers, particularly subscribers. Major interactions include:

- Processing subscription requests and payments, including issuing of credentials,
- Collection of demographic and customer preference information,
- Requesting specific products and services, including payment and fulfillment,
- Handling customer compliments and complaints,
- Reconciliation of "no good" payments, both check and credit/debit card,
- Issuing of receipts for any payments, and
- Handling service requests, bills, and refunds.

Finance/Accounting

The system needs to interface with accounting systems in order to provide financial controls in support of all system functions. These include:

- Daily balancing of cash, credit, and receipts for each sales agent,
- Sales and commission accounting for all elements of the organization from agent to company,
- Earned income and expense accounting to track subscription value over the life of each subscription,
- Recovery of income at risk because of bad checks or inactive/bad credit/debit account transactions,
- Reports to corporate headquarters, and
- Miscellaneous management reports.

Business System Perspectives

Participants in the Requirements Definition process identified nine different perspectives from which the system can be viewed while thinking about requirements and the implementation that will follow. Each of these perspectives, described below, offers a framework for thinking about the entire system and its major components. All are correct, none are complete.

The relative size and interaction of the five major functions provides a general mechanism for discussing how each functional aspect of the system impacts each and every process or transaction in the system.

Each viewpoint has been depicted by a Venn Diagram. Each provides a graphic image of the entire system as seen from that viewpoint. The size of each functional area is represented by the relative size of the circles in each figure. The level of interaction among the functions is depicted by the size of overlap among the circles.

The different perspectives described below help explain why different observers will notice and prioritize different features of the system described in this requirements report. Some perspectives will look at certain functions and features to the exclusion of all others; while some might offer a fairly balanced view.

Balanced Data-Integrated View

The Balanced Data-Integrated View (Figure 1) looks at the system as a set of major functions all integrated by their interaction with the data management function and with each other:

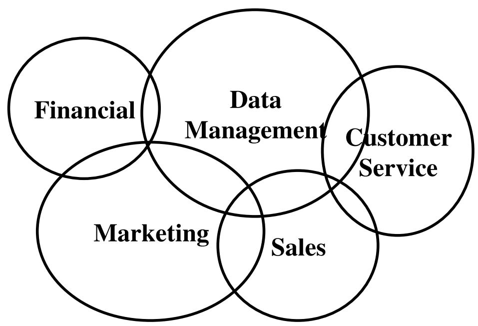

Figure 1 - Balanced Data-Integrated View

This perspective will tend to focus on operational processes and transactions as relatively isolated from each other by functional area, with data storage and customer profiling receiving considerable attention. Readers adopting this view need to take care not to omit the various cross-function processing and control requirements from their thinking as they review these requirements.

Customer-Centric View

The Customer-Centric View (Figure 2) looks at the system as being dominated by the major customer-interacting functions: sales and customer service; with other functions taking on less significant support or back-room roles:

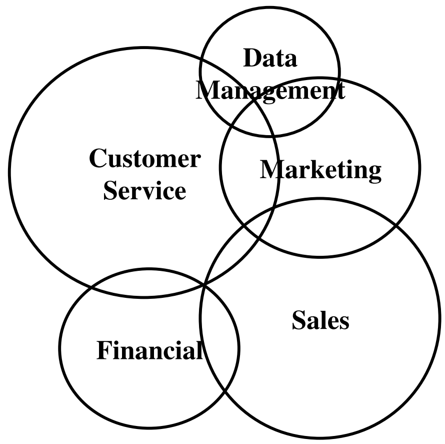

Figure 2 - Customer-Centric View

This perspective will tend to focus on real-time customer interactions. Readers adopting this view need to take care not to omit the financial control that needs to be exhibited by each customer interaction or the need to reflect marketing impact through identifying the source of the customer interaction and collection of further customer profile data.

User Requirements

Introduction

This chapter defines the user requirements for ….

Managerial Requirements

Management includes all of the strategic and tactical planning and controlling activities necessary to establish and run XYZ as an autonomous entity.

Managerial requirements include setting the direction in which this system will take the Company (i.e., vision, mission), organizing and empowering employees to use the system (i.e., policies, competencies, training), and allocating resources toward making implementation of the requirements possible (i.e., budget, planning, technology).

Statements of Requirement

The systems, or management in support of the system, shall:

MGT.1 **Provide an increased set of competencies across all business functions**. The system, by nature of its enhanced usability, provides many more opportunities for each area (i.e., marketing, sales, customer service) to create a better product or provide a better service. Employees will be able to be more efficient and accurate.

MGT.2 **Provide for training of all staff to ensure an understanding of the value, collection, maintenance and use of data.** As data gathering and use in business is a key requirement, every employee needs to understand and execute all data-gathering functions for their areas to further company goals. This will be emphasized with employees beginning with the start of employment.

MGT.3 **Provide a common vocabulary for all business terms and a repository for formulas.** Management shall approve the creation of a vocabulary of common and industry specific terms for dissemination and use throughout the organization to improve communication and increase understanding.

MGT.5 **Provide support for incentives to better balance subscriber retention against acquisition priorities.** Management shall define and develop incentives for personnel who retain an existing subscriber, allowing a balance of time and attention spent retaining customers and acquiring new ones. Management shall also consider incentives to reward subscriber loyalty, thereby encouraging customers to keep their business with XYZ.

MGT.6 **Provide support for management coordination between and among departments at all locations.** Management will encourage company-wide business plans that optimize use of resources and provide a consistent level of service across the branches.

MGT.7 **Provide standardized selling points for every product and service.** The system shall support scripts for cross selling or up selling. Personnel need to be trained in the delivery of product points, so they can give consistent product information and close sales.

MGT.8 **Provide improved call-handling system for routing incoming calls and controlling messages.** The system shall include features to assist personnel in call centers and branches when handling incoming calls.

MGT.9 **Provide and interface to a variety of secure access channels for customers to access products and services (i.e., telephone, fax, e-mail, web site, visit, mail, and independent agents**). The system shall offer customers a maximum number of ways (i.e., phone, fax, e-mail, web site, visit, mail and through independent agents) to receive services from the Company.

MGT.10 **Provide information for increased empowerment and incentives with staff to recover customers and sales ("saves").** Employees need to be motivated with incentives, trained, and empowered to use a variety of methods to keep a customer satisfied. The system needs to provide the flexibility needed to exercise such empowerment.

MGT.11 **Provide information and processes for clear and consistent customer problem resolution policies.** Management will encourage the development of customer resolution processes. The system shall provide the data needed to assist in resolving customer problems at the point of contact.

MGT.12 **Provide information and appropriate authority to effectively interact with a customer at point of contact.** Front line staff needs to be authorized and trained in addressing customer needs, and services should be a seamless, prompt, and efficient experience for the customer.

MGT.13 **Provide for alternative processing in the event of physical, technical, or organizational disaster**. The system needs to include back-up processing procedures in the event that facilities, technologies or people become unavailable.

Organizational Requirements

Organization structure includes both the macro view of how XYZ fits into the larger world, the high level structure of XYZ, and the micro view of how XYZ is internally organized to deliver value to its customers and employees.

Organizational requirements include how the administrative structure is defined for the Company and its branches, and how sales and support staff are assigned and aligned across that structure. A key organizational requirement is to maintain the flexibility of the structure in order to continuously support both short and long term changes as needs and relationships vary.

Statements of Requirement

CRS shall, or management in support of CRS, shall**:**

ORG.2 **Establish the capability to provide services to other companies.** The system needs to be able to support business activity for other companies.

