Syntax Soft-Tech India Pvt Ltd

SSIPL
End-to-End development cycle
Process Document

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Revision History

Version Release	Date	Pages Affected	Author	Remarks
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1.1	06-March-2004	All	Subramaniyan K V	Process updates per QSR findings
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Introduction

Scope of this document

In line with the requirements provided by the client organization to SSIPL, this document highlights the proposed approach for delivering a product solution.

Along with the delivery approach, this document contains the information on the technical approach that will be undertaken by SSIPL, Inc. for developing a solution.

About Syntax Soft-Tech India Pvt Ltd.

SSIPL is a subsidiary of Total OutSource, Inc. IL, USA. (www.totaloutsource.com)

SSIPL is an information technology services company, specializing in the business of Product Framework development, Web Based Systems development, Business Process Management Solutions, Enabling Services, and Customized Development.

SSIPL engages in the designing, development and deployment of end-to-end business solutions for the core sectors of Manufacturing, Banking Financial Services & Insurance (BFSI), and Healthcare Verticals in the areas of core functions automation, Work Flow Collaboration, Enterprise applications, Knowledge Management, and Performance Enhancement.

SSIPL provides development services, undertakes offshore / onsite projects in the above verticals. With its skills and expertise, SSIPL helps its clients define, design, develop and deploy their information systems that best serve their respective business requirements.

SSIPL has a state of the art development center in Bangalore. We are headquartered in Chicago, IL, USA comprising of the project management and technology management office. Growing at a very fast rate since the inception, we are today an established provider of solutions to discerning global clients.

The key operating measures at SSIPL are:

- Customer delight through quality and time to market;

- Process oriented execution of projects;

- Professional work environment and a unique combination of offshore – onsite execution methodologies.

- Consistently delivering projects on time, within budgeted cost and on two contrasting company directives: Consistency and Flexibility.

SSIPL understands the polymorphism of information technology in its usefulness to customer organizations. With its rich experience, it can provide an appropriate mix of IT products, services and solutions to satisfy a client's business requirements in totality.

A brief overview of some of our experiences

Due to certain confidentiality agreements, certain technical aspects have not been described to the fullest extent.

- The following engagement was part of the development of features and functionality for the healthcare payer system. The development included functionality for business process workflow mechanisms. The interfaces included connections to Systems for confidential information and other Clinical data verifications systems (Actual names have been left out). Due to the nature of confidentiality agreements, some of the technology implementations cannot be described to the fullest extent. The technology was based off a multi-threaded platform similar to (Weblogic, Websphere) using Java based techniques and XML technologies. Requests originate from workstations across several geographic regions and terminate into a centralized database server. The application platform addresses the transactions between the application layer and the database layer. Authentication into the system was based on a 3rd party tool. Access to each module within the application was based on roles and responsibilities which were based on user authentication. Core technologies used in this application were J2EE, XML and Java. Integration involved several third party tools. The backend repository was based on Oracle. The development cycle was based on RUP methodologies and the Change management was managed using the Rational Toolset.

- The following engagement was part of the development of an automated solution for Parking Lot System using contact less card readers. The main objective of this system is to introduce a contact less smart card based solution for the Parking Ticket System. Instead of the paper based parking coupons, customers will be issued Contact-less smart cards, when they park the vehicles inside the parking lot. The Contact less smart card shall contain details like the vehicle number, the parking in time and the out time for every transaction. Persons manning at the entry and exit gates will carry Contact less Handheld Terminals to capture details like vehicle number, in time and out time into the Contact less parking cards and also the hand held terminals store these information. Subsequently, this is will be used in generating the MIS reports. The proposed solution automates the existing manual parking system using handheld terminals and PC based MIS software. The solution was developed using Visual Basic and the SDK for the contact less card readers and further integrated with the MIS software. The development cycle was based on RUP methodologies and the Change management was managed using the Rational Toolset.

