

PROGRESS CONSULTING SERVICES MODERNIZATION BLUEPRINT

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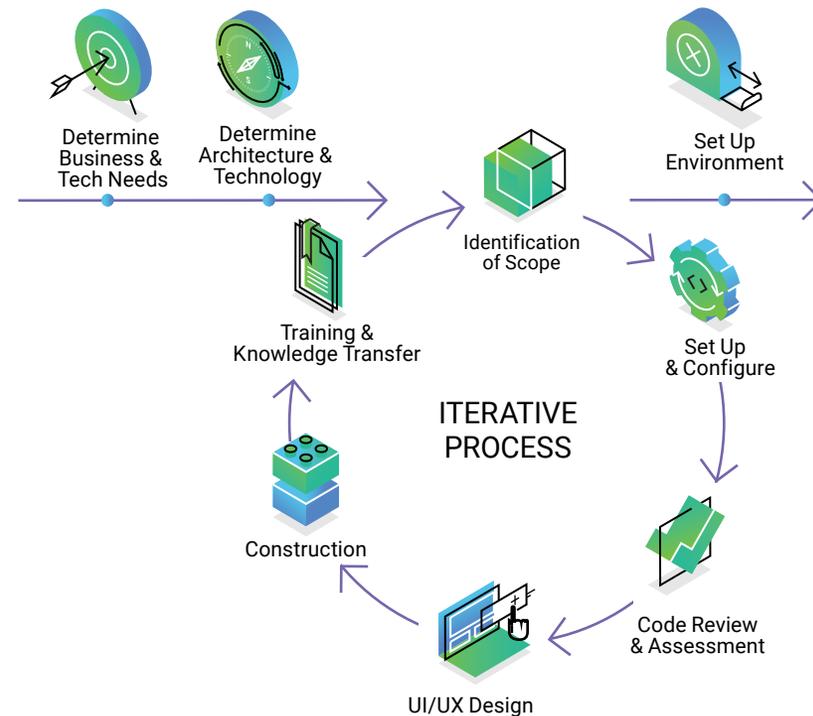
Introduction

This whitepaper documents the primary components of the Progress Modernization Engagement, which we call the Progress Modernization Blueprint. The business and technical benefits of modernization have been proven time and time again. Modernization not only minimizes hardware, development, training and deployment costs, but lessens risk with far fewer disruptions to your business.

We take an iterative approach to your modernization project, working side by side with you to determine business and technical needs, and what architecture and technology best suits your objectives. The Blueprint is broken down into three components.

- 1. Modernization Assessment:** determine how Progress can facilitate the activities required to modernize an application to meet business goals
- 2. Proof of Concept:** demonstrate the prescribed approach and what the final result could look like
- 3. Modernization Project:** an iterative approach to define the level of Progress participation in the execution

From introductions of key stakeholders, to an overview of the expected development process, to Progress' role in the project's execution, the Progress Modernization Blueprint will guide you through each step of your modernization project, ensuring an end result that brings maximum value to your business.