ORG.4 **Provide the capability to divest portions of territories and/or services.** The system needs to be able to support processes, procedures and tools for spinning off portions of territory or services.

ORG.5 **Provide the capability to outsource company services.** The system needs to support processes, procedures and tools necessary to outsource system functionality when deemed appropriate.

ORG.6 **Provide the ability to open, close, or realign the hierarchy of the organization structure.** The system needs to contain a set of procedures to allow authorized individuals to perform maintenance on the organization structure, including but not limited to divisions, regions, cost centers, and branches.

ORG.7 **Provide the ability to support turnover and reassignment of sales personnel.** The system needs to track sales staff and position independently.

ORG.8 **Provide for appropriate cross training of new and existing personnel.** Staff needs to be able to function across business lines and departments in order to consistently provide the appropriate level of service under variable business conditions or situations.

ORG.9 **Provide the ability to balance and maximize workflow and resources in and across branch offices.** The system shall include a procedure and/or method for checking resources and workflow at any time or location in order to provide the capability to optimally balance branch activity.

ORG.10 **Provide the ability to allocate resources to support inherent seasonality of product lines**. The system will, during peak demand periods, handle reallocation of resources to meet needs.

Marketing Requirements

Marketing involves working through database marketing and consumer research to develop knowledge of existing and potential customers to enable acquisition and retention of desirable customers and to build relationships with customers across all business lines in a way that differentiates XYZ from its competition.

Marketing requirements include building a robust data repository on customers and products in order to increase XYZ's ability to reach its customers with customized and personalized materials. A key requirement involves recognizing that increased availability of information will expand the company's marketing efforts beyond those practiced today.

Statements of Requirement

The Customer Relationship System shall:

MKT.1 **Provide the ability to store and retrieve information on all activities customers participate in.** The system needs to provide a profile of existing customers in order to support precise customer targeting.

MKT.2 **Provide ability to collect, access and use subscriber/customer transaction history data.** The system needs to have the functionality to accept process transaction feeds from other business lines, attach the data to specific subscribers, and present it in detail or summary format.

MKT.3 **Provide the ability to track response to consumer promotions (i.e., what promo worked, what didn’t).** The system will provide reports detailing customers’ response to marketing campaigns to assist in determining the effectiveness of campaigns.

MKT.6 **Provide the ability to pull and track research and test program samples.** The system will enable Marketing personnel to pull random samples of customers meeting specific selection criteria for use in research project (e.g., telephone survey of lapsed subscribers) or test groups. System users need to be able to easily select segments, flag them and report results.

MKT.8 **Provide the ability to generate personalized correspondence automatically for new subscribers or customers.** The system needs to automatically produce an informally structured letter with a personalized salutation to welcome new customers and promote customer intimacy.

MKT.9 **Provide for expanded, improved and customized marketing during renewal billing cycles.** The system needs to be equipped with a series of prompts (i.e., selective inserts, variable messages and reports on renewal statements as a retention effort) that trigger the imprinting of specifically targeted messages or brief reports to educate and inform the customer regarding other product lines and services.

MKT.11 **Provide the ability to define specific customer segments.** The system needs to be able to segment customers using a variety of data elements, in support of target marketing.

MKT.12 **Provide strict policies and controls to assure privacy of all customer data.** Management policy and system restrictions need to combine to ensure customer data security. The system will include a system user security filter mechanism and processes for authorization.

MKT.13 **Provide extensive and flexible reporting and query capability to support marketing analysis.** The system needs to provide an ad hoc report feature supporting Marketing's, or any department's, analysis of data for its own purposes. Results need to include lists, charts, graphs and extract files.

MKT.14 **Provide system functions and procedures to assure that "non-solicitation" requests are honored.** The system needs to include appropriate controls to prevent or allow customer data usage based on a variety of circumstances (e.g., subscribers vs. prospects). These controls need to take into account both customer requests and partner agreements. Audit trails and seed names need to be included.

MKT.15 **Provide a history of promotional activity for each customer.** The system needs to have the ability to analyze promotional history so that marketing personnel can be aware of potential saturation levels, and thereby control overly repetitive solicitations.

Sales Requirements

Sales involves exploring, accepting, clarifying, expanding, and then fulfilling customer requests for products and services, providing maximum value to customers while achieving the objectives established within the company.

Sales requirements include providing the data and support needed to connect customers to products through a variety of customer-selected channels, and maintaining data profiles that allow for minimizing the data-collecting burden placed on customers and staff during sales interactions. Such increased channels and data will allow sales management to be able to monitor and tune both product movement and branch office capacity.

Statements of Requirement

The Customer Relationship System shall:

SAL.1 **Provide the ability to track customer purchases by destination/age, subscriber/non-subscriber, and other factors.** The system needs to have the ability to capture and analyze demographic and other statistical data for each product purchased.

SAL.2 **Provide the ability for a single system user to access, change and sell multiple product lines.** The system needs to allow the system user access to all product lines in order to cross sell or up sell the customer.

SAL.4 **Provide variable length subscriptions and discounts.** The system needs to allow non-standard subscription periods (3 months, 6 months) and accompanying discounts (i.e., a discount for purchasing a 3-year subscription).

SAL.5 **Provide multiple types of subscriptions.** The system will allow subscription types to be defined and added (e.g., lifetime).

SAL.6 **Provide mechanisms for acquisition and changing of subscriptions.** The system needs to allow full point of sale functionality for selling and maintaining subscription features and benefits.

SAL.8 **Provide the ability to prompt system users to recommend appropriate products and services (i.e., cross sell, up sell).** The system needs to provide instant access to product and customer data so the system user can suggest other products while communicating with the customer.

SAL.9 **Provide the ability to track information on temporary subscriptions.** The system needs to have the ability to track usage of temporary subscriptions to determine what permanent subscriptions resulted, and to quantify costs to bill for services used if temporary subscription does not become permanent.

SAL.10 **Provide the ability to handle free or discounted renewals (i.e., coupons).** The system needs to have the flexibility to support these incentives and incorporate them into the billing capabilities.

SAL.12 **Provide the ability to obtain workflow history for all sales-related customer data.** The system needs to provide the content and author of all subscription changes in order to track service counselors' activities in sales, and other system user-related activity against customer records.

SAL.15 **Provide full customer profile data in support of sales transactions.** The system needs to capture and provide customer profile data to a system user while he/she is engaged with the customer, so that the system user may suggest or offer other products.

SAL.16 **Provide the ability to route customers to available agents.** The system needs to have the ability to support a seamless call routing system, so that agents who are free immediately get calls routed to them and customers receive service as soon as possible.

SAL.18 **Provide the ability to make management decisions by using standardized statistics in support of sales**. The system needs to have the ability to analyze and create reports on books of business by agent, demographics, acquisition method, and other relevant factors in a timely manner.

SAL.19 **Provide dynamic sales data to management and staff.** The system needs to have the ability to supply daily statistical sales information for analysis to precisely target production goals and provide a basis for agent compensation.

SAL.20 **Provide the ability to track customer requests until fulfilled.** The system needs to provide fields for notes regarding what was requested, what has been done, who worked with the customer, and finally the date, time and means of resolution.

SAL.21 **Provide the ability to verify credit or debit card validity prior to posting.** The system needs to have the ability to interface with online credit/debit verification services to allow for validation of funds at the time of the transaction.

SAL.22 **Provide the ability to identify recurrent customer problems.** The system needs to have the ability to create trend analysis reports on complaints or problems, revealing recurring situations and "problem customers" that might require attention or handling.

SAL.23 **Provide incentives for non-sales personnel who do cross selling.** The system needs to be able to recognize and track sales performed by non-sales personnel and to include such sales in commission and compensation processing.

