Application Modernization with IB-ARM

An Application systems portfolio represents a major investment for an organization. Although application systems represent a major asset that is critical to the day-to-day operation of the business, there are times when applications become prohibitively difficult or expensive to maintain. While budget may not be available for a complete application replacement, modernizing these applications to more maintainable and more cost-effective platforms is often the best option for cost-conscious application managers. Such modernization efforts often lead to lower long-term application maintenance costs

Application Modernization Challenges

Application managers often consider application modernization when:

- Sun-setting and replacement is not an economically viable option
- Core functionality is solid and continues to satisfy requirements
- New business requirements / functionality are inhibited by existing application architecture or made extremely cumbersome.

Typical challenges and pain points related to application modernization are:

- Need to understand application structure, architecture and design
- Limited reliable systems documentation of inherent architecture and functionality
- Need to reduce learning curve of new staff.

Types of Modernization Projects

There are many ways that applications can be modernized:

- Service Oriented Architecture (SOA) enablement – re-architecting application functions as services to allow more effective reuse of software functions.
- Re-platforming – used for applications residing on hardware or software platforms that are no longer supported or no longer fit the corporate architectural strategy.
- Consolidate or rationalize applications – an application portfolio often contains multiple applications providing duplicate or overlapping functionality. Rationalizing this duplication results in lower long-term maintenance costs.

Modernizing Applications

The desire to reuse and unlock software assets is a key driver for organizations. There is huge value locked in legacy systems and an enormous benefit to reusing that software via modernized applications.

IB-ARM assists in the modernization of applications using the following steps:

Step 1. Understanding Existing Applications

IB-ARM has helped many clients to understand their existing applications. These applications are often older, built with legacy technologies and key staff knowledgeable about the applications have often left the company. BUT these applications still deliver significant business value and could deliver even more value if re-structured using modernized architectures and platforms. These applications must first be understood in order to be migrated to new platforms.

IB-ARM assists modernization efforts by:

- Providing a complete inventory of the current application and its components. IB-ARM provides coverage for a wide range of technologies using its 80+ proprietary parsers.

- Providing details of interfaces to other applications that may / may not be involved in the modernization
- Providing assessments of the quality and complexity of existing applications including measurements of code complexity, function points, duplicate, dead and unreferenced code
- Providing analysis capabilities for understanding the impact of proposed changes.

Step 2. Modernization and Migration

Development projects are undertaken to migrate to new platforms and technologies based on a solid understanding of the current applications. Key steps for these migrations are:

Identify Candidate Migration objects

Based on the type of modernization, IB-ARM provides assistance in the analysis of system modifications.

For SOA enablement projects, IB-ARM automates the process of extracting starting point business services from current code based on application / business knowledge and / or documentation. Extraction can be based on any pattern such as:

- By component type – maps, programs, messages, files, database tables
- By naming standards
- By data accesses – file or database access
- By screen access – sends / receives.

For a consolidation project, it is important to identify functionality locked in applications. IB-ARM automates the process of extracting starting point functional specifications from current code based on any pattern such as:

- By code constructs – paragraphs
- By data accesses – file or database access. A read / select may start a function; a file or report output may end a function
- By screen access – sends / receives
- Combination of patterns.

For a re-platforming project, a key is the identification of software that is dependent on specific technologies:

- Platform-specific code
- Database-specific access methods
- Interfaces to other applications.

IB-ARM identifies these candidate application components to allow analysis of the components that need to be modified as part of the modernization effort. IB-ARM provides

- Search – powerful search facility is used to determine where changes are required. Search works across all applications, all source code types and includes system and business documents that have been included in the repository.
- Understanding application structure – IB-ARM contains several views that provide insight into the structure of applications to assist in the design of software changes.
  - Relationships view – provides first level impact analysis. It details direct and indirect relationships to selected software components.
  - Structure diagrams – call trees, dependency diagrams and inheritance diagrams provide a visual representation of the flow between programs, jobs and classes. Flowcharts visually describe the internal structure of programs.
  - Data Access view – used to understand where database and file objects are being used in the application.
- Extended Search - provides extended impact analysis. It details a concise trail from data fields and database objects to programs, screens, jobs and other components that use the data objects. Often extended search is sufficient to understand the flow of components that will be impacted by a data change.
- Detailed Impact Analysis – program changes often involve changes at the field or variable level. Impact analysis allows the impact of these changes to traced and summarized. This facility provides a detailed analysis of a field level change through multiple levels of programs.

New Application Architecture

As new functions and services are developed and integrated into the application software, IB-ARM is used to capture and map the up-to-date state of components and their relationships. This provides a basis for measuring progress of the modernization effort. Perhaps more importantly, IB-ARM provides a method of documenting and organizing the new functions and services and their usage for ongoing maintenance and development

Measure Coverage and Progress

IB-ARM has assisted clients in this stage by measuring the progress of application development. By doing periodic refreshes during development and comparing against the previous snapshot, management can assess the progress of the development project against plans.

Step 3. Ongoing Maintenance

IB-ARM has helped many clients in maintaining their application portfolios both before and after development efforts. It is particularly important to capture application documentation developed during a modernization project. This information is critical in the ongoing maintenance and enhancement of the application. It is especially critical if a significant portion of the development was outsourced; the re-patriation of the application support is much smoother when a solid base of application knowledge is provided within the IB-ARM repository.

About Information Balance, Inc.

Information Balance, Inc. develops software solutions to support large scale application development and maintenance practices across mainstream technology platforms. Its flagship product **Application Road Map (ARM)** is a unique Application Portfolio Management (APM) solution. The company's clients include leading financial services, insurance, telecommunications and retail organizations across North America.

For more information, please call 416-962-5235, e-mail infobal@infobal.com, or visit our website at www.infobal.com.