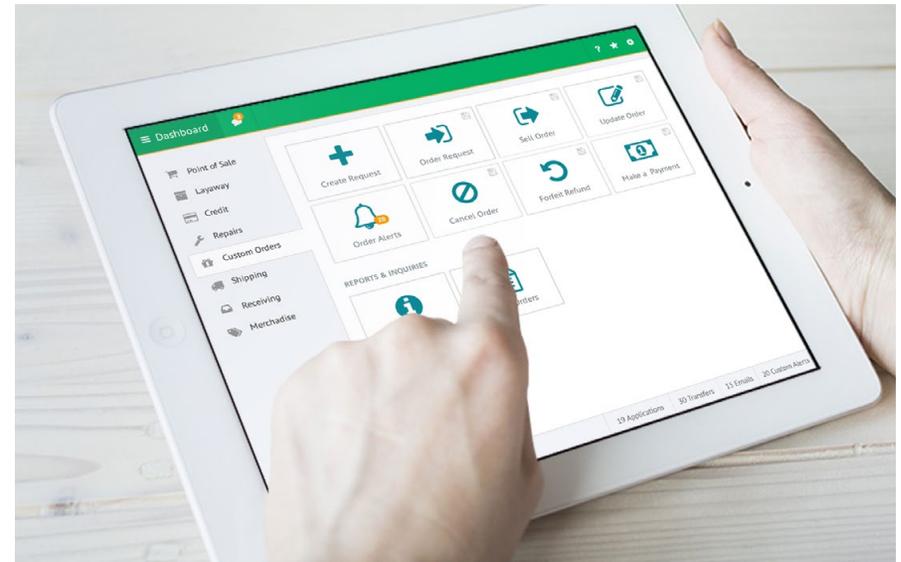
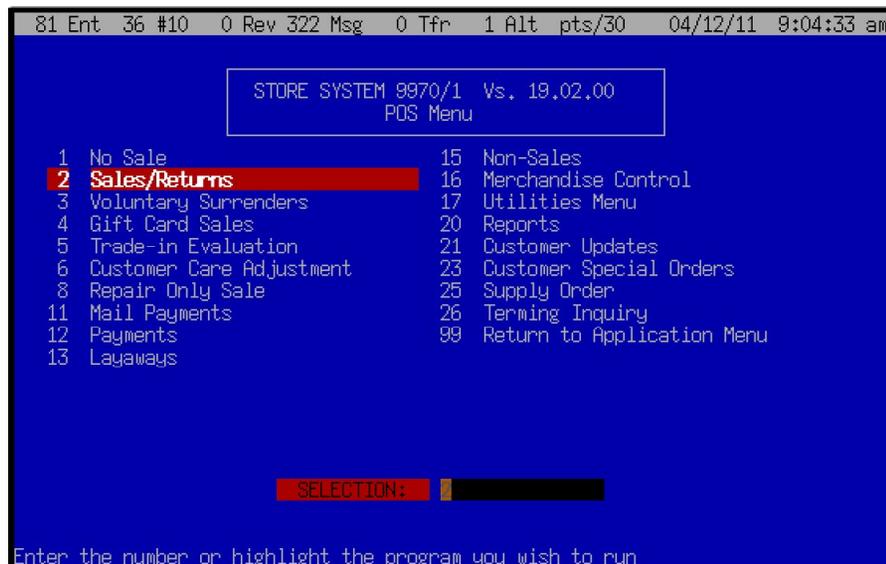


The Definition of Modernization

Modernization can be defined in many different ways. Taking a character, GUI or HTML1 application and migrating to a modern web-based HTML5 platform is one popular example. However, adding a mobile app to your solution, BPM or Progress Corticon® Business Rules Management System, also falls within the guise of modernizing your application. For the purposes of this whitepaper, the focus will be on the process of adding a modernized UI like Telerik® Kendo UI® or perhaps a Telerik mobile app to your product portfolio.

A common goal of modernization is to extend your application and not replace it. Why not continue to retain the value of your application that has been created and fine tuned over time? The existing business rules have enabled you to differentiate yourself from the competition. Modernizing your application will minimize hardware, development, training and deployment costs. This approach lessens business risk and can be done in a way that your business operations will be minimally disrupted.

Before and after a modernization engagement:

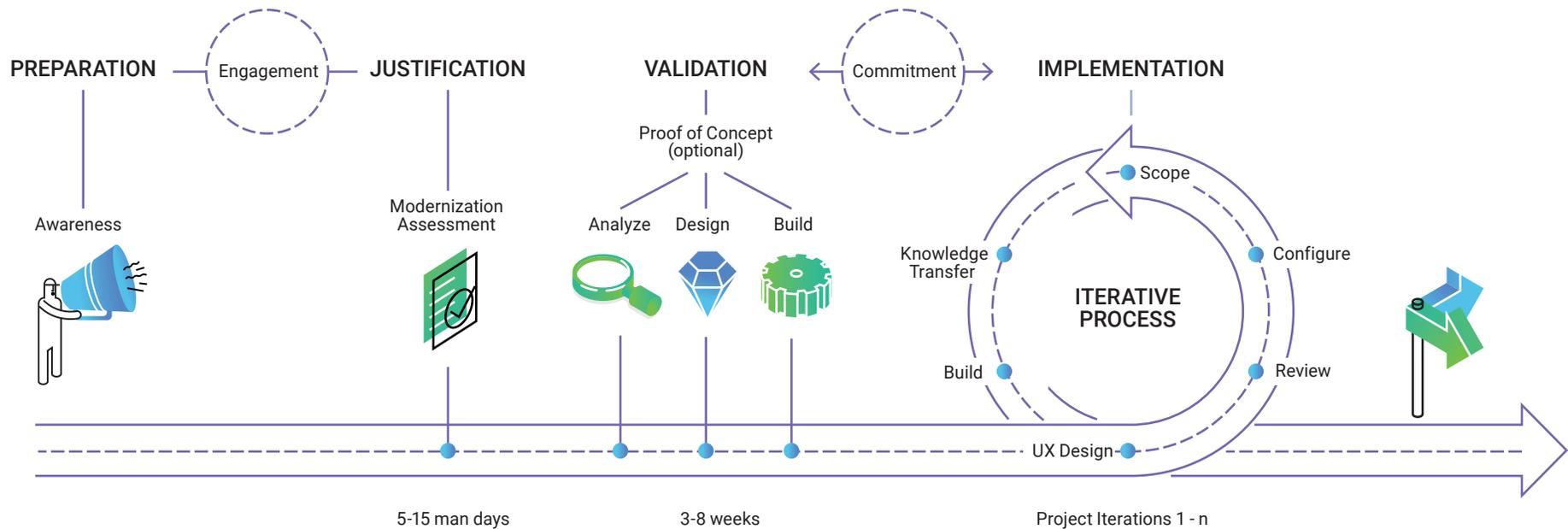


The Progress Modernization Blueprint Consists of Three Major Components:

- 1. Modernization Assessment:** Determine how Progress can facilitate the activities needed to modernize an application to achieve the desired business goals. The Assessment Phase may be sold/delivered independently of the Modernization Project. In some cases, an Assessment may be needed before the business can move forward with modernization. In other cases, the Assessment can be delivered as a component within the Proof of Concept or pilot project. Based on the varied needs of our customers, our approach is flexible enough to satisfy the specific needs of large and small customers, partners or direct end users.
- 2. Proof of Concept:** As an optional next step, a Proof of Concept (POC) can be organized. The POC will demonstrate that the prescribed approach will indeed work and what the final result could look like. The deliverable is based on the scope defined during the Modernization Assessment. The POC should be meaningful, i.e. solve a problem the business must resolve. Once the POC is delivered, the next step is developing a project plan for the overall modernization project.
- 3. Modernization Project:** To the extent that the business requires, Progress will take responsibility, assisting and mentoring on the analysis, design, development, testing and deployment of the functionality defined in the overall modernization project. This is an agile, iterative approach based on business drivers.

Application Modernization Assessment

The objective of the modernization program is to empower clients to modernize their applications using the preferred Progress stack, including solutions from Telerik for client-side user interfaces and the OpenEdge Reference Architecture (OERA). This document describes how these technologies and architecture can enable customers to build and deploy state-of-the-art, enterprise-class applications using a “best practices” agile approach.



Modernization Assessment Details

The formal Modernization Assessment may require up to 15 days. The time will depend on the functionality defined within the particular iteration of the overall modernization project. Initially, the tasks begin with the preparation and definition of an agenda to create a Modernization Charter document. This will require involvement from Progress, customer stakeholders and subject matter experts.