SAL.25 **Provide the ability to identify unpaid subscribers to be able to act on them.** The system needs to track payment status and properly take collection action based on an appropriate chain of payment responsibility (e.g., group, gift, donor recipient).

Customer Service Requirements

Customer Service involves monitoring and supporting the comany's relationship with each customer to provide the highest levels of customer satisfaction and maximize customer retention and loyalty.

Customer service requirements include improved understanding of each customer's relationship with the company, good (i.e., revenue-generating products or services) or bad (i.e., heavy user of expensive services). Such increased knowledge can support more proactive and personalized customer communications and resolution of complaints; thus increasing the data about customers that can be collected and added to profiles used through all functions.

Statements of Requirement

The Customer Relationship System shall:

SVC.1 **Provide personalized customer correspondence as part of the receipting process (i.e., thank you letters).** The system needs to prompt for, and produce personalized cover letters to accompany customer receipt for subscription or services purchased.

SVC.2 **Provide the ability to sort compliments and complaints by type or categories and identify trends.** The system needs to be able to categorize compliment/complaint data and create reports that assist management in root cause analysis.

SVC.3 **Provide the ability to establish and support group subscriptions.** The system needs to have the ability to create, rate, bill, and credential group subscriptions.

SVC.4 **Provide automatic personalized welcome letters, new subscriber information and temporary credentials for subscribers added (i.e., transfer subscribers**). The system needs to be equipped with prompts to generate a welcome letter and include its accompanying information and credentials for any new subscriber entered, so that a positive first impression is created by the company.

SVC.10 **Provide the ability to update customer records.** The system needs to allow front line personnel authorization and full functionality to handle changes in customer records promptly and efficiently (e.g., address changes).

SVC.11 **Provide the ability to handle subscription transfers and send and receive full usage data**. The system needs to provide functionality for both inbound and outbound transfers, tracking each transfer until data exchange has been completed with the sending or receiving business.

SVC.13 **Provide the ability to record and service customer's temporary or alternate addresses**. The system shall support processing against such address flexibility without requiring any additional changes or resetting of options for products and services continuing to use the primary address.

SVC.14 **Provide the ability to process post office returns in a timely manner.** The system needs to have the ability to process post office returns, capture corrected address data, and inform all departments originating mailings to that household.

SVC.17 **Provide the ability to survey customer satisfaction proactively.** The system needs to have the ability to create and send standardized customer satisfaction surveys, input survey response data, and report information rapidly for use in areas such as marketing and sales.

SVC.21 **Provide the ability to issue service refunds to subscribers.** The system needs to provide for all processing of customer refunds, including full/part payments and denials.

Financial Requirements

Finance involves providing the company with a strong and stable system of financial controls while managing the revenue and expense stream created by customer sales and interactions.

Financial requirements include improving inter-function and inter-system communication, so that the effort required to carry out day-to-day balancing and control activities is reduced, allowing for investment in more proactive financial management, and reduced customer impact during transactions.

Statements of Requirement

The Customer Relationship System shall:

FIN.1 **Provide a flexible billing system which includes the ability to integrate billing processes.** The system needs to provide flexibility in the timing, methods and terms of billing, integrating billing data from all business areas into a unified bill for every customer.

FIN.2 **Provide the ability to take a customer's payment at point of contact (including Internet or by phone) and either print a receipt or provide electronic verification.** The system needs to be able to accept and fully process payments (including renewals) from all points of contact for the convenience of the customer.

FIN.3 **Provide the ability to process transactions via credit or debit card, EFT.** The system needs to be able to interface with online verification services to check customer account number and credit/ debit card data in order to verify availability of funds and status of relevant accounts and accommodate electronic funds transfer.

FIN.4 **Provide information to internal system users regarding entry and status of any NG transactions (i.e., personal checks to branches, credit/debit cards).** The system needs to integrate data of NG transactions across business lines so that all system users can be made aware of the customer status during processing of other customer transactions.

FIN.6 **Provide the ability to handle partial pay customers by adjusting product terms or benefits based on money received.** The system needs to be able to locate partial payment customer files and adjust subscription benefits or length to correspond with the payment made.

FIN.7 **Provide the ability to handle automatic billing.** The system needs to be able to sort subscription records monthly to retrieve those "set-up" for autobilling, produce bills and create a report of accounts autobilled by month.

FIN.9 **Provide the ability to track and monitor NG transactions through to resolution and recovery.** The system needs to document past customer transactions allowing a system user to review past transaction data (e.g., for 18 months) for bad checks and notes regarding efforts to recover funds or denial of service to the offending customer.

FIN.10 **Provide the ability to balance every point of sale transaction (in house and branch office closeout at end of the day).** The system needs to be able to electronically validate branch deposits from banks so that Internal Cashier has all information necessary to balance and close out at the end of each business day.

FIN.11 **Provide the ability to balance payment and collections to transactions.** The system needs to contain standards for the recording of POS transactions which ensure that data and amounts are input correctly, reducing the possibility of human error.

FIN.14 **Provide ability to apply correct rates and source codes to subscribers.** The system needs to have the ability to use a permanent address change (not involving an outbound transfer) to automatically calculate the correct rating code and subscription packet code.

FIN.15 **Provide the ability to remove (back out) a subscriber from earnings process when subscription is cancelled or refunded.** The system needs to remove cancelled subscriptions from all earnings calculations, and properly account for and handle any unearned dues held by the company.

FIN. 16 **Provide for profitability calculation by including costs in all processes.** The system needs to have the ability to calculate costs per subscriber for marketing and other expenditures, factor them into an earnings statement to provide a picture of profitability and where correctable losses are happening.

FIN.19 **Provide definitions of terms on reports that have the same meaning throughout the company.** The system needs to have a dictionary of terms to be used in creating reports, and for system users to have as a reference.

FIN. 20 **Provide the ability to track and control the chargeback of internal service usage.** This includes any promotional or goodwill use of products and services within and across departments in the company.

Regulatory Requirements

XYZ operates in much of the United States in a variety of industry categories. Various services supported by the Customer Information Management System (CRS) needs to conform to a variety of federal, state, and local regulations and guidelines. This section describes requirements for the more significant regulations that affect CRS implementation.

Statements of Requirement

The XYZ Customer Information Management System shall:

REG.1 **Adhere to all Internal Revenue Service rules regarding the receipt and handling of large cash transactions.** All sales transactions involving amounts over certain thresholds of cash and negotiable instruments (currently $3,000 in 1998) require the selling entity to collect and report additional customer identifying information. The system needs to include the collection of such information during all cashiering activities that could reasonably be expected to handle transactions valued over the regulatory threshold.

REG.2 **Collect and file all applicable state and local sales and use taxes on all transactions.** Each state, county, and municipality in which XYZ operates has specific rules and regulations regarding the charging of such taxes and their filing and payment. The system needs to support geographically appropriate collection, filing, and payment of such taxes in compliance with these regulations.

REG.3 **Adhere to all applicable state and local sales solicitation and privacy regulations.** In addition to customer solicitation preferences obtained through the Direct Marketing Association (DMA), individual states carry their own restrictions and regulations to which CRS needs to comply. The system needs to implement appropriate controls, by legislative jurisdiction, to ensure compliance with these restrictions and regulations.

REG.4 **Adhere to all Generally Accepted Accounting Principles (GAAP).** The level of financial controls supported by CRS needs to be consistent with its use as a primary source of sales revenue, and as a significant source of disbursements. The system needs to be appropriately controlled and reconciled to other XYZ accounting and ledger controls, to ensure adherence to all GAAP rules and objectives.

