Progress Legacy Modernization

By Arun Sikri, Rajinder Kamra and Prabhu Jha

In a world where technology enables most organizations to deliver essential business services to customers, employees and partners, the application portfolios and the age of the apps play a very crucial role. While the Progress platform has been adopted by many companies over the years, today, these organizations are looking to modernize the applications running on it, to bring them on par with new age web and mobile-enabled apps.

In this white paper we will examine the solutions that can ease the task of modernizing Progress legacy applications, enabling them to match the rapidly changing business needs of companies.
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Introduction

In the earlier days, you might have been comfortable working with Progress technology, as it was adequately supporting your business needs. At that time, Progress technology was synonymous with benefits such as the lowest cost of ownership, platform reliability, high productivity and a self-managed database engine. In the past 5-10 years, however, owing to the storm of technological advancements such as Cloud, Social Media, high speed Internet, etc., the Progress platform has fallen behind. The situation has been further complicated by the fact that now, your customers, dealers, partners and vendors have become more demanding.

While even a few years ago, it was fine to have an order system which allowed the addition/deletion/modification of an order (and possibly a bit of EDI), this is not sufficient today. Your partners, dealers, distributors and customers now need to be able to add/modify the orders directly in your system. Though this can speed up your application and ensure accuracy, you need to have an open architecture and publish the web services to be consumed by dealers, distributors and customers. Only modernization can help you do this successfully!

According to research and advisory firm Gartner, organizations spend almost 70-80 percent of their IT budgets on maintenance. This too is optimistic and in reality, their spend on maintenance may well be as high as 90 percent. This hardly leaves any resources for innovation, fulfilling new business requirements and responding to dynamic market conditions.
It is becoming apparent that organizations now need to standardize, modernize, consolidate and Nexus-enable their application portfolios as part of their future application strategies. The challenge however is that most companies are stuck with their legacy portfolios.

You however, can break this cycle by modernizing your legacy application. Even if you start modernizing your application with say 20 percent of your IT budget, you will begin reducing the IT spends on the maintenance of the application. You can use this cost saving to further modernize the app and achieve benefits far quicker than you anticipated.

Ironically, the more you delay modernizing your applications, the more difficult it will become for you to address this issue in the future. The influx of applications on the legacy platform and increased maintenance spending are likely to leave you with a smaller budget for new initiatives.

Therefore, it is important for you to understand how you can plan your modernization strategy. You need to know how you can, with minimal investment, enable your Progress-based business applications to deliver value that is on par with what modern web-based distributed applications provide.

**The Business Drivers for Progress Legacy Modernization**

**The high maintenance cost of the legacy platform:** As it becomes old, the legacy Progress platform becomes difficult and costly to maintain. This is owing to the fact that the old technology cannot keep pace with business demands and as more tactical development takes place, it adds to the support burden.

**Lack of skilled resources on legacy systems:** As the technology becomes less popular, manpower too becomes a major issue. Technical engineers prefer working on the latest technologies that help them better their career prospects.

**Obsolete architecture:** The inflexible 4GL architecture of the older versions of Progress will prevent you from web enabling and integrating your application with newer mediums like the browser and the mobile.

**Increased time to market:** Any new development effort is costly and time consuming owing to the detours that have to be taken on the
architecture and technical fronts, the paucity of skilled manpower and the high deployment effort involved.

**Risk of an unsupported Progress version:** If your organization is running an application on the unsupported version of Progress (say a version older than 9.1E or 10.2B), it will magnify “a disaster waiting to happen”. If anything goes wrong with your application, you are unlikely to get support. This will place your business at very high risk. The cost you will incur in recovering all the damages is simply too high to imagine.

**Options for Modernization of Progress Applications**

Progress applications have been typically developed in the era when web development and the Internet were still in their formative stages and not used extensively. Although old and monolithic, they carry useful business logic. Extracting the value of knowledge and logic embedded within these applications can not only be challenging but also costly in some cases. A well-formulated decision mechanism is therefore required to evaluate the modernization of the applications, keeping cost, time and future business objectives in perspective.