During the Charter document creation, activities will include:

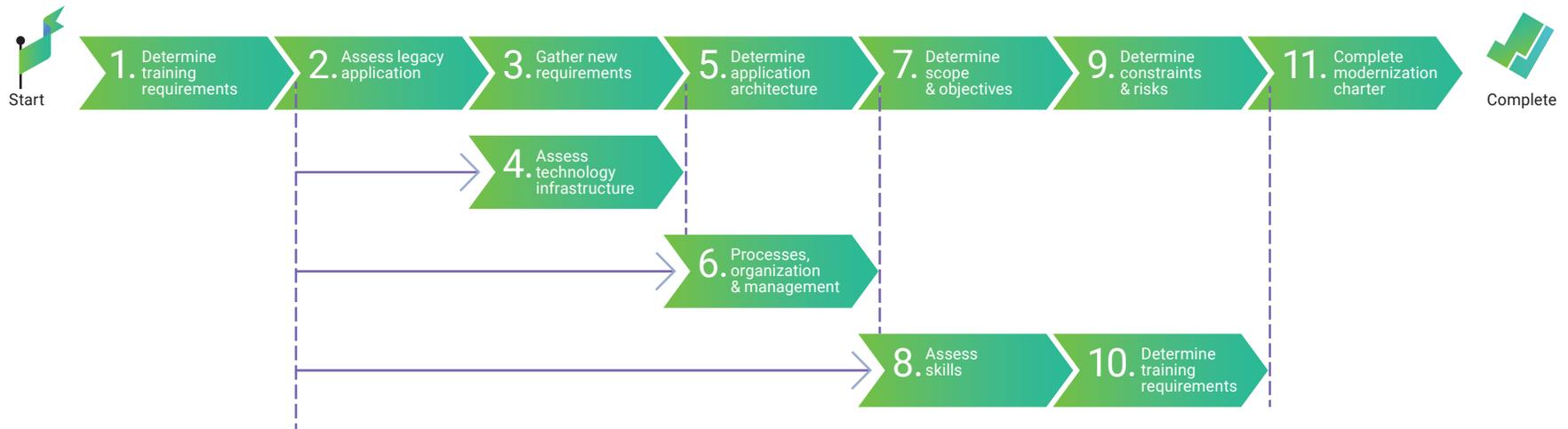
- **Understanding the business model** and assessing business requirements
- **Conducting an inventory** of current and future technology requirements
- **Assessing the legacy application** and high level impact analysis of the above
- **Assessing existing roles and skills** of the development team
- **Determining the approach and scope** of the modernization project
- **Developing the Modernization's Charter** definition and content

Assessment Approach

The Assessment phase encompasses the following activities:

- Define and document the overall goals and scope of the project; business and technical as well as current and future. Areas to be covered include but are not limited to:
 - Business goals in relation to technology, strategy and organization
 - Technical goals in relation to application, enterprise and extended enterprise
 - Timeframe to deploy issues and contingency plans
- Conduct a technology inventory of the existing application or design for the new application. Existing documentation may be reviewed, including data models, entity relationships, process/functional flows and overall development history.
- Review and assess the organization; covering, but not limited to:
 - Organization structure
 - Roles and responsibilities
 - Skills and competencies

ASSESSMENT TASK FLOW



- Conduct a high-level technical application assessment of the current application in regard to n-tier distributed architecture and desired technical solution. Areas that will be covered include, but are not limited to:
 - Business functionality
 - Architecture
 - Data model
 - User interface (standards, design, types of users)
 - Integration with other systems
 - Business logic processing
- Determine Modernization POC (optional) and/or project scope, risks, constraints and approach, including functionality milestones for each of the first few iterations.

The goals of the Assessment include, but are not limited to:

- Provide an initial roadmap on how to modernize an application using new architectures and technologies.
- Reduce time-to-deployment by harvesting, if desired, as much as possible from the existing application using best practices.
- Advise how to accelerate the adoption of application design principles and methodologies within the development team through mentoring and best practices.
- Train and implement a knowledge transfer plan to make customer staff self sufficient throughout the modernization project.

- Provide a collaborative work environment to share ideas and thoughts with experienced Progress experts and further encourage knowledge transfer of proven development techniques among customer teams to enhance application development.