REG.5 **Conform to all United States Postal Service (USPS) regulations.** These include mailing address format considerations for domestic and international mail, and list sort and control guidelines for volume mailing. The system needs to support all of the variations of address information and sorting needed to conform to these USPS regulations.

Data Management Requirements

Data management involves providing the data and system infrastructure and services necessary to ….

Statements of Requirement

The Customer Relationship System shall:

DAT.1 **Provide the ability to perform multiple functions at the same time.** The system needs to support GUI-like functionality so that system users can switch between functions easily allowing them to service all of the customer's needs.

DAT.2 **Provide full-function 24-hour access, 7 days a week (including from remote locations**). All system functions needs to be accessible at any time of day so that, for example, system users working late or at home can input data.

DAT.3 **Provide seamless integration to other company systems where possible.** The system needs to provide interfaces and protocols so that system users can move between systems as effortlessly and transparently as possible.

DAT.4 **Provide the ability to always know who is working or has worked with a subscriber.** The system needs to provide history in which all activity regarding a particular subscriber is recorded, thereby providing information to resolve complaints faster and/or being able to correct any mishandling by an employee.

DAT.6 **Provide the ability to synchronize addresses and phone numbers.** The system needs to support the tracking of any address changes, and be able to accept and send information about such changes from and to other systems.

DAT.7 **Provide the ability to route customer information to other appropriate departments for possible leads or other actions.** The system needs to have the ability to capture customer information given in one department and send it to another department's system, eliminating the need to re-key the same data in multiple systems.

DAT.8 **Provide flexible reporting capabilities including the ability to create and review drill-down features in the data (i.e., sales agent, cost center number, region, division).** The system needs to allow system users to create their own reports and retrieve data rapidly in the format, and to the level of detail, they need to assist their business functions.

DAT.11 **Provide the ability to include and highlight messages on a customer profile.** The system needs to provide areas where system users can add variable-length messages and activate a prompt to alert other system users or departments in case further action needs to be taken regarding an issue.

DAT.13 **Provide support for computer telephony, including Interactive Voice Response (IVR).** The system needs to include interactive features which help reduce the time it takes to route and handle customer calls.

DAT.14 **Provide the ability to route Internet, telephone, e-mail, and fax inquiries directly to the closest available branch and/or agent**. The system needs to be able to route incoming communications based on a current capacity and workload, while also considering the communicator's customer service requirement.

DAT.17 **Provide application and functional security for authorized system user access and activity.** The system needs to be equipped with any security measures deemed appropriate to protect the confidentiality of data and access to secure functions.

DAT.18 **Provide the ability to audit credit/debit card authorizations.** The system needs to support full audit controls (e.g., databased imaging signature for comparison with signature written or mother's maiden name for telephone verification) on credit/debit card transactions and make this control data available during customer complaint handling or bill collection.

DAT.19 **Provide automated processing of responses to promotional efforts (e.g., bar-coded leads).** The system needs to maximize the support of automatic capture of promotional responses.

DAT.20 **Automatically merge customers together that are actually the same customers.** The system needs to be able to merge two or more customer records that have been identified by a system user as representing the same customer. All related customer profile, transaction and history data should be integrated into the merged customer record.

Functional Requirements

Introduction

This chapter defines the functional requirements for ….

1. Management Requirements

Management requirements include all of the planning, policy, and procedural factors that are needed in order to meet known business requirements. These requirements largely define changes to the management environment in which the system will be developed….

1.1 Policy Establishment

The implementation of system should be supported by management established policies in the following areas.

1.1.1 Training

1.1.1.1 **Orientation Program.** Every customer service/sales employee should be required to participate in CRS orientation training.

1.1.1.2 **Ongoing Training.** Every customer service/sales employee should participate in ongoing CRS proficiency training.

1.1.1.3 **Organization Commitment to Training.** The XYZ organization should be fully committed to the concept that every system user receives the training necessary to optimize the use of CRS in providing legendary service.

1.1.1.4 **Provide Cross selling Training.** Customer service/sales employees should be trained to sell across business lines.

1.1.1.5 **Provide Up selling Training.** Customer service/sales employees should be trained to sell additional products.

1.1.2 Cross selling

1.1.2.1 **Provide Incentive to Cross sell.** Customer service/sales employees should be provided either financial or other types of incentives to encourage sales across business lines.

1.1.2.2 **Commitment to Eliminate "Not My Job" Mentality.** All employees should be encouraged to take ownership of providing customer service across business lines.

1.1.2.3 **Up selling.** All employees should have access to financial and other incentives reinforcing the sale of additional products.

1.1.3 Empowerment

1.1.3.1 **Authority to Resolve Complaints.** Employees should be empowered to solve customer related problems at the point of contact.

1.1.3.2 **Deactivation of Subscription.** A policy needs to be established to determine the appropriate action when a subscription is scheduled to be deactivated as a result of:

- Insufficient funds
- Other

1.1.5 Service Delivery

1.1.5.1 **Resource Allocation to Meet Customer Demand.** Servicing customer demands across business lines needs to be supported by continuous reallocation of resources.

1.1.5.2 **Establish Service Levels.** Acceptable customer service levels including wait times and quality of service metrics need to be established and monitored.

1.1.5.3 **Benchmarks.** Benchmarks for appropriate service levels need to be established by management.

1.1.5.4 **Establish Self Service Units and Areas.** Policies and resources to create and support designated areas and units for customer self-service need to be established by management.

1.1.5.5 **Selection of Location of Branch Offices.** Policies and standardized processes for selection of branch office sites need to be established by management.

1.1.5.6 **Construct and Layout of Branch Offices.** Standard office configurations need to be documented and utilized to optimize customer service.

2. Organization Development Requirements

Organization development requirements include all of the needs related to job design, skill sets, and company culture that are needed in order to meet known business requirements. These requirements largely define changes to the organizational content in which the system will be developed.

2.1 Funding

2.1.1 **Training.** Funds should be allocated to train staff in the required skills and use of the system.

2.1.2 **Critical Skills.** Funds for the retention and/or acquisition of personnel with critical skills to support the system should be allocated by management.

2.1.3 **Data.** Funds should be allocated to purchase required data from outside vendors or partner sources.

2.1.4 **Software.** Funds need to be allocated to purchase required software from third party vendors.

2.1.5 **Hardware.** Funds needs to be allocated to purchase required hardware from third party vendors.

2.5 Incentive/Recognition

2.5.1 **Sales Incentives.** Incentives need to be available to encourage personnel to cross sell and up sell.

2.5.2 **Compensation Incentives.** Employee remuneration needs to be based in part upon meeting individual and group service and sales objectives.

2.5.3 **Customer Retention.** Emphasis needs to be placed upon retaining current customers.

2.5.4 **Ability Recognition.** Employees need to be identified and rewarded for achieving enhanced skill sets and knowledge levels.

2.5.5 **Service Recognition.** Employees need to be recognized for supporting exceptional levels of customer service.

2.7 Culture

2.7.1 **Multi-Product Corporation.** Continuing emphasis needs to be placed on the concept that XYZ sells and services multiple products and the success of the corporation is a function of the synergism created by each department supporting the others.

2.7.2 **Customer Emphasis.** The concept of a customer centric organization needs to be constantly communicated and reinforced.

2.7.3 **Innovative Planning.** Forward looking, innovative strategic planning needs to be instilled at all levels within XYZ.

2.7.4 **Relationship Definition.** Strategic interdepartmental relationships need to be defined and developed to establish a more integrated and effective image to the customer.