- The following engagement was part of the development of an application addressing the need of manufacturing and also re-engineering of the current workflow. The challenges included Integration with the existing system and automation of existing legacy systems. Data gathering was constructed across different geographic locations and redundancy methodologies were implemented. Features and functionality was based on modular development of individual workflow process. The application was developed with Microsoft Visual Studio .NET Enterprise with an underlying database using SQL Server. Reporting and querying approaches were address using Crystal Reports. The development cycle was based on RUP methodologies and the Change management was managed using the Rational Toolset.

Project Management

The Development Organization of SSIPL is located in Bangalore, India and derives its strengths from strong technology, products development and projects delivery expertise prevailing within the company.   Every project is viewed from the perspective **of Domain-Technology-Coordination** and appropriate Project Teams are set-up for the execution of the project.   A SSIPL Project Control System is in effective use to control the flow of information between the teams involved in the project.

The figure below shows the same:
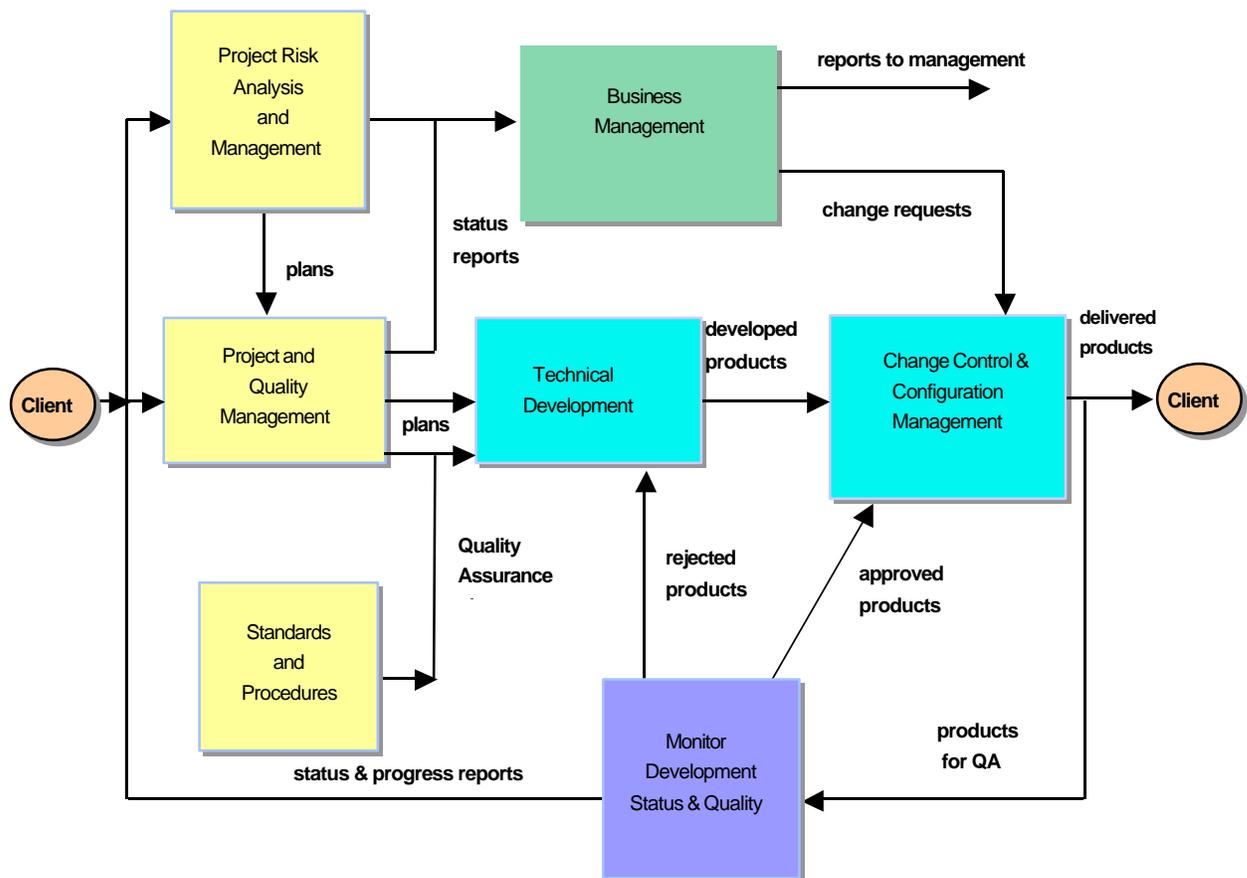
SSIPL ensures good business practices at all stages of the project to ensure there is no avoidance of doubt as to who is responsible for what and when. We derive our life cycle and process methodologies by adapting to CMM levels of standards and maturity.

