CATALYST UX

A GUIDE TO UPDATING YOUR LEGACY SOFTWARE

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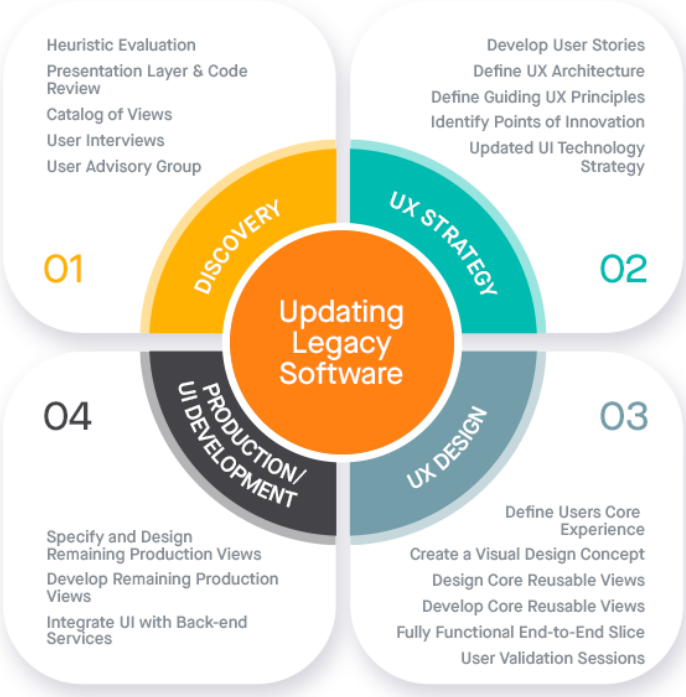
Every legacy application reaches maturity. If you're like most companies, when this happens you'll probably avoid investing in a major update. Perhaps you're concerned about costs or upsetting the status quo. Yet doing nothing also poses risks, like lost revenue and lower productivity.

There's no better time than the current economic slowdown to revamp your legacy applications. Companies that stay active during these periods are more likely to come out on top as soon as the economy is back on the upswing. Investing in a UX upgrade can be the difference between staying competitive or falling behind.

If you're concerned about the costs of updating your legacy software, keep in mind that the potential ROI for a UX/UI project is huge. Organizations that routinely focus on improving UX/UI typically earn $10 to $100 for every dollar they invest.



Steps to Updating Your Legacy Software

So what are you waiting for? Now's the ideal time to unlock your data and business intelligence by undertaking a journey of digital transformation. In this guide, we'll show you the steps—in each phase from discovery to development—for making this happen.

PHASE 1: DISCOVERY

Step 1: Complete a Heuristic Evaluation

The starting point is understanding how well your current software stacks up. We like to use a heuristic evaluation. This step involves gathering a small group of evaluators to examine your software's interface and judge its compliance with recognized usability principles ("heuristics"). This type of quick evaluation provides valuable feedback for identifying usability issues—often at a relatively low cost.

Catalyst UX can guide you through the process of conducting a heuristic evaluation. At the most basic level, the process will entail identifying a list of heuristics, selecting evaluators, and then running through a series of evaluations and debriefs.

Step 2: Review Your Presentation Layer Technology and Code

The presentation layer contains the components that implement and display the user interface (UI). It also manages user interaction. During this step, programmers find and eliminate mistakes before any new UX development is undertaken. At this time, doing a code review is also good practice. Streamlining the backend ensures this project, as well as any future projects, will be accelerated.

Step 3: Create a Catalog of Views

An application is a set of interfaces that users interact with. Each interface has a different value and usage. And they all work together to meet a central goal. Before you can update a legacy application, you first need to understand all of these interfaces. Cataloging all the views in the current application essentially means building a master list that will help UX designers focus and understand what the core interface of the new product is.

Step 4: Conduct User Interviews and Establish a User Advisory Group

Every UX project needs to understand end users. This is typically accomplished with interviews or surveys. Ask users exactly how they use the current software. Dive deep into how well the software meets their needs, performs specific functions, any workarounds, and the time they spend on important tasks. You want to know how the software fits within their requirements, as well as where it is falling short. At the same time, make sure to reach out to IT teams that maintain the software.

Also consider creating a user advisory group. This team of subject matter experts can provide valuable feedback and reviews throughout the user-centered process. Their input can include information about users and tasks, knowledge of the existing application, and review of new designs.

PHASE 2: UX STRATEGY

Step 5: Develop and Organize User Stories

Identifying the user stories for your UX project is an important part of the design process. Stories enable designers to empathize with users and generate ideas that fit into their lives. Ask questions like: Who is the user? What is the user's goal when using your product? Why is a feature important to them? How will its functionality help them achieve their goal? After developing these stories, organize them into key work areas, user scenarios, and required tasks.