2.7.5 **Process Orientation.** Emphasis needs to be placed on customer driven processes versus operational driven processes.

2.10 System User, Data, and Process Interaction Requirements

2.10.1 Classify System User Population (Roles, Workgroups, Locations)

2.10.1.1 **Job Descriptions.** Job descriptions need to be reviewed and clarified when necessary to support changed responsibilities of support personnel. Special emphasis should be placed on the creation of hybrid responsibilities.

2.10.1.2 **Management Structure.** Chain of command for affected offices and departments should be examined in light of redefined job descriptions and responsibilities.

2.10.1.3 **Personnel Assignment.** Staffing levels and possible reassignment of personnel should be examined in light of the changing responsibilities.

2.10.1.5 **Personnel Compensation.** Compensation practices should be examined by management to determine the most effective incentivization of individuals involved in the change.

3. Application System Requirements

Application requirements include all of the basic system operating functionality that is needed in order to meet known business requirements. Because these requirements are oriented toward building and delivering a new and integrated information system, this section includes the majority of the documented functional requirements; and they typically are the most recognizable to readers.

3.1 Customer Management

Customer management includes all application requirements related to the identification and storage of information for customers of XYZ. Such definitions are entered and managed by this set of functions independently of the use of such data by various line of business processing within CRS.

3.1.1 Adding New Customers

The system shall maintain complete information on each individual and organizational customer.

3.1.1.1 **Unique Customer ID Number.** The system shall support the creation of a unique customer ID number that will remain with that customer regardless of his/her status change in the CRS system.

3.1.1.2 **Customer Type.** The system shall support the definition of individuals and organizations. Organization can be defined as couple, household, family or group.

3.1.1.3 **Capturing Identifying Information.** This information uniquely identifies the customer to XYZ and includes full name, home address, home telephone numbers, and date of birth. It may also include business address, business telephone numbers, social security number, etc.

3.1.1.4 **Capture Descriptive Information.** This information provides additional details of the customer beyond the identifying information, and may include demographic and preference data, gender, and financial payment data.

3.1.2 Maintaining Customer Records

The system shall allow for the updating and maintenance of detailed information pertaining to any customer. Typical maintenance includes:

3.1.2.1 **Name Changes.** As a result of any change or correction, the most common being marriage.

3.1.2.2 **Address Changes.** Includes home, business and any temporary address (including vacation). Also includes:

- Sending a questionnaire
- Providing notification to sales personnel
- Automated change of address (NCOA)
- Determining which address to keep.

3.1.2.3 **Electronic Communication Changes.** Includes home, business, or temporary phone-line type communication (including vacation, cell, business, fax, e-mail, etc.).

3.1.3 Connections & Relationships

The system shall support the identification of individual and organizational relationships among customers including:

3.1.3.1 **Identifying Connections**. These include all family and cohabitation relationships that become known to the company:

- **Couples:** These include spousal relationships generally, and husband/wife relationships specifically. Spousal connections shall support the recording of divorces and marriages over time.
- **Family:** These include dependent parent and dependent child relationships generally and father/mother/son/daughter relationships specifically, provided that all family subscribers share the primary address.
- **Household:** These include any combination of families, couples and individuals who share the same primary address.

3.1.3.2 **Customer Hierarchy.** The system shall support mixed hierarchy.

- **Couple:** A couple is made up of two individual customers.
- **Family:** A family is a combination of couples and individual customers.
- **Household:** May include any combination of individuals, couples or families.
- **Group:** May include any combination of individuals, couples, families, households or other groups.

3.1.3.3 **Identifying Organizational Connections.** These include employment and group subscription relationships.

3.1.3.4 **Monitoring Reasonableness.** The system should monitor relationships among customers for reasonableness and report for action relationships or conditions found to be unusual (i.e., multiple spouses, unusual number of children)

3.1.3.5 **Determine Implicit Relationships.** The system shall infer couple, family and household relationships based on individual customer data.

3.1.4 Customer Record Consolidation

The system shall provide mechanisms for minimizing the possibility that the same customer appears on file more than once. Such processing shall include:

3.1.4.1 **Analyzing Customer Records for Likely Duplicates.** The system shall have the ability to compare customers by a match code that may contain zip code, name, address, telephone, date of birth, and/or social security number.

3.1.4.2 **Consolidating Identical Customers.** Multiple customer records identified, and confirmed by an authorized system user as representing as the same customer, will be consolidated to reflect a single customer with appropriately consolidated historical data.

3.1.4.3 **Accounting Ramifications.** Rules normally applied to the addition or elimination of a customer (A/R, earned/deferred, etc.) will also be applied to the consolidated customer.

3.1.6 Special Customer Maintenance

Certain circumstances require maintenance to customer records. The system shall support impact notifications implied by the circumstances including:

3.1.6.1 **Employment at XYZ.** XYZ employees receive special rates. Processing shall include initiating and terminating employment status.

3.1.6.2 **VIP Designation of Customer.** The system shall allow the designation and removal of VIP status manually or by automated expiration.

3.1.6.3 **Death of Customer.** The death of a customer requires updates to the system including notification to other lines of business.

3.1.6.4 **Customer Purge.** The system shall provide a mechanism for purging records, including those deemed inactive for a significant amount of time specified by management.

3.3 Subscription Point of Sale

The system shall provide support for the sale and maintenance of subscriptions from a variety of channels.

3.3.1 Acquiring New Subscriptions

The system shall provide the ability to record new subscriptions.

3.3.1.1 **Avoiding Duplicates.** The system shall check that a customer added to the file does not already exist.

3.3.1.2 **Multiple Channels and Media.** The system needs to provide the most efficient method for adding subscriptions through all available access channels and media, including in-person with an agent, data entry after mail-in or telephone response, IVR, and Internet access.

3.3.1.3 **Subscription Term Definition.** Subscription terms are defined by specifying effective and expiration dates, or else by synchronizing the subscription with the dates of another product already defined (i.e., insurance policy).

3.3.1.4 **Define Subscription Options.** The system needs to provide the ability to establish and rate bundled and unbundled options for the subscriber and or subscription being acquired.

3.3.1.5 **Marketing Promotion Tie-back.** The system shall provide a mechanism for identifying the promotion offering that resulted in the subscription.

- From vendors
- From business lines

3.3.1.6 **Promotional Costs per Acquisition.** The system shall provide costs for individual transactions, including calculations of the promotional cost of new business acquisitions and upgrades and provide a summary report of cost by method of acquisition.

3.3.3 Defining Subscribers

3.3.3.1 **Defining Subscribers.** The system shall support the definition of primary and add-on subscribers.

3.3.3.2 **Minimum Mandatory Primary Information.** The system needs to provide the ability to capture minimum mandatory information before a primary subscriber can be entered:

- Name, address, category, level, type, date joined local/national.

3.3.3.3 **Optional Subscriber Information.** The system shall provide the ability to capture optional information about the subscriber such as phone, gender, SSN, marital status, date of birth, suffix, relationship, alternate address, temporary address, temporary phone, business address, phone, e-mail and billing address.

3.3.3.4 **Billing Options.** The system shall provide the ability to capture billing information:

- Alternate address
- Type of payment
- Autobill Information
- Bill subscriber

3.3.4 Defining Group Subscriptions

3.3.4.1 **Organization Only.** The system shall provide the ability to support specially priced and processed group subscriptions.

- **Central vs. Non-central.** The system shall support the ability to bill a group or the individuals within a group.
- **Pre-Advance Verification.** The system shall support the ability to validate group subscriptions prior to billing.