Assessment Deliverables

Progress will develop and present a final document called the Modernization Charter, which includes at a minimum the following sections:

Modernization Charter

- Executive summary
- Scope and objectives
- Modernization project approach
- Preliminary modernization project plan
- Preliminary high definition user interface mock-ups
- Business overview
- Current technology
- Application overview
- Preliminary requirements detail
- Requirements and success criteria for POC (optional)

Modernization Approach



POC – Pilot Project

Note that the six steps described below may not be needed for each iteration of the project. For example, Set up and Configure may only be needed one time depending on the infrastructure and development/deployment environments. Furthermore, training and mentoring will probably not be needed for each iteration, but may be conducted within random iterations based on resources and business needs.



Identification of Scope

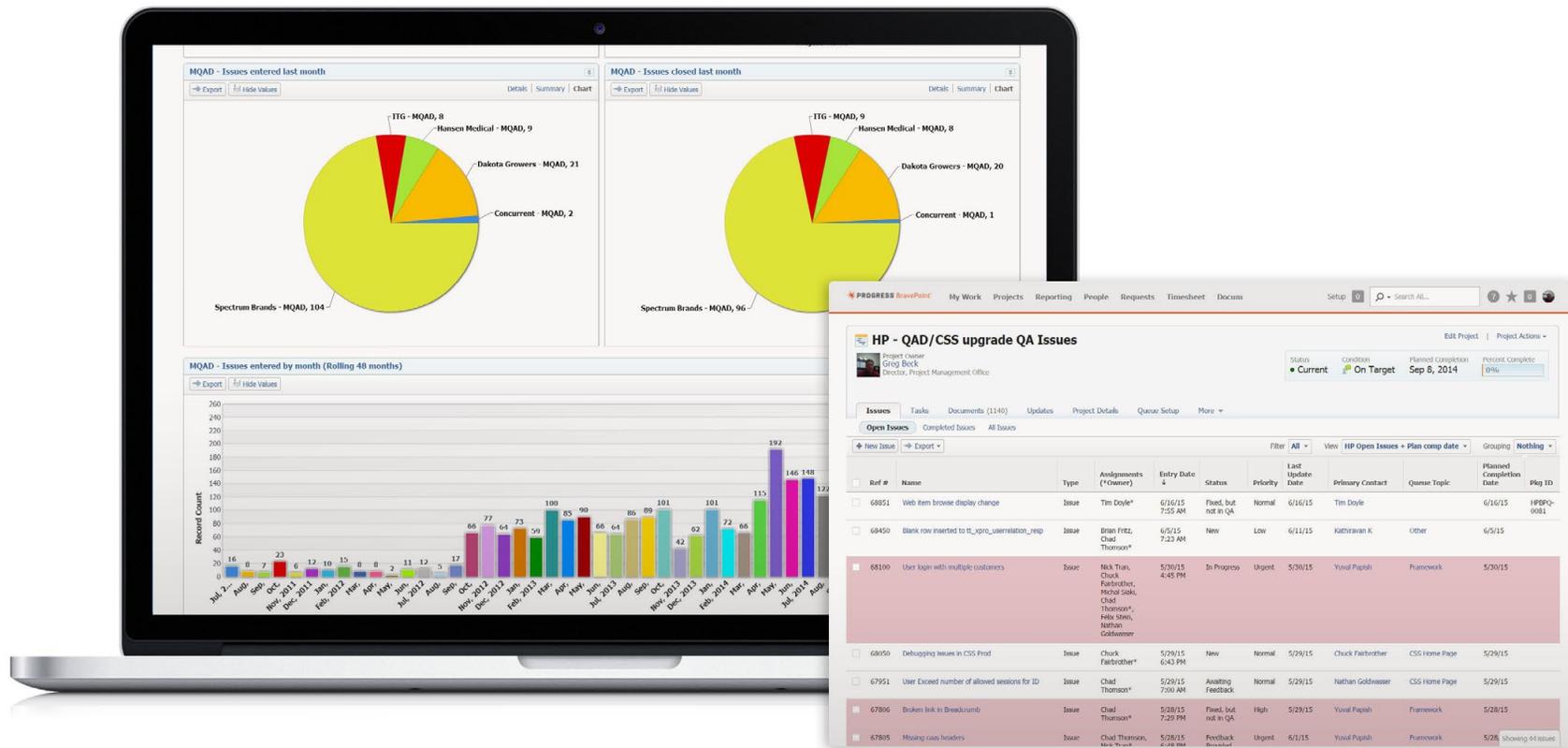
Scope identification is very important in that it is the first opportunity to “deliver the promise” of modernization. Ideally, we would target functionality that is highly visible. In other words, create a quick win with a much needed modernization module. However, identifying the specific scope should not be overly aggressive. Too much functionality will introduce too much risk. For example, Order Entry is probably not a good candidate for the POC. The POC should be completed within eight to ten weeks.