Clear review meeting documentation with identified tasks, owners, roles and responsibilities must be produced with draft notes circulated for agreement prior to formal release and distribution.

The risk of *'scope creep'* shall be carefully managed to ensure the project is not compromised and remains commercially viable. The process of change control plays a critical role in managing this aspect of a project.

SSIPL understands the need for strict management of all changes and our technical consultants are available to work with Clients to discuss enhancements and additions to the application specification.

Testing and sign off for each release by the System Owner (or his/her nominee) before implementation, shall be incorporated in the specific Change Control Procedures agreed with the Client (defined in Acceptance Criteria).

SSIPL expects that enhancements or changes to the application system shall be handled by the use of the Change Control Procedure. On receipt of an authorized change request from client, SSIPL shall examine the requirement, document the change, assess any implications and provide the estimate of the change (if any).

SSIPL is well versed in utilizing different Change Control procedures as each of its customers has their own variation.

An escalation process has been established to mitigate any issues. The typical escalation process is described in the following section. The specific problem should be analyzed to ensure a corrective action that has been agreed upon is implemented.

Project Team Organization and Escalation Process

This section briefly describes the key duties and responsibilities of all staff who manage, perform and verify activities associated with Projects at SSIPL.
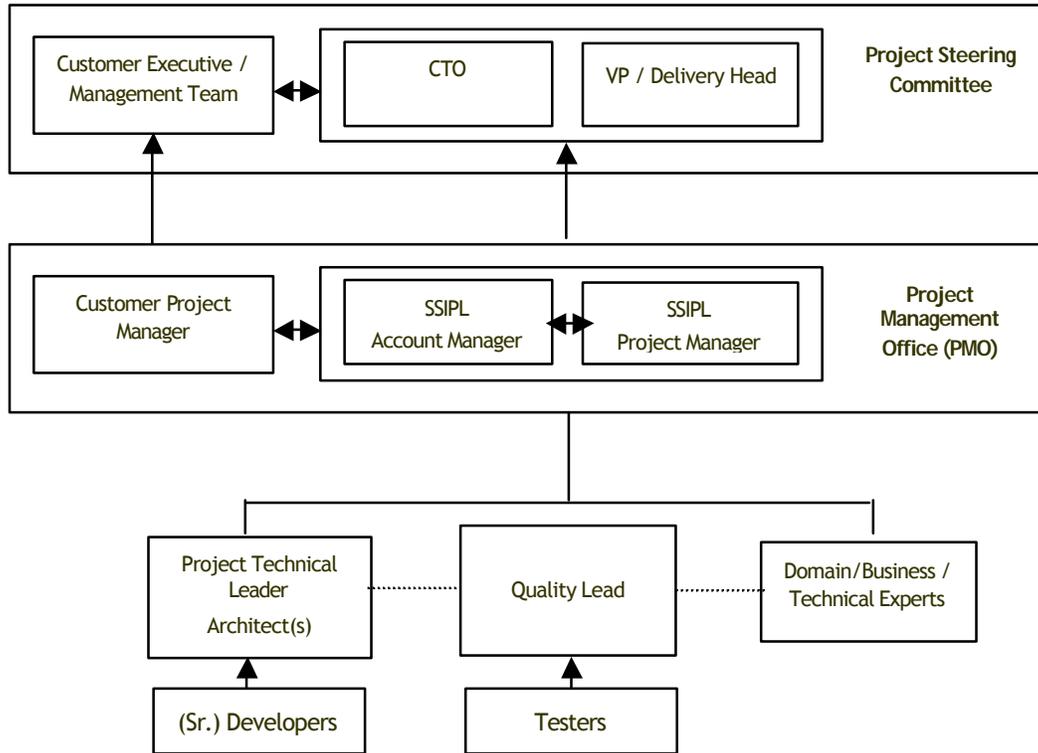
The above diagram shows the three layers of the recommended project organization. These layers and the roles are explained below.