3.3.4.2 **Subscriber Identification.** The system shall support the ability to offer subscriptions to various entities including vehicles and properly credentialed individuals.

3.3.4.3 **Group Credentials.** The system needs to designate whether to send credentials to individuals or to a central location for distribution.

3.3.7 Subscription Exception Processing

3.3.7.1 **Death of Primary Subscriber.** The system shall support the ability to convert an add-on to primary upon death of the current primary.

- **Remaining Add-on.** Remaining add-on shall be re-rated accordingly.
- **No New Fees.** Within 30 days of payment, no new fees will be collected.

3.3.7.2 **Divorce of Add-on.** The system shall convert the add-on spouse to primary status on a new subscription.

- **Remaining Add-on.** Remaining add-on shall be re-rated accordingly.
- **No New Fees.** Within 30 days of payment, no new fees will be collected.

3.3.7.3 **Age Conversion.** The system shall identify and convert to a primary all qualified associates reaching the defined maximum age.

- **Add-on Age.** The age of qualified associates will be determined by cost center.
- **Relationships.** Only a relationship of "child" or "unknown" will qualify for age conversion.

3.3.7.4 **Requested by Subscriber.** When a conversion request is received a new primary subscription shall be created and the former subscription modified.

3.3.8 Welcome Information

3.3.8.1 **Thank You or Welcome Letters.** The system needs to have the ability to generate personalized thank you letters upon the establishment of a new subscription.

3.3.8.2 **Product & Subscriber-Specific Information.** The system shall support the distribution of appropriate product and subscription information.

3.6 Finance & Accounting

The system shall track and control the movement of financial assets through all transactions in the system, from point of contact collection of funds through bank deposit balancing, supported by full subscriber account monitoring.

3.6.2 Remittance Processing

Customer remittances received via U.S. Mail are received and opened by Cashiers.

3.6.2.1 **Categorization of Remittance.** Remittances are opened and categorized according to the types and amount of processing that will be required in handling the payment.

- **Full Payment, No Changes.** Payments are batched by Internal Cashiers for automatic processing by the remittance processor.
- **Full Payment with Administrative Changes Only.** Payments are batched by Internal Cashiers for processing in Subscriber Records. Payments are noted on the remittance form and detached for immediate bank deposit.
- **Partial Payment or Rating Changes.** Payments are batched by Internal Cashiers for processing in Subscriber Records. Payments are control endorsed and left attached to the remittance form.

3.6.2.2 **Batch Definition.** The system shall provide the capability for Internal Cashiers to define all batches, including types, transaction counts, and control totals.

3.6.3 Payment Processing

3.6.3.1 **Immediate Postings.** Payments shall be posted to customer accounts immediately upon entry into the system.

3.6.3.2 **Unauthorized Payment Controls.** The system shall include controls to identify subscribers requiring review prior to reestablishing service.

3.6.3.3 **Applying Promotional Discounts.** The system shall provide the ability to apply and track discounts offered by XYZ and/or taken by customer through the use of coupons or other means associated with promotional activity.

3.6.3.4 **Applying Surcharges.** The system shall provide the ability to apply and track surcharges associated with a customer bill.

3.6.3.5 **Fee Waivers.** The system shall provide the ability for system users to waive certain fees, providing reasons for doing so and thereby reducing the amounts owed by the customer.

3.6.3.6 Applying Amounts Owed/Due. The system shall provide for applying and tracking payment against customer amounts owed.

- **Full, Partial and Combination Payments.** The system shall provide the ability to apply complex full and partial payments to customer receivables.
- **Allowances.** The system shall provide the ability to assign dollar limits to allow specified amounts to be carried forward or forgiven.
- **Authorization Limits by System User or Workgroup.** The ability to give allowances shall be limited by authorization limits preset in the system for level of system user.

3.6.3.7 Prioritized Allocation to Parts of Subscription. The allocation of such payments to different customer charges shall be prioritized so that payments are always made first to core charges (e.g., surcharges, usage bills, basic subscription, etc.)

3.6.3.8 Payments in Advance. The system shall accept PIA payments.

- **Applying Amounts Paid.** The system shall apply PIA payment to the parts of the subscription designated. All deferred income shall be held until the effective date of the subscription and acquisition shall be taken immediately.
- **Reports.** The system shall automatically produce notices at the time of renewal to indicate a PIA is on the account.

3.6.4 Receipts

The system shall provide the ability to produce receipts for all financial transactions.

3.6.4.1 In Person Receipts at Point of Contact. Receipts with the subscriber's address included shall be printed at the point of contact upon demand.

3.6.4.2 Duplicate Receipts. System users shall be able to recreate a receipt upon demand.

3.6.4.3 Mailing Address Ready. Receipts should print with appropriate mailing address information available for folding into a windowed mailing envelope to facilitate easy mailing if not given directly to the customer.

3.6.5 Refunds

The system shall provide options in issuing refund payments to subscribers, including:

3.6.5.1 Balance Due Settlement. The system shall be able to apply approved refunds directly toward any subscriber balance due receivables within the system.

- The system shall also flag any subscriber with a balance due so that other systems will be alerted to the balance due before other service is provided.

3.6.5.2 Cash Settlement. The system shall be able to allocate a cash refund from funds available in a point of contact cash drawer when the refund is processed.

3.6.5.3 Checked Mailed. The system shall be able to support or process the printing of a check to be mailed to the subscriber.

3.6.5.4 Credit to Credit/Debit Card. The system shall be able to issue an approved refund as a credit to the credit or debit card used by the subscriber (primary, add-on, etc.).

3.6.5.5 Prepayment. The system shall be able to allocate an approved refund toward prepayment of the subscriber's next subscription charge.

3.6.5.6 Deceased. The system shall be able to issue checks automatically "to the estate of" in the case of the death of a subscriber.

3.6.6 Cashiering

The system shall provide for the tracking of held, forwarded, and deposited payments.

3.6.6.1 Agent Cash Drawer. The system shall provide the ability to report payments taken by individual agents and other employees throughout the day.

3.6.6.3 Branch Cashier. The system shall provide the ability for a central cashier at each branch to collect and track payments from customers for activities and transactions for services rendered at the branch.

3.6.6.4 Consolidating Branch Deposit. The system shall provide the ability to track, control, and consolidate payments collected throughout the branch during the working day.

3.6.6.5 Bank Deposits. The system shall provide the ability to make and track bank deposits of consolidated payments throughout the working day.

3.6.6.6 In-Transit Deposits. The system shall provide the ability to track and control deposits made to the subscription but not yet credited to the bank at the end of the working day.

3.6.7 Accounting Controls

The system shall provide appropriate accounting controls on all financial assets moving through the system.

3.6.7.1 Daily Deposit Management. The system shall provide the ability to track, control, and reconcile subscription branch direct bank and in-transit deposits.

3.6.7.2 Credit/Debit Card Management. The system shall include controls to assure that subscription financial card transactions meet business and regulatory restrictions.

- **Integrity.** The system shall ensure the integrity and privacy of all credit/debit card data.
- **Authorized.** The system shall edit for valid credit/debit card types.
- **Accepted.** The system shall assure that XYZ can accept branded payment cards for transactions in a relationship with an acquiring financial institution.
- **Pre-Verify.** The system shall proactively verify branded payment cards likely to be used for payment.

3.6.7.3 Rejected Payments. The system shall include appropriate controls to limit the company's exposure against no good checks and rejected credit/debit account transactions.

