



## Enterprise Design Patterns: User Interaction Capabilities

**Design Pattern Scope:** This document provides high-level guidance on a common set of current and future capabilities available throughout VA that enable consistent user interaction. These capabilities help projects develop web applications or leverage portals in standardized ways. The capabilities also support a client-independent set of functionality separately consumed and rendered through both client platforms and devices.

**Current State:** All VA projects are required to develop applications using responsive design technologies, which are mandated through the TRM and the VA Enterprise Technical Architecture Compliance Criteria. These applications allow clients to interact with a server in an asynchronous fashion so minor updates do not require a full refresh of the website. These applications are called "single page applications" because they generally fit onto a single web page. They leverage browser-independent application frameworks and libraries (e.g., jQuery) that use the client for local processing, leading to faster processing speeds and improved server performance.

**Design Pattern Solution:** The future state of user interaction capabilities consists of a complete phase-out of legacy applications mixing presentation and business logic. All applications will leverage industry standards (HTML5, CSS, JavaScript) and frameworks to separate presentation and business logic. Additionally, the use of enterprise portals will provide seamless access to Enterprise Shared Services (ESS). There will also be continuous evaluations of new technologies for inclusion in the TRM.

**VA projects face a reoccurring challenge connecting web-based applications to disparate enterprise resources, including ESS.**

VA addresses this challenge by separating concerns between the user interface, request processing, and business logic, resulting in improved testability and time to market. These applications use industry standard technologies including "web technologies" (Hypertext Markup Language 5 (HTML5), Cascading Style Sheets (CSS), and JavaScript) to maximize user interactivity and responsiveness.

**This Enterprise Design Pattern aligns with VA's overall IT strategy for supporting "any device, anywhere, anytime" for VA patients, customers, staff, and partners through modern applications.**

Modern applications integrate with collaboration services and leverage a standard set of user interaction capabilities aligned to industry best practices. VA will provide these capabilities through the following near-term activities:

- Migrate "thick client" applications with tight coupling between presentation and business logic to "thin client" applications (e.g., HTML5) that have separation between presentation and business logic
- Institutionalize enterprise portals with a common visualization for users
- Mandate use of approved frameworks and libraries in the Technical Reference Model (TRM) for all new web applications
- Evaluate emerging frameworks and libraries, and approve their use in the TRM depending on usage trends and industry acceptance

What are Enterprise Design Patterns?

Reusable templates that guide the enterprise to implement a set of technologies in standard ways

How do Enterprise Design Patterns relate to the Enterprise?

Enterprise Design Patterns translate OI&T's strategic goals, as documented in the Enterprise Technology Strategic Plan (ETSP), into "real world" direction to guide system design

How can I learn more?

To learn more about Enterprise Architecture Enterprise Design Patterns, contact Joseph Brooks (Joseph.Brooks2@va.gov)

To read the full document, see the TS website:  
[www.techstrategies.oit.va.gov](http://www.techstrategies.oit.va.gov)

To ask questions about Design Patterns in general, reach out to [AskTS@va.gov](mailto:AskTS@va.gov)