Layer 1 - Project Steering Committee

The purpose of a steering committee is to take responsibility for the business issues associated with a project. A steering committee's role is crucial to a project's success. It is responsible for approving budgetary strategy, defining and realizing benefits, and monitoring risks, quality and timeliness. The steering committee consists of senior management personnel of both the organizations.

Roles and functions of the steering committee include:

- Approval of changes to the project and its supporting documentation
- Monitoring and review of the project
- Assistance to the project when required
- Resolution of project conflicts
- Formal acceptance of project deliverables

The steering committee is highest point of escalation.

Layer 2 - The Project Management Office (PMO)

The PMO provides direction in areas such as scope definition, project plan development, resource estimation, detailed scheduling, and performance reporting. The PMO executives manage projects, including customer and internal initiatives.

As per the diagram above, the SSIPL Project Manager will interface directly with the Customer Project Manager, while the SSIPL Account Manager performs a support role and primarily manages and sustains the engagement with the customer.

The Project Management Office is the first point of escalation.

Escalation routes will be provided via the SSIPL Project Manager to the steering committee as necessary based on the issues being raised. These paths will be used to determine the resolution of all issues that cannot be cleared using defined project resolution procedures.

The following table describes some of the roles represented in the project organization diagram above and their primary responsibilities, this table also contains a list of support resources allocated and their roles.

Roles	Responsibility
Vice President - Delivery	The VP-Delivery leads the overall planning and management of the program, shapes priorities and generally tries to keep the project team focused on the right goal. The VP-Delivery also establishes a set of practices that ensure the integrity and quality of project artifacts. All project managers within the program report to VP-Delivery.
Project Manager	The Project Manager manages the entire project; this includes leading the planning and the development of all project deliverables. The project manager is also responsible for managing the budget and work plan and all project management procedures (scope management, issues management, risk management, etc.)
Domain/Business/Technical Experts	Domain/Business/Technical Experts are a pool of expert resources specializing in a specific area related domain, business and technology. These experts identify/provide/verify any specialized solutions that are required for the project.
Architect	The Architect is responsible for designing and implementing technical architecture, defines the structure of the system, its interfaces, and the principles that guide its organization, design and implementation. The Architect is also responsible for communicating the underlying rationale and provides day-to-day technical leadership for the project's Designers and Implementers.
Team Leader / Developer Lead/ Project Leader	Technical Expert. Leads technical & development teams in Understanding the work to be completed, Planning out the assigned activities in more detail if needed, Completing assigned work within the budget, timeline and quality expectations. Tracks

	issues, scope changes, risk and quality concerns and Proactively communicates status and manages expectations
Sr. Developers	Leads a team of developers to accomplish the detailed implementation of specific functional and technical goals of the project.
Developers	Developer focuses on developing and integrating code.
Project Librarian	The Project Librarian is responsible for the SCM system, creating directory structure, check in, check out security, base lining, moving files between phases, maintaining Versions, repository and source backups.
DB Admin	DB Admin is responsible for database creation, changes, updating DB Docs, Access Security and backups.
QA/Testing Lead	Responsible for QA and Testing, reporting and tracking defects to closure. Will manage the QA lab and ensure OS's, Web Browsers, Resolutions, and other constraints of a customer's experience are mitigated to ensure predictable success of deployments. Will also serve as "Release Engineer" ensuring that proper signatures have been secured.
Testers	Testers will conduct and execute test plans and test scripts and will test the application as per the norms in testing strategy applied for Black box testing or White Box testing as required.