- **Identification.** The system shall provide capabilities to record returned checks and unaccepted financial transactions.
- **Notification/Status Change.** The system shall identify transactions of subscribers with recorded bad checks and automatically change their status to inactive.
- **Reason Tracking.** The system shall record the reason provided for the rejection of the check or credit/debit card, and all follow-up actions shall be appropriate to the reason.
- **Checks.** Reasons for bad checks currently include account closed, insufficient funds, stop payment, and refer to maker.
- **Credit/Debit Cards.** Reasons for bad credit/debit card transactions currently include account closed, exceeded credit limit, wrong credit or debit card number and invalid expiration date.

3.6.7.4 Collection/Recovery. The system shall include processing necessary to collect or recover funds lost due to bad checks, credit/debit card problems, unpaid surcharges, and unpaid bail bonds, including:

- **Customer Contact.** The system shall be able to produce letters to customers in order to attempt a non-confrontational recovery.
- **Collection Agency.** The system shall be able to pass information regarding accounts due to an outside collection agency for recovery.
- **Re-establish "Good" Status.** The system shall reestablish customer in active status upon recovery.

3.6.7.5 Payment Adjustments. The system shall provide the ability to adjust or reassign payments that have been booked or encoded incorrectly without adversely impacting dues, fee, and earned/deferred amounts.

3.6.7.6 Earned Income Controls. The system shall provide the capabilities to assure that earned income calculations are controlled and correct as situations arise within the company that impact such calculations; including:

- Subscriber cancellations
- Subscriber resignations
- Subscriber deaths
- Subscriber transfers
- Subscriber A/R and payment adjustments

3.7.4 Workflow Processing

The system shall provide for workflow management by supporting the automation of a register of active transactions - a workflow queue - that shall be accessed and used by system users carrying out their responsibilities.

Work items supported in the workflow queue shall include:

3.7.4.2 Potential Usage Billing Items. The queue shall contain a work item for each service for which the customer was not entitled.

3.7.4.4 Subscriber Deaths Impact Analysis. The queue shall contain a work item for each subscriber recorded as deceased.

3.7.4.5 Returned Mail Research. The queue shall contain a work item for each subscriber address for which returned mail has been recorded.

3.7.4.6 Partial Payments Research. The queue shall contain a work item for each renewal payment received that did not reconcile with the renewal bill and rating changes.

3.7.4.7 Compliments and Complaints Handling.

3.7.5 Remarks & Notes

The system shall provide for notes and remarks to be entered into the system and displayed at appropriate times to appropriate system users. These shall include:

3.7.5.1 System User Comments. Includes any general textual comments that a system user chooses to store in the system related to customers or subscriptions. Remains part of the customer or subscription record until removed by a system user with the appropriate authority.

3.7.5.2 Transaction-Related Notes. Includes specific textual comments related to a customer-related transaction that would be available for display by any system user working on the transaction. Becomes history once transaction is completed.

3.7.5.3 System-Generated Text. Includes specific textual comments generated by the system to advise system users of conditions and situations encountered or identified in the data.

The above comments and notes are available for display:

3.7.5.4 Specific Context. Text marked as relevant to specific situations (e.g., subscribers, transactions, etc.) shall be available for viewing and update by any system user working in those contexts.

3.7.5.5 General Context. Text will be available for display and update through general access by customer/subscriber; resulting in access to a broader range of remarks at the same time.

3.7.6 Cost Capturing

The system shall provide the ability to record cost figures associated with subscriptions and transactions:

3.7.6.1 Labor Hours. Actual labor hours worked in completing the customer transaction.

3.7.6.2 Postage. Actual postage used to fulfill the customer request.

3.7.6.3 Telephone. Actual telephone charges incurred during the transaction.

3.7.6.4 Petty Cash. Actual petty cash used during the transaction.

4. Information & Data Requirements

Information and data requirements include identifying all of the data and information needed to support and satisfy the business and other functional requirements for CRS. These information and data requirements eventually are translated into the files, data bases, and transmittals that constitute the data portion of the system design.

Many of these requirements are easily recognized by readers thinking in terms of files and databases for an automated information system. However, the design of those files and databases is beyond the scope and intent of these requirements. This section defines *what* data is logically needed, not *how* that data will be captured and stored in databases.

4.1 Customer Data

The system shall maintain extensive information on all customers, regardless of any particular business interactions or transactions that are associated with those customers. This requires a rethinking of the concept of customer within XYZ, where traditionally customer and subscriber have been considered synonymous. Customer data, as defined by this group of requirements, are those facts concerning the customer that are true independent of any involvement with XYZ.

4.1.1 Individual Data

The majority of customers managed within CRS are individual persons, described by:

4.1.1.1 Name. Includes the ability to differentiate and use each piece of a name, including first, middle, and last names, and various prefixes and suffixes.

- **Flexibility.** Customers should be able to indicate whether certain portions of their names should be used or not (e.g., in Louisiana they prefer to use the "Mrs." prefix).
- **Variations.** Keep multiple instance of name to allow different levels of formality based on the context of communication; including legal (e.g., "Mr. Robert Taylor"), conversational (e.g., "Bob Taylor"), and correspondence (e.g., "Mr. Taylor") versions.
- **Phonetics.**

4.1.1.2 Birthdate. Should include the capability to capture birth date at multiple levels of detail depending on what the customer is willing to provide:

- **Full Date.** (e.g., MMM/DD/YYYY)
- **Year & Month.** (e.g. MM/YYYY)
- **Year Only.** (e.g. YYYY)

4.1.1.4 Taxpayer Identification Number

- **Social security number.** The taxpayer number shall be presumed to be the social security number for all US-based customers.

4.1.1.3 Marital Status. (e.g., Married, Single).

4.1.1.4 Marital Reason. (e.g., Divorced, Widowed).

4.1.1.5 Gender. (e.g., Male, Female, Ambiguous, Unknown).

4.1.1.6 Special Status. Indicates special conditions, independent of their involvement with the company, that impact the use of the customer in processing (e.g., deceased, in prison).

4.1.2 Organization Data

Customers that are organizations, rather than distinct individual people, represent a subset of all customers. These organizations are described by:

4.1.2.1 Type of Organization. (e.g., couple, family, group, company)

4.1.2.2 Name of Organization. Every organization shall have a name. Such names do not have the first-middle-last name structure that would be associated with an individual. At times, the value to be used in an organization name can be derived, or defaulted, using a compound of the names of the individuals in the organization (e.g. with married couple or families). However, the system shall not require that such compound values be used when the organizations provide specific values that may differ.

4.1.2.3 Contact Person Information. Every organization should have a single individual person identified as the primary contact point in order to facilitate correspondence and telephone contacts between the company and the organization.

4.1.2.4 Billing Information

4.1.3 Address Data

All customers, whether individual or organizational, can be located at a broad array of address data elements:

4.1.3.1 Address Layout. The system shall support multiple addresses for a customer, each including the conventional fields associated with addresses: street, city, postal code.

4.1.3.2 Support International Addresses. The system needs to support addresses outside of the United States.

4.1.3.3 Conform to USPS Standards. Storage and reproduction of addresses need to conform to USPS guidelines in order to receive maximum postal discounts, and to facilitate merge/purge analysis in customer management.

4.1.3.4 Allow for Customer Preferences. For a variety of reasons, customers often report their addresses differently than the USPS guidelines would report them.

- **Local Community.** The majority of differences are local communities being reported by customers where the USPS guidelines report a broader city for the zip code. The system shall allow for retention of both forms in order to personalize addresses when customer perspectives carry the priority, or to meet USPS guidelines where postal discounts for pre-sorted Zip Code carry the priority.

