DEVELOPMENT

DEVELOPMENT GUIDE

XOOMPOINT METHODOLOGY

RELEASE 1.0.0

XOOMPOINT METHODOLOGY

RELEASE 1.0.0.1

INTRODUCTION TO DEVELOPMENT GUIDE

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1   About this Document

This document summarizes the contents, principles and objectives of XoomPoint Methodology Development Guide. XoomPoint Methodology is an industry standard methodology designed for Product Development, Project Work and Quality Assurance for international software and services companies.

The methodology is developed in a EUREKA project.

1.1   Intended Audience

This document is intended for project and product managers, development teams, corporate management, partners and customers.

1.2   Organization

This document is organized as follows:

Chapter	Contents
Chapter 1	Describes the purpose of the document. It also explains the terminology and typographic conventions used in the document. A list of related documents can also be found in this chapter.
Chapter 2	Introduces and outlines the Development Guide.
Chapter 3	Describes the contents of the Development Guide.

1.3   Typographic Conventions

Convention	Description	
Italics	*Italicized*	Text is used to call attention to cross-references.
Bold	**Note**	Important notes are written in bold.

1.4   Terms and Concepts

The following abbreviations, terms and concepts are used in the document:

1.4.1   Abbreviations

Abbreviation	Meaning, definition
CMMI	Capability Maturity Model Integration
ISO	International Organization for Standardization
MSF	Microsoft Solutions Framework
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PRINCE2	Projects in Controlled Environments
QA	Quality Assurance
QMS	Quality Management System
SEI	Software Engineering Institute

1.4.2   Terminology

Term, Concept	Meaning, definition
Professional Services	Professional Services is an organization that provides a suite of services ranging from high-level consulting to improve business processes to custom application development, implementation, training and support.
XoomPoint Methodology	XoomPoint Methodology is a Product Development, Project Work and Quality Assurance Methodology based on over a decade of software engineering expertise, best industry practices and well-acknowledged standards and guidelines listed in *Appendix I.*

1.5   Related Documentation

The following list comprises all documents referred to herein. It also lists documents, which provide with additional information about this topic:

#	Document
[1]	Introduction to General Methodology Guide
[2]	Introduction to Project Management Guide
[3]	Introduction to Auditing Guide
[4]	Introduction to QA and Software Testing Guide
[5]	Introduction to Support Services Guide

2 Introduction

XoomPoint Methodology is based on over a decade of software engineering and services expertise, best industry practices and the well-acknowledged ISO standards and guidelines listed in *Appendix I.* XoomPoint Methodology is verified against other accepted industry standards, such as PMI's PMBOK, Six Sigma, PRINCE2, SEI CMMI and MSF.

2.1 Introduction to Development Guide

The Development Guide describes the standardized model for product and project development work from the perspective of the development team members. It describes the typical work phases in development work (work and task breakdown). It covers the phases from concept development to actual delivery, as well as the results of each phase. These include the documents and other deliverables created and updated in each phase.

Although Development Guide is primarily intended for product and project managers and development team members, it is also suitable study material for all the stakeholders participating in the project work, including contractors and members of the steering boards.

Development Guide describes the Specification and Development Phases, coding guidelines and practices, testing and Quality Assurance in general for solution deliverables.

The work tasks, such as planning and follow-up, are excluded from the Development Guide. Instead they are described in the General Methodology and Project Management Guides. Even though development work and Quality Assurance are tight counterparts, majority of the QA related methodology is described in a separate guide.

There are templates and checklists available for custom software development and unit testing and they are referred to in this guide. These templates and checklists give detailed information on how to conduct the development phases, how to create unit test cases, reports, etc.

2.2   Outlining

XoomPoint Methodology offers a wide range of methodological and practical support for software design and development services to assist the software companies in producing and deploying mission critical solutions for various kinds of business operations.

XoomPoint Methodology provides world-class capabilities for development of custom software utilizing the industry proven technologies. This capability ranges from building core system components for any major operative platform to a wide range of solutions including systems integration, content and collaboration management, and web application development.

The developers of XoomPoint Methodology have extensive experience delivering customized, optimized solutions to diverse organizations where ever the robustness and scalability are essential requirements.

Regardless of the size and scope of the project, XoomPoint Methodology follows a systematic and disciplined approach utilizing focused project management to ensure quality, consistency, and timelines of delivery.

The business-driven custom software development offerings focus on the creation or modification of existing software to address customers' unique business requirements. With the XoomPoint Methodology driven development model, customers gain faster time-to-market, competitive advantage through highly customizable methodology and access to the most qualified software engineering expertise.

Standardizing development work aims at carrying out also custom projects as production-like repeatable processes where agreed standard methods are followed systematically in the development, quality planning, defect management and correction, as well as in maintenance and future upgrades.

Development Guide assumes that the Supplier and the Customer are from different organizations. If the project in question is internal, it is advisable to use the same methodology, but at discretion in an applied form.

2.3 Benefits of Using the Methodology

The methodology described in the Development Guide is applicable to development tasks of all sizes, using a 'light' version for small initiatives. The methodology presented in is used in feasibility study, change survey, specification and design projects, as well as in implementation and deployment projects. The methodology is not limited to software development and delivery projects, but may also be utilized in an applied form in any other product development or subcontracting projects.

Each project will go through the same phases, some projects more systematically than others.

The use of the methods promotes systematization and repeatability and saves time in the long run. Plenty of time will be spent on and must be reserved for the study of the methodology in the first commitment. With each of the subsequent projects, the use of the methodology will become easier and more professional.

Project managers, software developers and Quality Assurance personnel should use this guide as a checklist from time to time, even after they have become familiar with the methodology.