Planning and Progress Monitoring

Project Plan and **Test Plan** control the Project activities. The contents of the Project Plan are:

1.0   Introduction
      1.1   Project Overview
      1.2   References

2.0   Implementation methodology
      2.1   Life Cycle model
      2.2   Estimation Methodology
      2.3   Specification
      2.4   Design
      2.5   Programming Standards
      2.6   Testing
      2.8   Release
      2.9   Phase Over

3.0   Time and Resource plan
      3.1   List of all project activities
      3.2   Project schedule and Gantt chart

4.0   Project team and Progress Monitoring
      4.1   Project Team
      4.2   Project Communication Plan
      4.3   Project reporting schedule

5.0   Configuration Management Plan
      5.1   Configuration Items
      5.2   Configuration Management Process
      5.3   Configuration Management Tools
      5.4   Change Management and Configuration Management Records

6.0   Risk Management Plan

7.0   Maintenance / Support Plan
      7.1   Scope of the Maintenance activity
      7.2   Maintenance Organization
      7.3   Maintenance Process
      7.4   Maintenance Records

8.0   Training Plan and User Documentation Plan

9.0   System Integration Plan

SSIPL's Offshore Start-to-Finish Model

The above illustration describes the SSIPL Start-to-Finish model. The technical processes applied by SSIPL are further outlined in this document.

Scope of a Project

We at, SSIPL endeavor to study and understand the requirements delivered by the client organization, keeping in the consideration, the existing Business Process, the current immediate requirements and future projections.

Technical Approach

The development methodology is based on the industry-standard Rational Unified Process (RUP). RUP provides a disciplined approach to managing the development process and ensures timeliness and quality of the deliverables. RUP also enables best practices to be deployed across all the projects in SSIPL.

The Development Lifecycle is broken into cycles, with each cycle focusing on specific features/functionalities of the solution. Each phase is concluded with a well-defined milestone – a point in time at which certain critical decisions are made to ensure that key goals are achieved.

The development phases are graphically represented as below:

Project Phases
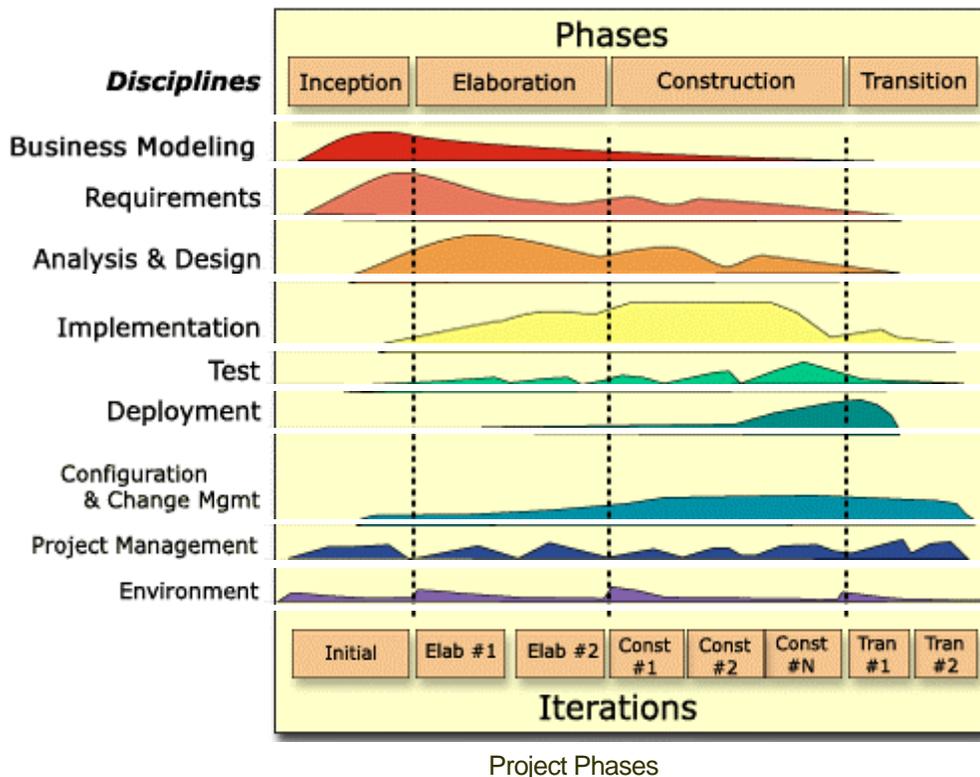
The above illustration describes the variations in activities over time. For example, in early phases the team spends more time on requirements; in later iterations the team spends more time on implementation.

