

APPLICATION DEVELOPMENT

Case Study

Domain: Imaging Technology

Type: Application Development

*“Software modules for
Optical microscopes
that provide
functionality to
measure and annotate
a saved image”*

Development of software modules that provide functionality to measure and annotate a saved image

A project for a global player in the field of high precision optical instruments; B.A.T. successfully developed software modules that formed a part of various modules plugged in Framework.

Challenge

- Designing of new modules after thorough study of current functionality of the Framework and available modules to provide the required functionality
- **Delivery in short span of time**, as the software release was mapped with the hardware release

Solution

- B.A.T. followed a **fast track approach** with smooth iterative incremental implementation of new software features and full compatibility between the phases
- The new deliverables that were implemented were compatible with previously installed deliverables and also provided means to upgrade from the previous deliverable to the new version

Assessing The Solution:

The client is a leading global manufacturer and supplier of high precision optical solutions based on microscopes and related instruments. The client is located at North America and also offers advanced software and Imaging solutions supporting a wide range of applications in the field of optical microscopy. These products cater to customers from diverse verticals such as life sciences, biotechnology, metallurgy, etc.

B.A.T. assiduously assessed the requirements of the client and recommended a solution of deploying two modules to their existing software for high precision optical instruments.

The customer being a leading global name in the mentioned field, B.A.T. had to ensure that robustness and quality of the development adhering their existing stringent standards.

B.A.T. is equipped with Multidisciplinary skills; the experts of different streams required for the project were involved in the process of software development for perfect and timely delivery. The team included Domain experts, software developers, software testers etc.

Methodology:

An imperative element of this project was the commendable methodology. This entire process from requirement analysis to the final delivery was handled vigilantly and professionally. This process comprised of five important stages and which followed stringent work pattern for the team.

Delivering The Solution:

Client approached B.A.T. for assistance. B.A.T. team assessed the exact requirement of the client and decided to follow “**Rational Unified Process**” (RUP) for successful project management. This handled very well client’s immediate and expected future needs.

The client looked forward B.A.T. as a competent organization having enormous expertise in image processing and sound knowledge of “Frameworks”, to carry out their application development. The process involved development of two software modules which formed a part of various other modules plugged in the Framework. A thorough study of all the previously installed modules, its designs, functionality of the Frameworks, etc. was performed to deliver essential functionalities on time. “Time” was the main constraint in this project, as the software release was mapped with the hardware release.

The application development took a fast track approach with smooth iterative incremental implementation of new software features and provided full compatibility with the existing modules. Every new deliverable of the software that was implemented was compatible with previously installed deliverables or means were provided to upgrade from the previous deliverable to the new version.

Key Technologies:

- Platform: Microsoft .Net
- Environment: VS 2003
- Language: C#.Net
- Rational Tools– Requisite Pro, XDE, Purify-Plus, Robot, Clear Quest and Clear Case
- Other Tools: Perforce, Visual Built Pro, XML 1.0



Stage 1- Requirement Analysis

Due to time constraint the requirements were clear and frozen. The requirements for the software modules were classified as follows:

- Tools used for Measurements- Ruler Line, Rectangle, etc.
- Tools used for Annotation- Line, Arrow, Scale Bar, etc. (*These two steps listed the functionality of the software*)
- Interaction with the Framework
- Use of Commercial off the Shelf Software

Stage 2- Designing

This was an important stage which involved Designing of software. Every minute detail of earlier installed modules were vigilantly reviewed while designing, as this has to be designed in such a way that the new module fits in the Framework as required.

Stage 3- Feasibility Analysis

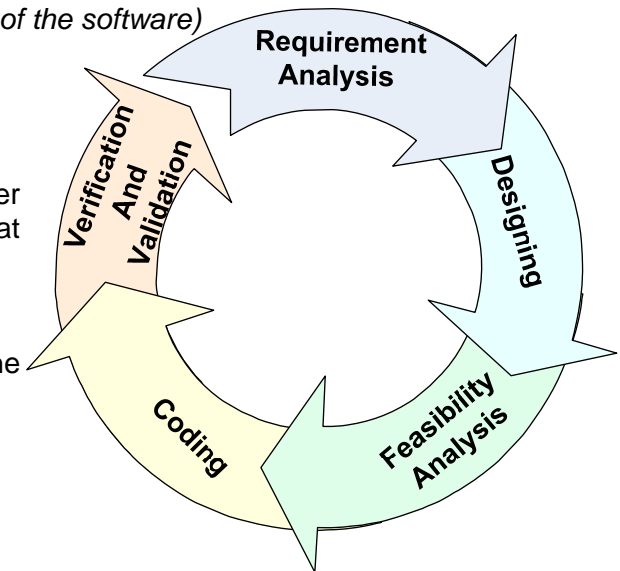
Feasibility analysis was performed for some of the shelf software. After thorough analysis, the preeminent software was finalized for utilization.

Stage 4- Coding

At this stage complete coding was done for the design finalized.

Stage 5- Verification and Validation

The software was verified and validated. All the new software features implemented provided full compatibility with the existing modules and also provided means to upgrade to the new version.



Benefits:

- On-time project completion and the client provided the required functionality as per the Release Plan (coupled with Hardware Release).
- The client fulfilled their commitment to the customer without any major management and resource overheads.
- The expertise at B.A.T. reduced development and maintenance cost for the client.
- OPD model helped client to provide continuous support to their customers globally.
- The client had access to diverse skills under one roof– B.A.T.
- B.A.T. worked as an extended arm to the client, which helped client's team to concentrate on their Core Tasks.