

Sprinting through an SAP Custom Code Upgrade

Delivering error-free custom code upgrade and Unicode enablement with minimal disruption to ongoing IT projects.

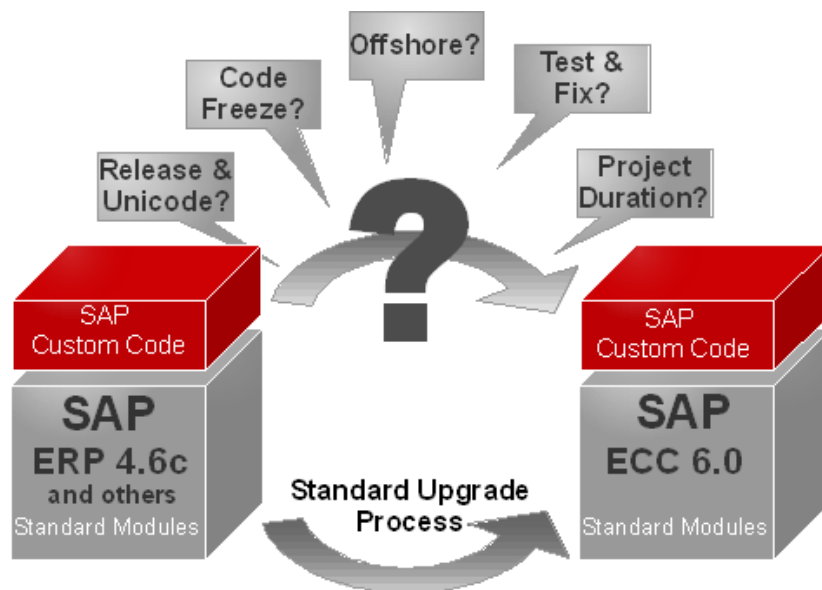
Overview

When planning their largest upgrade in nearly a decade, a U.S.-based Fortune 500 SAP customer turned to smartShift for assistance in upgrading and ensuring Unicode compliance of their SAP custom code. smartShift's tool-based methodology employs source code-level analysis and adaptive, rule-based transformation to deliver optimal automation. The smartShift methodology dramatically reduced the project timeframe and delivered the upgraded code with virtually no errors. The tool provided detailed issue reporting and progress tracking to guide the automated transformation as well as the remaining manual effort. Work on critical IT projects continued in parallel, and was integrated *on-the-fly*, limiting code-freeze time to a few days.

Complexities and Constraints

Challenge

As the project began, the client's IT experts understood that they were under considerable constraints. In addition to upgrading the underlying SAP platform, plan objectives called for conversion and Unicode enablement of their custom ABAP code. Custom code modernization was critical to preserving the functionality of their upgraded applications, and to enable system testing for the entire upgrade project.



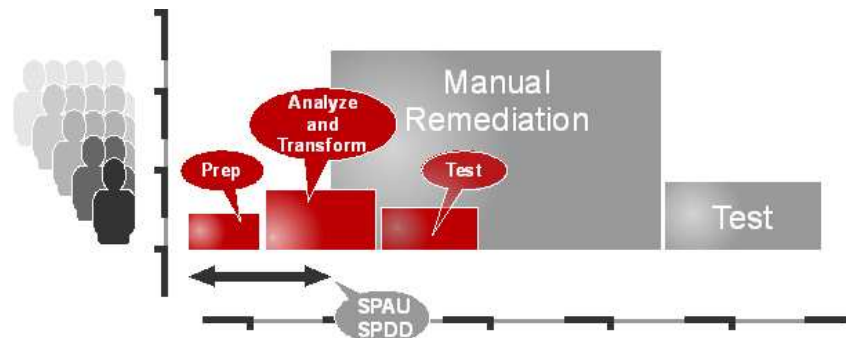
Multiple concurrent development projects in progress added to the complexity; postponing or disrupting these projects was not desirable, so code freezes on the source system had to be kept to a minimum.