The development phases are further detailed as below:

Inception

SSIPL technical team formulates the scope of the project at this phase. The project team estimates the project and also determines the need of resources. This involves capturing the most important requirements and constraints of the application to help the team to formulate the scope of the project.

The primary objectives of the Inception phase include:

- Establishing the scope of the solution and boundary conditions

- Identify the critical use cases of the system, the primary scenarios of operation that will drive the major design areas.

- Estimating the overall cost and schedule for the entire project (more detailed estimates is done at the elaboration phase that will immediately follow)

Elaboration

The development team analyzes the problem domain, the detailed system objectives and scope, the choice of architecture, and the resolution of major risks. Detailed estimation and scheduling is done at this stage.

The primary objectives of the elaboration phase include:

- Confirm the product vision and requirements.

- Finalize the architecture.

- The key approaches to be used in testing and evaluation.

- The client agrees that the proposed application can meet the requirements, in the context of the current architecture and requirement details.

Construction

The detailed design and coding of the solution is done at this phase. SSIPL testing team will test the solution to determine if the developed solution is meeting all its requirements and assess the quality.

The primary objectives of the Construction phase include:

- Completing the detailed design, development and testing of all the required functionality.

- A fully developed and tested solution that meets the client requirements in terms of functionality and performance.

- To ensure that the solution is complete in terms of platform integration requirements.

Transition

The delivery is done at this stage and provides user training to the end users and the administrative users. Any fine tuning, if required, to the solution is also done in this phase based on the feedback from users, usability or installation issues. The transition phase ensures that the application is available for its end users.

The primary objectives of the Transition phase include:

- Acceptance Testing to confirm the functionality of the developed solution against client requirements

- Training of users and administrators

- System Tuning activities to enhance performance and usability

- Achieving client concurrence that the development of solution is consistent with the requirements specified in the Requirements Specification document.

On completion of the transition phase, the product moves into the production environment and the post-release maintenance cycle begins.

Quality Controls

The following section briefly describes some of the control mechanisms defined within the SSIPL development process.

These controls are to provide insight into the management and resolution of defects encountered in developing and supporting a solution. The metric are reported per project, release, or organization.

The chart below describes critical and major severity defects.
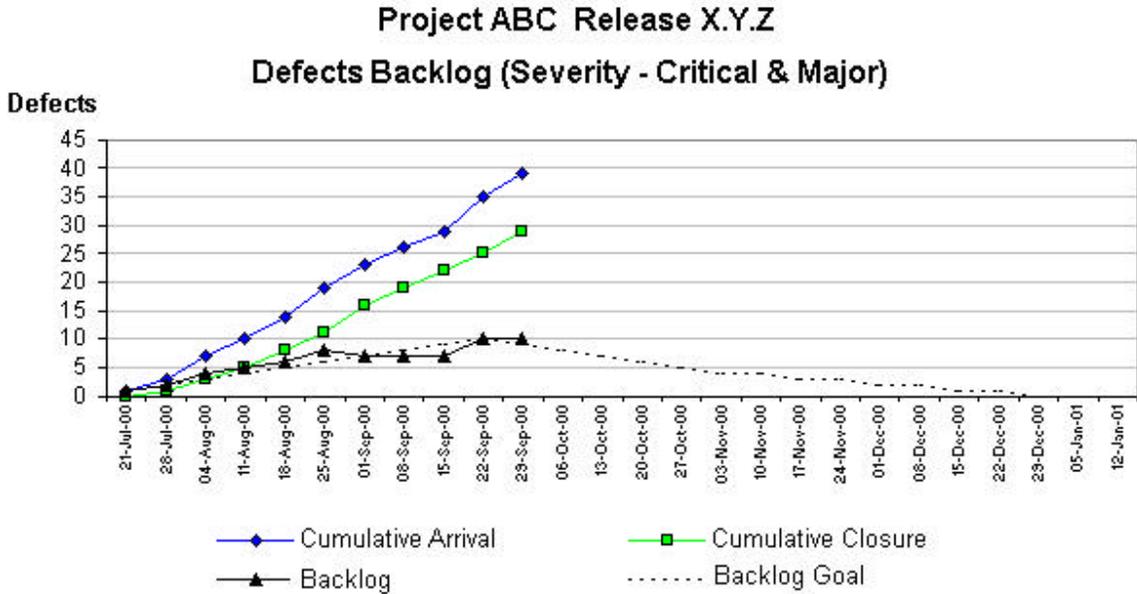
The Cumulative Arrivals and Closures, Backlog are depicted as blue diamonds and green squares respectively in a line chart format. The Backlog goal line is shown as black triangles and also as a dashed line on the second y-axis. The x-axis represents the end of the reporting period.