The following figure defines some of the primary technological objectives of modernization:
Your application could be a monolithic, client server one (which does not support the web), with a Character User Interface (which does not provide a good user experience). Or, it could be sequential (where if you need to change the customer limit, you have to pass through several screens to arrive at the customer limit screen). Your app could be non-scalable (does not support load balancing which is a critical factor for performance if your user base increases) or simply not be able to meet your business objectives. In all these scenarios, you must consider modernization as your top priority. Your objectives to modernize may be any or several of these factors. However, once you complete your modernization journey, you will have an application that is web-enabled, mobile-enabled, event-driven, scalable and geared up to meet your changing business requirements at a fast pace.

Progress application modernization is different from general modernization since Progress as a platform is still active and cannot be ignored during the modernization process. It is therefore important to outline the options that must be considered while modernizing a Progress application. Also, the existing investment in legacy applications should be leveraged to meet the current and future business demands.

The options for modernization of Legacy Progress applications are:

<table>
<thead>
<tr>
<th>Platform Upgrade</th>
<th>Technology Migration</th>
<th>Cloud PaaS Migration</th>
<th>Cloud aPaaS Migration</th>
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<tbody>
<tr>
<td>Migration of Legacy Systems from older unsupported versions to newer supported versions</td>
<td>Migration of Legacy Systems to newer widely accepted technology solutions</td>
<td>Porting applications to the Cloud Platform Service</td>
<td>Re-engineering Legacy applications on selected Cloud aPaaS Solution</td>
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**Figure 2 Progress Legacy Modernization Options**
1. Legacy Platform Upgrade
2. Technology Migration
3. Cloud Enablement
4. Cloud aPaas Migration

**Legacy Platform Upgrade**

Applications built on Progress have a distinct advantage in comparison to other traditional legacy systems such as the mainframe or Cobol. Progress, as an organization, is still functional. It is still ensuring that the platform remains alive and is continuously upgraded. This provides you with an opportunity to move on to newer supported versions of Progress.

Progress’s OpenEgde platform offers you a chance to migrate older, unsupported, terminal screen, client-server application versions to a centralized, web-enabled architecture.

There are various parameters to consider when upgrading your legacy platform. You must look at whether:

- The migration is driven largely by technical needs or new demands on the business front.
- A tactical approach has been considered that allows the continuity of status quo and keeps modernization costs at a minimum.
- There is a well-defined technology direction for the modernization of the legacy applications.
- The unsupported user interface, sequential, older and closed architecture are hindering the interaction of your application with the IT systems of your partners.

Moving to the newer Progress OpenEdge platform with some re-architecting and use of the appserver/transaction server/broker can make web and mobile-enablement a possibility. It can additionally reduce much of the pain associated with traditional client-server (Character User Interface/Graphical User Interface) applications.

The legacy version upgrade can pack a lot of punch into the business application with many associated components from Progress Pacific. Here are some interesting points to note:

- In the new advanced version of Progress Developer Studio, you can develop, test and deploy the Web based UI.
- Developing mobile apps has become quite easy in the new Studio. Progress gives you the option to ‘develop once and run anywhere’.
Generating native apps for the iOS and Android mobile platforms is seamless for applications.

- If you require frequent and fast changing rules in the business application, then Progress provides you with options to separate the business rules from the ERP or any Transaction Processing System. Corticon is the right option for you, where you can create thousands of rules and expose them as web services. The sophistication of creating, testing and simulating the rules with options such as duplicate and conflicting rule check and deployment to access as RESTful API, is a big positive.

- The Cloud-based intelligent reporting solution EasyL can use Datadirect to connect to many data sources and create/share/store/ and distribute reports with real-time data from various sources.

**Technology Migration**

Technology Migration for Progress applications is a broader term that encapsulates a number of paradigms that depend on various drivers. If you are looking at the possibility of keeping modernization costs to a minimum, Re-Using existing business logic tops the options in this category.