4.1.3.5 Address Usage. Addresses shall be designated by their usage to the customers; including:

- Home address.
- Work address.
- Temporary address (i.e., vacation).

4.1.3.6 Address Duration. Addresses shall include periods of time for which they are effective; allowing temporary and historical addresses to be included in addition to permanent home and work addresses.

4.1.3.7 Address Status. The system shall provide for the identification and tracking of addresses that may have problems associated with use and delivery (e.g., USPS Returns).

4.1.3.8 Geographic Position. The system shall provide, but not mandate, the definition of latitude and longitude coordinates for any address in the system.

4.1.3.9 Special Circumstances. The system shall provide the ability to flag addresses that might be treated differently based on any special circumstances associated with the location indicated by the address (e.g., prison, hospital, senior home).

4.1.4 Contact Data

All customers, whether individual or organizational, can be reached at a broad array of telephone numbers and e-mail addresses.

4.1.4.1 Telephone Numbers

4.1.4.2 Support International Numbers. The system needs to support telephone numbers outside of the United States.

4.1.4.3 Telephone Usage. Telephone numbers shall be designated by their usage or usages to the customers; including:

- Home phone
- Work phone
- Temporary phone (i.e., vacation)
- Daytime
- Nighttime
- Emergency

4.1.4.4 Telephone Types. Telephone definitions shall designate the type or types, including:

- Voice
- Facsimile
- Telecommunications Device for the Deaf (TDD)
- Pager
- Cellular

4.1.4.5 E-mail Addresses. The system shall support multiple e-mail addresses for a customer.

4.1.4.6 E-mail Usage. E-mail addresses shall be designated by their usage to the customers; including:

- Personal e-mail address
- Work e-mail address

5. Human Factors & Training Requirements

Human factors and training requirements include all of the characteristics of the people who will interact with or be a part of the system. This includes all ergonomic, knowledge, and training facilities that are needed in the system order to meet known business requirements.

5.1 System User Groups

5.1.1 System User Types

The system shall be designed and built to support the needs of and provide ad.hoc reports to a variety of different types of system system users, including:

- **Office/Clerical Staff.** For these system users, the system is a central and integral part of their workday. Their primary responsibilities include using the system to respond to events and requests as they occur. The system is, therefore, an integral part of their job and they will devote considerable time to learning the various transactions and actions supported by the system.
- **Sales Staff.** For these system users, the system is a support tool to be used to both solicit and book business. The use of the system is secondary to their direct customer contact responsibilities. As a result, they are less likely to invest time in learning the nuances of system capabilities and actions.
- **Supervisors.** For these system users, the system requires that they monitor and authorize the various activities that are being carried out on the system throughout the day. The system is a secondary support tool to this perspective. Such activities as authorizing new system system users, setting financial control limits, or assigning workflow tasks may be used only infrequently.
- **System Administrators.** For these system users, access to the system is for the purpose of entering and maintaining the various parameters and settings necessary to keep the system running and available to other system users. This responsibility may be only a small part of their job, and infrequent use may require significant additional training and support for effective use.

- **Management.** For these system users, the system is likely to be perceived as a source of management data; used often but only indirectly. Special training and support may be required to encourage these system users to become self-sufficient using the various analysis and reporting capabilities of the system.
- **Customers/Subscribers.** For these system users, the system is likely to be a foreign system requiring significant motivation to learn and use. Extensive support functions need to be available to encourage on-going use beyond the first access. CRS should include flexibility to accommodate customer use in future applications (ATM-like interaction) and therefore usage could increase and so would training and support.
- **Information Systems Staff.** For these system users, the system is likely to be only part of their systems enhancement and support responsibilities.

5.1.2 System User Levels

The system shall be designed to support and optimize the behavior of a variety of system users at different levels of skill and experience, including:

- **Novice.** Such system users are focused on accomplishing real work with the system and may fear both unknown system capabilities and failure at task performance. Their understanding of the use of the system is theoretical, based on their knowledge of company operations. They lack practical experience upon which to draw direction when tasks arise.
- **Advanced Beginner.** Such system users are focused on performing tasks. Based on limited experience, they become more comfortable at performing tasks on the system with which they have experience than at learning new tasks or responsibilities. Their capabilities include the ability to begin to randomly access system components to complete known tasks. By adding new and progressively more complicated tasks, they begin to develop a clearer mental model of the entire system and its organization.
- **Competent Performer.** Such system users are typically focusing on more complex tasks that may require coordinated actions with other system users. They demonstrate an ability to plan out a series of actions using the system and may be more interested in solving simple problems by applying their emerging mental model of the system.
- **Expert.** Such system users demonstrate an ability to understand and solve complex problems using the system and its broadest capabilities. Having developed a comprehensive mental model of the system, they are interested in learning more theoretical design aspects of the system and its interfaces. They also often express interest in communicating with other expert system users.

5.1.3 System User Groups vs. Levels

The system shall be designed to support an expected blend of system users, many of who will remain novices in their use, and some of whom will develop considerable expertise:

	Novice	Advanced Beginner	Competent Performer	Expert
Office/Clerical	25%	40%	35%	
Sales Staff		50%	40%	10%
Supervisors			60%	40%
System Admin.			35%	65%
Management	20%	50%	30%	
Partner Staff	75%	25%		
Customers	60%	30%	10%	
IS Staff			75%	25%

Human Factors

5.2.2 Management/Communication

Policies, procedures, standards and security shall be developed and implemented prior to training.

5.2.2.1 **Expectations.** Communicate on expectations for both the system and the people will be given the highest priority.

5.2.2.2 **Security Levels.** Security levels need to be developed based on a pre-determined criteria (i.e., system proficiency).

5.2.2.3 **Corporate Culture.** Indoctrination of the system into the corporate culture will be necessary.

5.2.2.4 **Management Commitment.** Management commitment to the training process will be vital as well as the commitment to usage in all cases and departments.

5.2.2.5 **Training Definition.** Common definition of "training" as a process, not an event, including involvement of others, not exclusively trainers.

5.2.2.6 **Evaluations.** Merge training accomplishments and proficiency into reward systems and performance evaluations.

5.2.2.7 **Resource Commitment.** Support for training time, scheduling and staffing.

5.2.3 Support/Resources

System integrated data to help train and troubleshoot.

5.2.3.1 **Enhanced Help.** Help Screens developed to assist in step-by-step guidance of data entry.

5.2.3.2 **Solution Repository.** Knowledge database with frequently asked questions accessible by query or as "the-tip-of-the-day" or pop-up reminders.

5.2.3.3 **Common Standards.** Branch office procedures and scripts accessible to system users.

5.2.3.4 **Windows Image.** Consistent look and feel of Windows. Easily navigated by the system user groups. Printable.

5.2.3.5 **Available Administrative Help.** A "person" accessible to make decisions immediately when called. (Branch/regional systems coordinators).

5.2.5 Help & Training Functions

Help functions and online support need to be easily read and understandable to the system user (limited jargon). A step-by-step process for entry functions will facilitate usage.

5.2.5.1 **External.** External sources for training may include CBT support, outside training vendors, or other resources to develop the best materials and maximize training results.

5.2.5.2 **System User Materials.** System user materials should include all electronic Help access as well as training guides and update notices. System user materials should be modular to aid in staff development and to be "customized" to individual reference or training needs.

5.2.5.3 **Training Environment.** Training environment needs to be conducive to computer training. Training centers should be secured throughout the territory to prevent excessive travel for participants. Other training environmental factors should be considered, including location, lighting, system user levels and cohesiveness of group, projection equipment, reliable, accurate database and equipment, Etc.