The chart below describes critical and major severity defects.
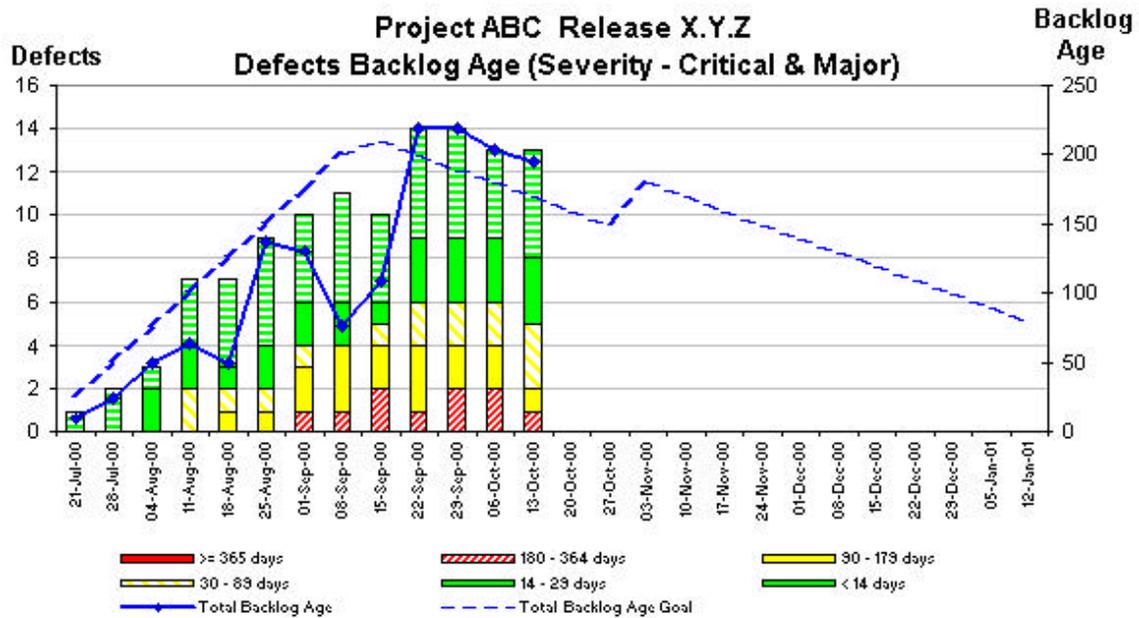
The defect backlog age is described as a combination stacked-bar and line chart. Stacked bars represent the number of backlog defects in age groupings of < 2 wk., 2 wk. - 1 mo., 1 mo. - 3 mo., 3 mo. - 6 mo., 6 mo. - 12 mo. and >= 12 mo.14 days, 14 to 29 days, 30 to 89 days, 90 to 179 days, 180 to 364 days and >= 365 days, and are shown on the left y-axis. The right y-axis represents the total age of all backlog defects for the reporting period. The goal for the total defect backlog age also described as a dashed line on the right y-axis. The x-axis gives the end date of the reporting period

At SSIPL we may tailor these age groupings if scales are not appropriate to address Client processes and development methodologies.