Step 6: Define UX Architecture

Good UX architecture creates an experience that allows users to focus on their tasks, not on finding their way around. To make this happen, you'll need to define optimal flows and journeys based on user stories. User interactions should be so well-designed and intuitive that they are effortless. Ideally, users simply touch, read, scroll, and interact on an optimized journey to task completion. Make sure that when you're working with complex workflows you start from a very basic and functional flow and add new layers of complexity iteratively.

Step 7: Define Guiding UX Strategies

When it comes to UX strategy, guiding principles provide you with a framework for overcoming challenges and solving problems. For example, they can include a particular sequence of activities, like “mobile first.” As you’re defining your project’s UX strategies, strive to be as specific as possible. At Catalyst UX we’ll work with you to identify these strategies and share examples from our previous work.

Step 8: Identify Points of Innovation

Now that you have your UX strategies, user stories, and UX architecture, you’re ready to identify the most promising points of innovation. A point of innovation might be a new way of solving a problem or making a process better. It could also be a new type of user interaction. For example, perhaps there’s new technology that streamlines the way users can interact with your software. Once you’ve identified the point of innovation, you’ll want to develop rough concepts to validate this approach with target users.

Step 9: Define Your Updated UI Technology Strategy

Shaping an application’s user experience requires discipline. In this phase, you’ll define your UI technology strategy, which should address a mixture of user needs, business vision, and technical capabilities. At Catalyst UX, we work with clients to define the optimal UI technology strategy using a 14-point model (see below).

Points of Presence

1. Desktop	2. Tablets	3. Smartphones	4. Anticipated Resolution
Web-based evergreen browsers	Responsive HTML Application/ Progressive Web App	No planned presence on smart phones	1024/768 responsive up to 1200x1600 pixels for access on desktop and notebooks

Presence Tier

5. Core UI Technology	6. Development Pattern	7. View Composition	8. Hybrid Container	9. UI Control Libraries
HTML, JavaScript, Css Angular	MVVM / Component	Angular	N/A	Kendo, Prime NG, TBD

10. Fundamental Unit of Design + Code Resuse	11. Build Resources	12. Management of Business Logic	13. Data Exchange Format	14. Data Operations
Responsive UI panels and components	Angular CLI	Server side via REST API	JSON	Server side

PHASE 3: UX DESIGN

Step 10: Define The Users' Core Experience

The core experience is the foundational journey that your users value. Understanding the core experience helps you to generate ideas for an ideal user experience for your redesigned application. It also allows you to map the ways various experiences relate to one another. Using this key insight, a UX team can easily know the context for even the smallest interactions they create.

Step 11: Create a Visual Design Concept

Based on Guiding UX Design Principles, a design concept is the big picture idea that makes decision-making easier. A visual design concept includes the overall design intent as well as every other design aspect—from the early schematic designs all the way through construction. It provides direction for everyone on the project team. During this step, you will generate multiple concepts and refine them into a final concept.

Step 12: Design Core Reusable Views

A design system is composed of numerous reusable views and components. These views are modular and can be repeatedly reused to build any number of applications. In a typical application, there are anywhere between eight and 16 views. In this step, you'll design and develop the reusable views that make up your application's core experience.

Step 13: Develop Core Reusable Views

After you have designed the core reusable views you'll want to develop them. As we said before, UI code is based on reusable UI panels, and is modular and reusable. This phase often includes an end-to-end fully working model based on reusable views.

Step 14: Develop a Fully Functional End-to-End Slice

Think of your application as a multi-layer cake. Typically, developers want to work on only one layer at a time to get each layer right. But this doesn't allow users to experience an entire user story from start to finish. In this step, you'll develop a fully working end-to-end slice. This slice will be based on the updated UX design and will leverage the chosen technology architecture. It will result in a fully implemented version of a small number of working views.

Step 15: Hold User Validation Sessions

At the end of each sprint, we recommend soliciting regular and ongoing user input and validation. For regulated products, such as those in medical and life science or those requiring FDA approval, you'll want to design and conduct formative and summative studies as well.

PHASE 4: PRODUCTION UI DEVELOPMENT

Step 16: Specify and Design Remaining Production Views

Before the production release, you'll want to create the specifications for the remaining views. Catalyst UX does this based on a unified UX design system.

Step 17: Develop Remaining Production Views

Based on user-validated UX designs, the team will code remaining production views within the chosen technology.

Step 18: Integrate UI with Backend Services

Next you'll complete integration of UI to backend services. This may require refactoring of services for optimal performance.