A key aspect in determining scope is the challenge of harvesting code. The legacy application must be analyzed to determine what if any business logic must be re-packaged and the best process to complete the harvesting. Candidates for code harvesting are key business logic components that differentiate the business. In other words, calculating “best price” is usually a key company differentiator. This logic may have been developed over many years and there may be a strong desire to use the same pricing algorithms. As a result, this would be a good candidate for code re-harvesting.

Once the code is identified, it must be re-packaged in such a way that it can be called from the modernized application. This usually involves removing the user interface dependencies in such that the code module

(method) can deliver and consume temp tables and ProDataSets. A project manager and architect own this step. The deliverable is a project plan that identifies tasks, owners, milestones, effort and dates.

The project plan is entered into WorkFront, an online project portal where all stakeholders will have online access to collaborate for the length of the project.





Set Up & Configure

Set up & Configure – REST and Modernization Framework*

The first step in the POC or project is to configure the REST adaptor and Modernization Framework. This may need to be done in multiple environments: development, test and production. Completing all three environments during Phase I is not recommended. This may take one to two days. Once the modernized OpenEdge environment is installed, testing will be conducted to insure that all of the architectural components are working correctly. Depending on the customer's requirements, IT staff may be trained on the components of the architecture at this time.



Code Review and Assessment

This task is to review and assess the legacy code that pertains to the POC functionality that has been decided upon.

Primary goals include:

- Identify code that pertains to the POC
- Evaluate business logic within the applicable procedures to identify patterns in code where harvesting is desired
- Identify and document any gaps between existing logic and logic desired during the iteration

- Identify procedures that are no longer needed because of framework functionality, such as CRUD, Security, or Managers
- Establish patterns for posting and packaging result sets

By this time, decisions have been made about role ownership within the project. At the very least, the customer's Subject Matter Experts (SME) must be available to facilitate navigation through business rules and requirements.

In some cases, the customer may decide to take ownership of delivering and packaging the server-side business logic. In these scenarios, there will be some mentoring and coaching to define a best practice approach so that all resources are working together as efficiently as possible.



User Interface/User Experience Design

The goal of this phase is to create a high definition simulation that details the desired UI/UX and workflow. This gives stakeholders the opportunity to visualize the resulting application and generate support for the new application before work has even begun. This exercise will also aid in obtaining end user buy-in. End users typically resist change; getting end user input early will insure that incorrect assumptions are not being made concerning usability and productivity.

End users who participate at this phase of the project will be much more willing to become early adopters if not application champions.

