DIR Technology Forum 2017
October 17th

Application Modernization to Cloud
New Life for Legacy IT Systems
Modernize by building on the functionality embedded in your core systems that run the heart of your business.

An incremental approach can reduce risk and maximize your investment by focusing effort on system improvements rather than trying to reinvent what is already working.
Many organizations across industries struggle with modifying their core systems to support business demands, handling maintenance requests, and updating aging applications.
APPROACHES FOR MODERNIZING YOUR APPLICATIONS

FOUR approaches to mix as needed

AUTOMATED REFACTORING
(modernize core system)

CUSTOM DEVELOPMENT
(re-engineering)

TRANSFER
(someone else’s custom)

PACKAGES
(COTS / MOTS)

FOUNDATIONAL PROJECT ACTIVITIES

IT Governance

Application Lifecycle Management (ALM)

Analytics and Reporting

Cybersecurity

Project Management and Testing

Maintenance and Operations
DRIVERS TO MODERNIZE TO CLOUD

Cost Efficiency
- Lower capital expenditure
- Pay for what you use
- Repair & maintenance savings
- Software and license purchase savings
- Physical space savings

Increased Speed to Market
- Highly automated-easy/fast deploy
- Ability to combine & create customized services instantly
- Scalable services and applications

Aging Hardware and Outdated Software
- Legacy assets that are prohibiting agencies to add and extend the features

Efficient Infrastructure Mgmt.
- Cloud computing virtualization technology can increase the utilization percentage of resources owing to time sharing
- Collaborating/sharing made easier between disparate offices, remote workers, and suppliers
- Reduces companies consumption of energy and need for multiple data centers

Support Growth
- High fluctuation or unknown of demand, requiring ability to scale quickly
The cloud model covers four levels of scope and three delivery models.

### Cloud Scope
- **Business Outcomes**
- **Services and Applications**
- **Middleware**
- **Application Hosting Platform**
- **Operating System**
- **Servers, Storage, Network**
- **Facilities / Monitoring / Support**
- **Infrastructure as a Service (IaaS)**
- **Platform as a Service (PaaS)**
- **Software as a Service (SaaS)**
- **Business Process as a Service (BPaaS)**

### Cloud Delivery Models
Companies can be all-in on cloud without being 100% cloud, they can mix and match based on needs. In each option, data can be as (or more) secure than it is with on-premise options.

- **Public**
- **Private**
- **Hybrid**

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THE PROCESS
Starting with an assessment and detailed analysis of your systems, create a roadmap and set priorities for how modernization can effectively serve your business.
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- CODE DIAGNOSTICS AND ASSESSMENTS
- FUTURE STATE ARCHITECTURE AND TECHNOLOGY NEEDS
- SECURITY, RISK AND PRIVACY
Starting with an assessment and detailed analysis of your systems, create a roadmap and set priorities for how modernization can effectively serve your business.

- CLOUD ECONOMICS
- SELECT SUITABLE CLOUD MODEL
- DETAILED MIGRATION ROADMAP
Starting with an assessment and detailed analysis of your systems, create a roadmap and set priorities for how modernization can effectively serve your business.

**APPLICATION MODERNIZATION TO CLOUD LIFECYCLE**

- **ASSESS CURRENT STATE**
- **DEFINE FUTURE STATE**
- **ASSESS APPROACH VIABILITY**
- **CREATE ROADMAP**
- **IMPLEMENT AND ITERATE MODERNIZATION STEPS**
- **MAINTAIN AND OPERATE**

- PERFORM AUTOMATED REFACTORING
- IMPLEMENT DEVOPS
- OPERATE & PERFORM ONGOING BUSINESS MODERNIZATION
Automated refactoring sets you up for future business improvements and efficient, cost effective operations.

**MODERNIZATION ASSESSMENT**

- Ready for cloud?
- Good fit for refactoring?
- Positive ROI indicated?

**SYSTEM CODE AND ASSESSMENT**

**AUTOMATED REFACTORING**

Specialized tools and techniques refactor...

- User experience
- Code
- Data

**MODERNIZATION**

...Enabling the business platform to be modernized with changes to...

- Rules
- Workflow
- Mobile
- Cloud
- Security
- Analytics

**OUTCOMES**

...So organizations can...

- Serve customers
- Operate more efficiently
- Stay competitive
- Win in the market
- Meet new legislative standards
FULLY AUTOMATED REFACTORING
A unique approach to migrate legacy technologies to cloud, saving time and reducing errors.

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>EXAMPLES OF LEGACY TECHNOLOGY</th>
<th>REFACTORED TO CLOUD</th>
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<td>User experience</td>
<td>3270</td>
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<td>Code</td>
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<td>NATURAL</td>
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<tr>
<td>Data</td>
<td>VSAM</td>
<td>ADABAS</td>
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Once refactoring of your core systems is complete and deployed to cloud, we open the door to modernizing business functions and driving innovation into other components of your systems.
Impact

**FASTER IMPLEMENTATION**
The system’s 700 screens, 3,000 code modules, and 120 ADABAS files were refactored in two years.

**IT STAFF SKILL TRANSITION**
Existing IT staff trained on tools to maintain the new Java platform and started using Application Lifecycle Management (ALM) tools.

**SYSTEM UPDATES CONTINUED**
Developers continued to make updates to the legacy code during the automated refactoring project.

**MINIMAL END USER TRAINING**
Training requirements were minimal for the new system since the refactored system mimics the mainframe system functionality.

**SYSTEM MAINTENANCE SAVINGS**
Hardware & software savings year on year.

**MODERN REPORTS**
Business users gained the ability to develop and filter structured reports specific to the report user in a modern graphical format.

Application Modernization pilot ready for system test in 6 weeks, production deployment in 6 months
APPLICATION MODERNIZATION IN ACTION: LARGE RETAIL CLIENT

ISSUE
The organization’s core systems rely on legacy mainframe cobol based applications limiting their ability to respond to market demand and resulting in higher infrastructure costs.

SOLUTION
Automated refactoring of the legacy application to a Java based modern architecture running on the Google Cloud Platform (GCP).

IMPACT
Applications on the newer platform allow for rapid changes to meet market demand. The organization now has the ability to meet seasonal consumer demand by utilizing dynamic scaling on cloud.

Application Modernization to the cloud accomplished in 18 months.
APPLICATION MODERNIZATION TO THE CLOUD SUMMARY

PROVIDES A CLEAR PATH TO THE CLOUD USING AUTOMATED REFACTORING

LOW RISK APPROACH

ENABLES FUTURE BUSINESS MODERNIZATION
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