3 Contents of the Development Guide

Development Guide covers all the major areas relating to successful software development. Development processes described in the guide are divided into the following models:

- Model for the development process
- Model for the defect fix process

The first model describes a process for all software projects that aim to produce new functionality, be it an entirely new software subsystem or additional functionality for an existing solution. The model is first described, as it should be used for "major" projects or product releases; there are also instructions how the model is applied for "minor" initiatives.

The second model describes the process how reported software defects are analyzed and processed as well as how defect fixes are planned, scheduled, implemented and released.

3.1 Software Development Process

The development model, which is often called as software project, consists of the following phases:

- Detailed Requirements Development
- Architecture Design
- Software Implementation
- Software Certification
- Preparing a Software Release

The model can be applied to both large and smaller initiatives. There is a section, which describes the necessary adjustments of the model for minor feature projects.

3.1.1   Detailed Requirements Development

Development Guide sets the goals of this phase as follows:
- To specify requirements for the software development process deliverables
- To complete and prioritize solution requirements
- To evaluate the complexity of the deliverables
- To derive from the deliverable requirements the features and functionality to be implemented in the software release
- To write a preliminary draft of a Functional Specification or Release Features
- To deduce test requirements from the deliverable requirements
- To go through the risk analysis

3.1.2   Architecture Design

Development Guide sets the goals of this phase as follows:
- To specify the solution architecture, software components and their responsibilities
- To specify interfaces, both external and internal
- To select and to specify implementation conventions and practices

This phase typically produces the Technical Specification or alternatively Software Architecture Specification and optionally Test Requirements Specification for Quality Assurance purposes.

3.1.3   Software Implementation

Development Guide sets the goals of this phase as follows:
- To implement a software solution that meets the product requirements and to carry out module, unit and integration tests. The software solution includes:
    - o The source code and the binary components derived from them
- To produce a release package which includes:
    - o A setup utility or an installation script
    - o The binary components and the configuration components required by the system
    - o The solution documentation, both customer and technical
- To complete matters under version control

3.1.4   Software Certification

Development Guide sets the goals of this phase as follows:
- To certify the final solution functionality against the requirements

> - Verify that defects found in unit, module and integration testing are corrected according to set quality requirements
- Prepare the solution for release phase

3.1.5 Preparing a Software Release

Development Guide sets the goals of this phase as follows:
- To deliver a fully tested and certified release package including:
  - Installation package
  - Documentation
  - Accepted factory tests, i.e. Software Certification
- To hand out the software product to the Deployment Organization that:
  - Establishes the ability to install and support the solution
  - Prepares marketing material for the solution (optional)
  - Produces training material

3.2 Defect Fix Process

The defect fix process model consists of the following phases:
- Defect Management
- Implementation and Testing of Corrections
- Software Release

3.2.1 Defect Management

Development Guide sets the goals of this phase as follows:
- To ensure that all defects are addressed
- To ensure that all important defects are properly analyzed
- To ensure that fixes for defects are implemented in an efficient manner
- To schedule defect fix releases
- To inform the organization about forthcoming fixes

3.2.2   Implementation and Testing of Corrections

Development Guide sets the goals of this phase as follows:
- To implement and certify the planned corrections to the software:
    - o The source code and the binary components derived from them
- To produce an release package which includes:
    - o The binary and other configuration components
    - o The necessary documentation
- To complete matters under version control

3.2.3   Preparing the Software Release

Development Guide sets the goals of this phase as follows:
- To deliver an approved release package including:
    - o Installation package
    - o Documentation
    - o Accepted factory tests, i.e. Software Certification
- To hand out the software product to the Deployment Organization

Appendix I: ISO Compliance

XoomPoint Methodology conforms to following standards:

Standards and Guidelines	Purpose
ISO 9000:2000, Quality management systems - Fundamentals and vocabulary	ISO 9000:2000, Quality management systems - Fundamentals and vocabulary
ISO 9001:2000, Quality management systems - Requirements	This is the requirement standard you use to assess your ability to meet customer and applicable regulatory requirements and thereby address customer satisfaction. It is now the only standard in the ISO 9000 family against which third-party certification can be carried.
ISO 9004:2000, Quality management systems - Guidelines for performance improvements	This guideline standard provides guidance for continual improvement of your quality management system to benefit all parties through sustained customer satisfaction.
ISO 19011, Guidelines on Quality and/or Environmental Management Systems Auditing (currently under development)	Provides you with guidelines for verifying the system's ability to achieve defined quality objectives. You can use this standard internally or for auditing your suppliers.
ISO 10005:1995, Quality management - Guidelines for quality plans	Provides guidelines to assist in the preparation, review, acceptance and revision of quality plans.
ISO 10006:1997, Quality management - Guidelines to quality in project management	Guidelines to help you ensure the quality of both the project processes and the project products.
ISO 10007:1995, Quality management - Guidelines for configuration management	Gives you guidelines to ensure that a complex product continues to function when components are changed individually.
ISO 10011-1:2002, Guidelines for quality and/or environmental management systems auditing - Part 1: Auditing	Gives you guidelines on the main requirements for auditing a quality system.
ISO 2382-1:1993, Information technology - Vocabulary - Part 1: Fundamental terms	Provides the standardized terminology.
ISO 10013:1995, Guidelines for developing quality manuals	Provides guidelines for the development, and maintenance of quality manuals, tailored to your specific needs.
ISO/TR 10014:1998, Guidelines for managing the economics of quality	Provides guidance on how to achieve economic benefits from the application of quality management.
ISO 10015:1999, Quality management - Guidelines for training	Provides guidance on the development, implementation, maintenance and improvement of strategies and systems for training that affects the quality of products.

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