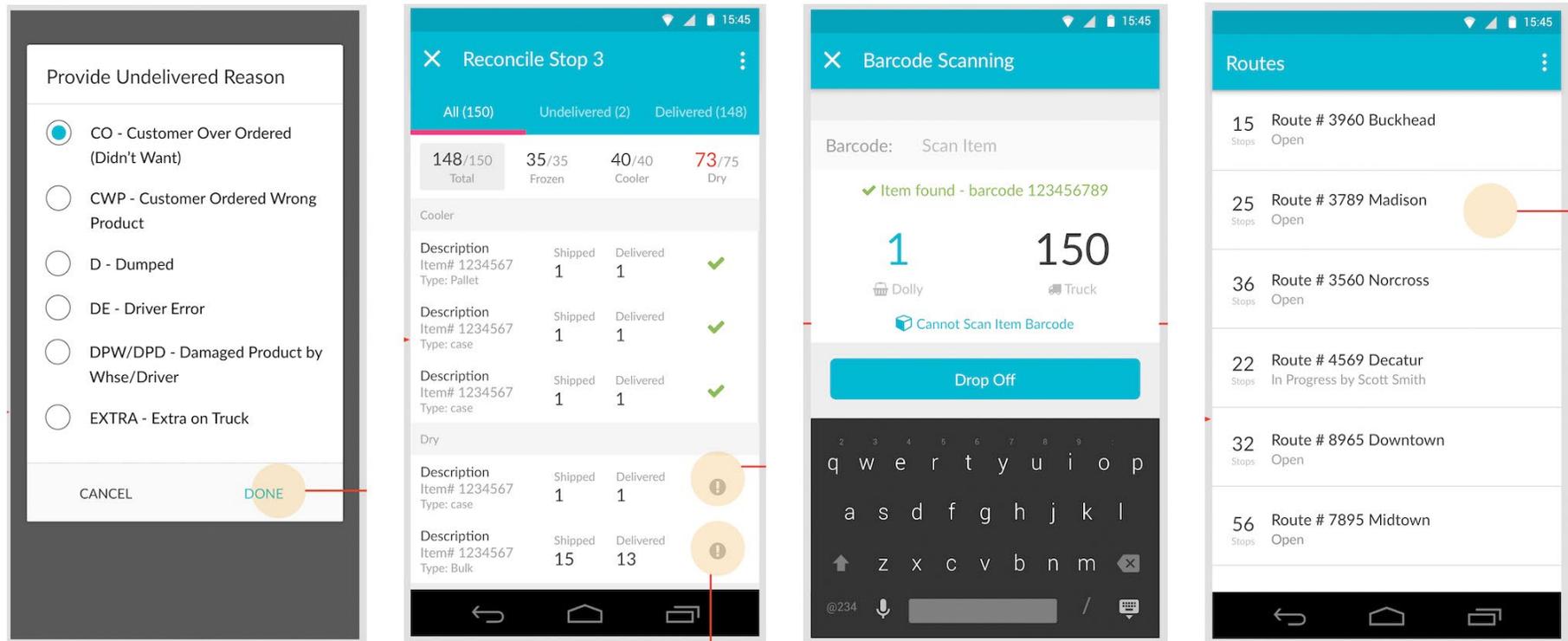
Added value considerations for good UI/UX design include:

- Increased user satisfaction
- Increased adoption
- Reduced training
- Increased productivity
- Reduced development cost

Examples of UI/UX Artifacts: Wireframing

During the discovery phase, the current workflows were analyzed which resulted in the identification and elimination of redundant steps. At the same time, the iterative wireframing process was continued. Sketching a number of low fidelity wires on paper, multiple iterations resulted in more high fidelity wireframes using Omnigraffle.

By keeping the wireframes simple, the focus remained on the content and the overall goals of each screen.