**Re-Use and Re-Engineer**

A legacy application is usually considered unstructured and unorganized, offering few opportunities to integrate with new applications. However, this may not be completely true for Progress applications as there may be an opportunity for Progress business logic to coexist with newer web applications or the UI. JKT therefore looks at Re-Use and extensions in most cases of Progress application modernization projects. This is a good approach to follow in scenarios where:

- The existing Progress business logic is still useful and written with a certain degree of modularity.
- The integration of Business and UI is possible through the adoption of the principles of distributed application design.
- The creation of a new web/mobile enabled UI layer using .Net or Java along with a variety of new responsive front-end technologies such as HTML5 is achievable while keeping the underlying Progress layer intact.
Doing this is an effective way of utilizing years of investment in legacy Progress development while bringing in the advantages of new age applications to meet your e-business objectives.

In cases where the underlying legacy application has no chance for Re-Use and integration due to an overtly poor design and code, JKT recommends re-engineering and re-building the application. If you are keen to remain with Progress, there is some chance of Re-Use. If you are migrating to .Net, there is no chance of Re-Use.

**COTS Product Implementation**
The traditionally closed business processes of ERP and CRM solutions written on legacy Progress need to be opened up owing to the changing ways of doing business. COTS products provide viable options to replace legacy systems in some cases. The major reasons for you to decide in favor of a COTS solution implementation are as follows:

- There are major changes needed to existing business processes and the identified COTS product can do this out-of-the-box, without customization.
- Organizations like the standard business processes provided by COTS and can change their own processes with ease.
- If your base legacy application is very poorly designed and integrating or Re-Engineering it is a costly exercise.
- The COTS solution is considered to be more cost-effective in the medium- to long-term, depending on the business case.
- It provides a more flexible, open platform for further enhancements.

**Cloud Enablement**
The Cloud provides you with a good opportunity to modernize your ailing infrastructure and platforms for Progress applications that are otherwise serving well with their business processes, features and functionality. Traditionally, the Cloud enables you to offload the creation and maintenance of data centers, thereby reducing IT’s dependency on internal assets. With the introduction of Cloud services by Progress, and a bouquet of offerings getting available under Progress Pacific alongside other options, the Cloud has become a reality for the Progress community. These are the Cloud computing options that Progress offers:

- Progress Arcade PaaS which enables existing 10.2 and above versions of Progress applications to run on the Progress Certified
Cloud. Since Progress provides the flexibility of procuring client licenses, it is a good fit where there is sudden upswing and downswing in the number of end users

- Amazon Web Service AWS PaaS, which enables the deployment of any version of Progress applications on the Amazon Cloud. This becomes a viable option for Cloud deployment in case the client licenses for the target version are already procured, and a need arises for scalable hardware and an operating platform.

**aPaaS Migration**

aPaaS (Application Platform as Service) is a new entrant in the modernization arena and capturing the attention of user organizations. The way conventional application development and deployment is undertaken may soon become a thing of the past. With distributed teams and resources it makes even more sense for you to go for aPaaS-based development and deployment environment.

Progress now provides two aPaaS platforms you can choose from:

- Progress Pacific Rollbase aPaaS which enables Re-Engineering and migration of applications to a new Cloud-based aPaas solution. It is a high productivity, rapid application development platform that allows the creation of a Progress-based application on the Cloud that can be integrated with on-premises solutions using Progress Datadirect.

- Node.js on Modules, which is a high control application development system available as a Cloud-based aPaaS solution. Supported by the large Open Source community and daily contributions from developers, Node.js a rich platform for creating complex applications. The Mongo DB with a native connector or connections through Datadirect can offer you seamless connectivity with your choice of a Big Data solution and RDBMS system. Getting your Facebook and Twitter data analyzed by developing high control map-reduce jobs and having them channeled into your business decision making has been made easier by Modules and Progress.