Tool-based Methodology Delivers On Time and Under Budget

Solution

To guarantee that they could meet their objectives under the time and resource constraints and business commitments, the client selected smartShift's automated analysis and transformation methodology as their custom ABAP code upgrade and Unicode enablement solution. A manual conversion project encompassing over 6000 custom objects normally consumes dozens of resources over a period of months; with smartShift, the entire preparation, analysis, and transformation process would be complete in only weeks.

smartShift also offered substantial advantages over competing analysis and manual conversion strategies, thanks to its source code level analysis and issue reporting, and configurable rule-based automated transformation. Typical SAP upgrade analysis tools offer only limited, object level analysis of custom code; in



contrast, smartShift's analysis extends to the source code itself. Source code level analysis provides detailed insight into the actual issues within the various objects, not just the number of objects affected by issues. Detailed insight at the source level supports more efficient remediation practices, since issues can be addressed systematically, comprehensively, and consistently.

smartShift's Analyzer for SAP also issues notifications and recommendations for coding constructs which, according to SAP's stated direction, are approaching obsolescence. These code construct issues can be addressed proactively through transformation rules, effectively *future-proofing* the code, while simultaneously applying corporate coding and commenting standards. Thus, smartShift not only preserves, but enhances the value of custom code while reducing the time, resources, and expense required for the overall project.

Reduced Costs and Downtime through Analysis and Automation

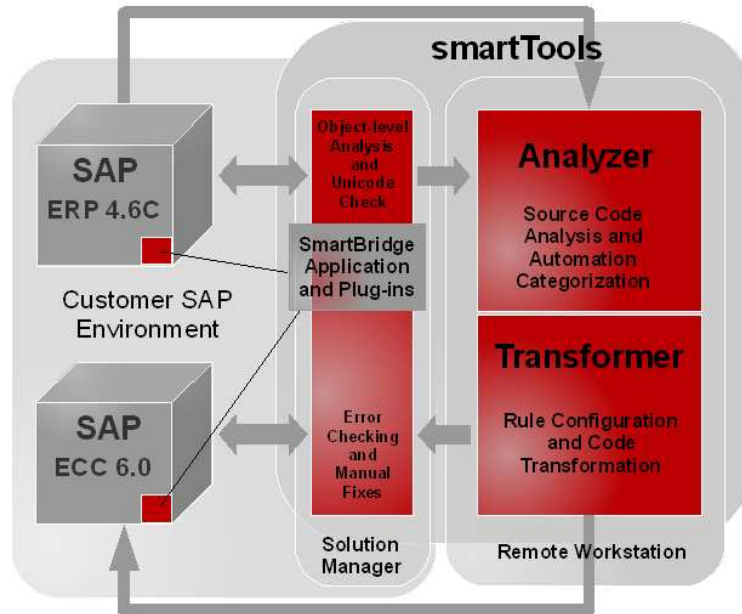
Benefits

Using the smartShift suite, the upgrade team was able to obtain immediate insight into the impact that upgrading would have on their custom code. smartShift Analyzer for SAP's powerful parser quickly categorized the code segments that could be automatically converted, those that required additional client-specific input, and those that required manual intervention.

Previews of before/after transformation and detailed issue reporting enabled the team to accurately determine and quantify the project scope, then iteratively refine the transformation process to dramatically reduce the amount of manual work.

smartShift Case Study: U.S. Fortune 500 SAP Customer

By previewing the issue categorization results and fine tuning the conversion process, the team was able to achieve complete automation of the semi-automatic category code. Manual remediation of the remaining low-frequency, high-complexity cases was then guided by the application's automated coding templates and recommendations produced by the application, which also tracked the manual effort as the project



progressed.

smartShift's configurable tools and iterative methodology enabled the client to apply issue correction consistently throughout the entire code set, thereby ensuring error-free transformation while preserving and enhancing the value of their custom development. Consistent, error-free, rules-based transformation and precise identification of all affected objects also streamlined the testing phase of the project.

