

# THE INGENIA PROCESS™

## Our Development Methodology

At Ingeniasoft, all of our software development campaigns are governed by a well defined and focused methodology we call the Ingenua Process™. It follows an approach similar to that of the well known Rational Unified Process® but has been tailored to support both Object Oriented and Non-Object-Oriented paradigms. It is a reliable, scalable approach for developing robust applications while ensuring exceptional quality and maximizing the business value of the project.

The Ingenua Process consists of four phases, each of whose completion is marked by a milestone. First, is the gathering of the fundamental business and functional system requirements. Next, we architect the proposed system, taking into consideration existing and 3<sup>rd</sup> party technologies. Third, we create a system prototype and continuously evolve it. And finally, we integrate and test the system components and when complete place it into production.

Within each phase of the process, various specific ‘workflows’ are utilized to govern the activities belonging to each phase. During an application’s conception and realization every activity required during the course of executing the project is defined and placed within a workflow, giving it structure and focus. The workflows govern the course of project execution, thus enabling an organization-wide process which gives effective control at every step of the project.

## Core Development Activities

Phase I  
Business Modeling and Establishing Requirements

### Business Process Modeling

Here the key needs of the business are identified, defined and documented as we strive to answer the question of ‘why’ this system is important to the fundamental needs of the organization. The delivered system will later be measured against these business needs, and the success, or lack thereof, will ultimately be determined. The goals and objectives of the project, from a business standpoint, are identified and documented.

### Project Process Planning

The goals and objectives of the project, from a user standpoint are identified and documented. The project scope is defined and communicated. Major dependencies and risk factors are identified. The communications channels between internal departments, 3<sup>rd</sup> parties and other stakeholders are identified.

### “Capability Measure” Gap Analysis

It is often extremely important to plan for a review with users if a legacy system will ultimately be replaced. Users will judge any proposed or newly developed system against the familiar, former system and make their own determination if their job has become easier. The ‘Gap’ is defined as the difference between the capabilities of the legacy system and the requirements of the system to be developed.

### Requirements Definition

Here the ‘what’ of the system is defined which takes the form of a listing of detailed, prioritized requirements. Requirements are gathered in a variety of ways including client interviews, “work-withs”, competitive demonstrations, etc. The workflow of the system is determined and documented and any gaps or inconsistencies identified. The ‘who’ and the ‘when’ of the system is also defined in this phase. A detailed project schedule is developed which shows the timeline the project will follow. It includes all major milestones, interdependencies as well as task ownership. Hardware, software and network set-up and configuration occurs here.

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## Core Development Activities (continued)

### Phase 2 Analysis and Design

#### Rapid Prototype

An evolutionary prototype is developed focusing primarily on the User Interface (UI) and reports. Rapid Application Development (RAD) sessions are held where developers, graphic designers and users are communicating directly. It is proven that users give more tangible input to a 'hot' prototype that they see before them as opposed to a 'cold' paper specification.

#### System Design

The Physical Data Model and Data Dictionary are developed so that all data that will interact with the system are sourced and accounted for. Most importantly, the business rules and workflows are identified and checked for consistency. The overall design is reviewed by a technical architect to ensure consistency among all the proposed technologies and to prevent downstream surprises. System security and firewall issues are addressed here.

### Phase 3 Evolving the Prototype

#### Prototype Evolution

The prototype system from the design is evolved into a near functionally complete system. The interactive cycle of user review sessions followed by software coding produces a system as it was intended. The business logic is coded and tied to the GUI. RAD sessions continue although less frequently.

#### System Development

The core construction of the system occurs in this phase until it evolves into a fully functional, unit tested system. Integrations to 3<sup>rd</sup> party technologies are coded and tested.

### Phase 4 Testing, Integration, and Deployment

#### System Test

Initial stress testing occurs here in order to determine the system's ability to handle data loads and resolve any bandwidth issues. Additional 'tuning' may be necessary in order to achieve the desired application speed.

#### System Integration

During this phase the system is assembled and thoroughly tested. Defects are identified and repaired. Test data population is performed and performance testing is done with a full complement of records and simultaneous connections.

#### System Integration Test

Data conversion tests are performed to ensure data integrity. Performance tests are again performed with fully loaded data sets and user counts. Usability testing occurs here where system users are given the opportunity to 'test drive' the system and make suggestions for modifications. The approved system is built and packaged into a production environment.

#### Deployment

In this phase the implementation plan is executed, the software is ported to the production RDBMS and Web servers, client software is installed and actual usage begins. User training occurs. Performance levels are monitored and the RDBMS and network are tuned. Administration tasks such as login, user management (adds, changes, deletes) are performed.

#### Quality Assurance and Assessment

The system usage is monitored to insure that it meets or exceeds the previously identified business goals. Change requests are prioritized and acted upon. Selected users are interviewed and asked to complete random surveys. An autopsy document is created which contains a discussion of what went well, what could have been improved upon and future steps to take to ensure that the system continues to deliver.

#### Ongoing Maintenance and Support

Ingeniasoft resources are assigned and available via telephone and email to assist in problem troubleshooting and repair, and developers are available to provide for minor system enhancements and improvements.



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