Legacy Modernization of old applications needs to be assessed in the context of various important influences. You must take into consideration all factors and dynamics while embarking on your modernization journey. You also require a well-conceived framework to assess your technical and business priorities and options for modernizing legacy applications.
# Key Benefits and Risks - Various Modernization Options

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<th>COTS Migration</th>
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<td>• Low on cost, time &amp; resources.</td>
<td>• Low CAPEX</td>
<td>• Best of the both world if UI in .NET/ Java/ HTML5.</td>
<td>• Established and time tested solution.</td>
<td>• Cloud based development and deployment.</td>
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<td>• Move to a supported Version.</td>
<td>• Works best where there are spike and valley in application usage.</td>
<td>• UI migration is relatively low cost high gain option with maximum reuse of BL.</td>
<td>• Various implementation options with templates, accelerators and enablers.</td>
<td>• Flexible Licensing.</td>
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<td>• Possibility of Web and Mobile UI enhancement.</td>
<td>• Free-up your IT resources.</td>
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<td>• Future proof your application.</td>
<td>• Optimal utilization of resources.</td>
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<td>• Hardware and OS switch (if doing) can increase time, cost and complexity.</td>
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<td>• High on cost, time and complexity.</td>
<td>• Vendor lock-in.</td>
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<td>• Inadequate business process testing on target platform.</td>
<td>• Security on public cloud (application and data).</td>
<td>• Business process mapping and changes.</td>
<td>• Skill availability.</td>
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<td>• Complexity of integration with other enterprise systems.</td>
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## JKT’S Framework for Legacy Modernization

A well-formulated framework for legacy migration establishes the means for any organization to evaluate its existing setup and take an informed decision for modernizing its legacy platform. JKT’s Legacy Modernization Framework facilitates technical decision-making, enabling you to set the pace of migration, and adopt relevant methodologies and solution accelerators for migration.
Figure 3 JKT Framework for Legacy Modernization

Mapping business objectives, continuity of service, time-to-market and costs for modernization, remain the most key aspects of modernization projects. JKT’s mature framework-based approach towards legacy modernization allows you to leverage our years of experience on modernization initiatives along with tools, techniques and methodologies uniquely constituted for reducing cost and increasing efficiency during migrations.

Our framework allows us to evaluate your business and technical factors, assess the value of your existing legacy systems, build a strategic business and technical approach for modernization and guide you through an end-to-end migration process.
Our numerous marquee clients have benefited from our simple, yet effective approach to modernizing Progress applications using the above framework. Checklists developed over the years for evaluation and value assessments allow our teams to come to guided conclusions on situations, thus benefiting the overall initiative.

In our opinion, any modernization journey should start with evaluating the business factors first so that you can determine the ROI down the line. Detailed business value expected from various business factors needs to be considered before you take the modernization step. Technical factors and associated technical value can only be taken into account after the business factors have been assessed. Once the strategic organizational decisions have been made, you can go for the technical decisions, selecting from the various modernization options open to you. Migration should be a well-planned program that is broken into various projects for a successful and non-disruptive rollout.
Conclusion

Progress applications need special consideration during modernization initiatives owing to the active presence and logically relevant upgradation options provided by Progress Corp.

Integration and Re-Use is a very real and important option for modernizing Progress applications, even when you are choosing to implement new age web and mobile user interfaces.

The Cloud enables you to upgrade aging infrastructure and roll out version upgrades. Progress has developed good options on Cloud platforms that should be evaluated along with other popular platforms.

The aPaaS platform from the Progress Pacific product umbrella should be considered as a next-gen modernization solution, as it brings you the best of both worlds—a Cloud-based platform with high productivity and a high-control application development solution.

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JKT is a global IT services and solutions provider covering the entire software lifecycle and employs over 1000 top-class technical specialists. We help customers solve technological challenges and create unmatched value. For more information, please visit: www.jktech.com or write to us at tsmarketing@jktech.com

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