Error-free Upgrade Up-to-the-Minute

With smartShift, the client was able to quickly conclude the upgrade and Unicode conversion project. Project preparation, consisting of securing access and configuring the smartShift software, was completed in a week. An additional two weeks was required for analysis and transformation optimization. Actual code conversion, including the required manual work, was completed in just three days, and the resulting upgraded system was delivered free of syntax and Unicode errors.

The smartShift tools and methodology exceeded expectations by delivering in an abbreviated timeframe without freezing code or locking developers out of the system for extended periods. Throughout the upgrade process, development on the source system continued for four concurrent projects. Because transformations were defined consistently in the rule set, new code that was not available during the initial analysis could be upgraded *on the fly*, free of errors and consistent with company standards.

Crossing the Finish Line

Summary

When faced with a large SAP upgrade in a complex environment that included multiple ongoing projects, the client realized substantial benefits from smartShift's automated approach to custom ABAP code upgrade and Unicode enablement. smartShift's combination of source code-level analysis and adaptive, rule-based transformation resulted in a high degree of error-free automation and dramatically reduced upgrade project time, resources and management overhead.

smartShift Case Study: U.S. Fortune 500 SAP Customer

The overall modernization scope was expanded to include implementation of coding standards, naming conventions, and warning-level corrections that enhanced maintainability for the future. Manual conversion was reduced to a relatively minor effort that also benefited from remediation guidance and progress tracking provided by the application. Code freeze was limited to three days, and ongoing projects were able to leverage the modernization progress to upgrade and integrate new code *on-the-fly*.

Project Details

For this four-week project, the smartBridge application (an ABAP plug-in) was installed on the client's SAP Solution Manager to provide communication between the smartShift applications and the client's SAP systems, and to identify the objects for analysis. smartShift Analyzer for SAP and smartShift Transformer for SAP were installed and configured on remote machines to communicate with both the SAP source system running SAP R/3 4.6c and the target system running SAP ECC 6.0.

The initial analysis provided the team with the required information to determine the precise scope of the transformation phase. In a workshop event, the team consulted with smartShift to specify three client-specific transformation rules, as well as naming conventions and coding standards to be applied during the transformation process. Over 7,700 custom ABAP objects required analysis and transformation. Using an iterative approach, smartShift consultants ultimately resolved 96.7% of the more than 70,000 issues (errors and warnings) through automation.

At a Glance

Source Environment	SAP R/3 4.6c
Target Environment	SAP ECC 6.0
Total # of Custom Objects Handled	>7,700
Total # of Custom Code Issues Resolved	>70,000
Total Automated Issue Resolution	96.7%
Code Freeze	3 days

About smartShift

smartShift is a leading international provider of tool-based IT solutions for the enterprise, with an emphasis on modernization of SAP systems and legacy applications.

Our SAP practice focuses on automating the analysis and transformation of SAP custom code. smartShift's SAP offerings create transparency and enable SAP customers to preserve and enhance their valuable ABAP extensions (modifications and custom code) as they upgrade, implement Unicode, and evolve their SAP environments.

Our legacy practice employs exclusive methodologies and tools for migrating existing enterprise applications into new environments while maintaining and enhancing their value, regardless of lifecycle phase or program basis.

Contact:

smartShift Americas
781.218.2663
SAP@smartshiftgroup.com
www.smartshiftgroup.com

smartShift was originally founded in Boston in 1992 as International Integration Inc. (i-cube), quickly becoming a market leader in tool-based IT modernization. Patents and methodologies developed during that era of rapid growth and unprecedented achievement were carried over to smartShift and have developed throughout subsequent years of project experience into the current smartShift portfolio. smartShift is based in Mannheim and Munich, Germany, with international branches in Boston and San Francisco, USA and Hyderabad, India.