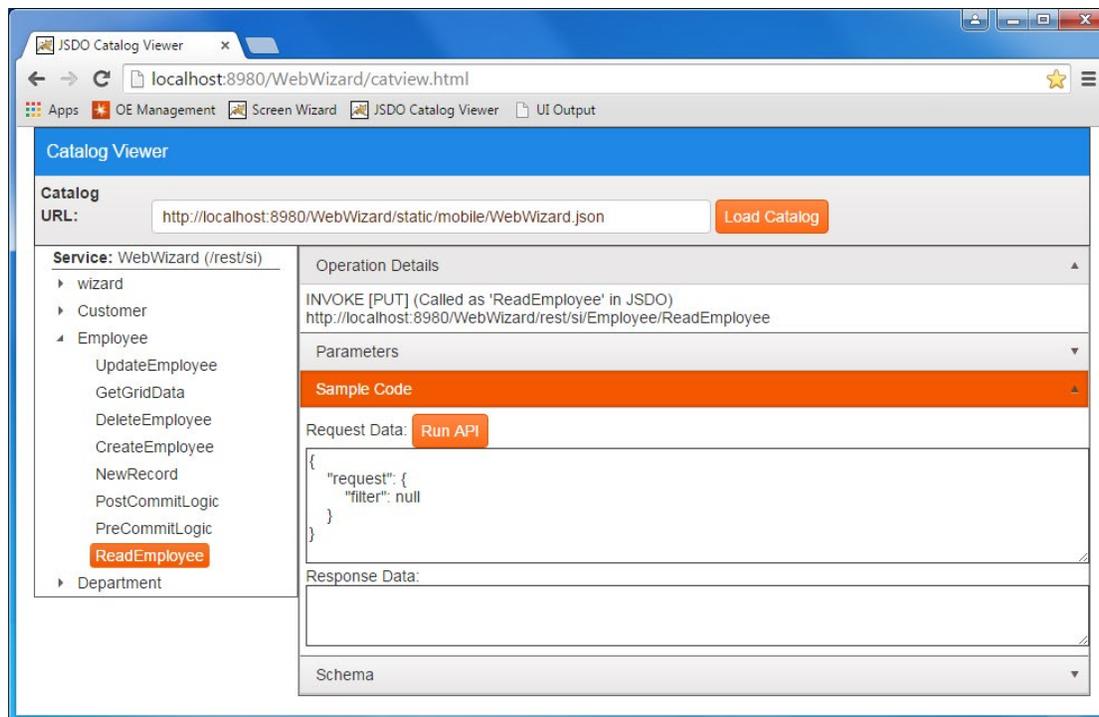




Construction

Based on the code assessment, customer skills and business need, the construction phase commences. Communication in this phase is very important. The project is done in partnership between Progress and the customer's IT department. It is highly recommended that all team members meet daily early in the project. As the project evolves, the meetings may be scheduled at appropriate intervals. It is also recommended that key customer stakeholders participate in weekly or biweekly meetings to ensure that the company goals stay on track as gaps are identified and functionality is created.

Progress has created an Application Program Interface (API) Viewer which enables client-side developers and server-side developers to work independently of each other. This catalog ensures that the appropriate method calls are being made with the appropriate signature, and the required results are defined and known by all team members.





Training/Knowledge Transfer

Training is optional based on the customer's goals. The amount of training, curriculum and timing are all contingent on customer needs. Training curriculum may include:

- Progress Developer Studio for OpenEdge (PDSOE)
- JavaScript training (Angular/Kendo UI)
- OO ABL
- Modernization Framework training
- REST installation and maintenance training
- Code harvest best practices

Knowledge Transfer

Knowledge transfer is also optional based on the customer's goals. The amount, type and timeliness of knowledge transfer are contingent on the skills of the customer's staff and their long-term development goals. If the customer desires to take the project over in its entirety, a detailed plan for knowledge transfer is extremely important so the IT staff can continue future iterations interdependently and with confidence.

Phase II: Next Iteration

Begin the process of reiterating steps outlined above for the next phase. In all cases, the project team will learn more within each iteration. Mistakes will be made and should be expected. The key is to learn from the mistakes and become more productive as a result.

It should be noted that the team should become more productive within each of the subsequent iterations. There will be a familiarity with the reusable user interface templates. Similarly, code patterns on the server will be identified which will enable more productivity during business logic development.

Summary

The business and technical improvements of modernization have been proven time and time again. Consider the example of the time and expense reporting app cited earlier in this document. The modernized app with a new UI reduced the time to enter time and expenses by 60%, resulting in savings of over \$100,000 annually. Improvements to the existing business logic not only reduced the number of data entry steps, but resulted in increased end user satisfaction without any disruption to the business.

Successful modernization projects require an iterative approach, working side by side to determine business and technical needs, and what architecture and technology best suits the objectives of the business.

Learn more

To learn more about the Progress Consulting Services Modernization Blueprint, please contact your Progress Modernization Specialist at **888-874-1880** or visit www.progress.com/corticon.

About Progress

Progress (NASDAQ: PRGS) is a global leader in application development, empowering the digital transformation organizations need to create and sustain engaging user experiences in today's evolving marketplace. With offerings spanning web, mobile and data for on-premises and cloud environments, Progress powers startups and industry titans worldwide, promoting success one customer at a time. Learn about Progress at www.progress.com or 1-781-280-4000.

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