



**The Path to Service-Oriented  
Business Applications  
of the Future:**

*OpenEdge® Statement of Direction*

**March 2006**



## The Path to Service-Oriented Business Applications of the Future: OpenEdge® Statement of Direction

For over two decades, Progress Software has maintained a singular focus – to simplify the job of creating the world's best business applications. Today more than 2,000 Application Partners and 60,000 customers use our database and development tools to translate their industry-specific expertise into powerful, cost-effective applications for 3,000,000 users worldwide. While our goal has never changed, new application development technologies has accelerated. The ubiquity of the Internet, advances in networking technology, and the growth in integration requirements present a challenge to today's developer: How to develop real-time business solutions expressed as re-usable, configurable services without diluting the rich functionality and high productivity that Progress Software partners and customers have enjoyed for many years.

Building applications twenty years ago was relatively simple, but not especially efficient. Applications were monolithic and executed a single set of business processes, tightly bound to the needs of individual users executing particular business tasks. It didn't matter if the same business logic was often re-coded across applications. Integration? It wasn't even an expectation; data was simply re-keyed into other applications, if at all. Application development was costly. Applications ran on expensive hardware, and any application enhancement took months.

For Progress Software, making application development easy meant providing maximum portability and flexibility, assuring that our database and tools ran consistently on every major platform on the market. Our language and database capabilities provided all the flexibility needed to create any application, but with a productivity and reliability that was second to none. We met our goal of making application development, deployment, and support as easy as possible for our partners and customers.

The introduction of client/server computing in the early 1990s greatly accelerated the development and deployment reach of business applications. With the proliferation of cheaper desktop computers, networking and UNIX-based servers, client/server enabled greater deployment flexibility and a boost in overall application performance. Again, Progress Software met these requirements by enabling n-tier, distributed computing with the Progress® OpenEdge™ Application Server. The Application Server provided a simplified way to deploy and run business logic written in the Progress Software Business Language on higher-performing server systems, often the same machines hosting the database. As a result, reduced networking overhead meant stronger ROI, and application performance improved dramatically.

Though a significant advance, client/server computing provided no real breakthrough to the state of new application development. Applications remained essentially single-purposed, with logic tied to the user interface. Integrating a growing number of distributed systems quickly became a challenge. Islands of computing emerged, leading to complex, object-based platform integration schemes such as CORBA and DCOM that did nothing more than complicate the situation.

Today's technology changes all that. With service-oriented business applications, or SOBA, traditional applications are refactored into business processes that can be expressed as standards-based, platform-independent components and offered as re-usable services. These can be combined and customized into an array of solutions, including complex composite applications, to meet unique business requirements. Integration is "pre-wired," as services can be easily connected and orchestrated without user intervention. And the user interface – once the epicenter of application development – becomes a selectable "add-on" to meet the needs of different users accessing the same solution. With SOBA, a single business application can be accessed via browser, .NET desktop, or even PDA and specialty devices. And a single user can just as easily access any number of business applications from a single UI of choice.

For independent software vendors, SOBA will foster new ways of offering business value to end users at a lower development cost. Re-usable components mean faster time-to-market with new applications, enhancing competitive positioning. The underlying service-oriented foundation erases proprietary platform limitations and makes applications inherently integratable and extensible as end-user needs evolve. The flexibility of the solution goes up and the maintenance costs go down.

Just as Progress Software once revolutionized application development with our powerful, easy-to-use language, tools and database, we're committed to deliver the power of SOBA in ways that benefit everyone and that Progress Software application developers already understand. OpenEdge has evolved into a flexible, reliable, and comprehensive business platform whose components are designed to work together. OpenEdge lets IT professionals efficiently develop, deploy, integrate, and manage critical business applications. By enabling the rapid delivery of integration-ready applications and deployment on platforms that are economical, OpenEdge ensures cost-efficiency and a faster return on investment.

Through a standards-based, service-oriented architecture (SOA) that is the foundation for SOBA, Progress Software provides unparalleled flexibility so that companies can leverage existing technology, effectively adopt new technology, easily connect with customers, partners, and suppliers, and rapidly adapt as market and user requirements change. OpenEdge Release 10 includes the infrastructure and tools that software providers need to support business applications throughout their life cycle. OpenEdge is a unified environment with development tools that simplify complex tasks, industrial-strength application servers to drive the business-processing logic, flexible technology options to address a business's real integration needs, and management and analysis tools for optimizing performance.

## Three Components of SOA

Progress® OpenEdge implements a service-oriented architecture that builds upon the strengths of existing technologies for application development and deployment and preserves the ease-of-use methodology and syntax that are our hallmarks. We firmly believe that building agile componentized applications should be every bit as easy as building traditional monolithic applications. We also believe that our partners should be able to migrate from one paradigm to another with little interruption to their product or their productivity. As a result, Progress Software partners can maximize their investments as they move more quickly and productively to building service-oriented business applications.

There are three components that comprise a service-oriented architecture:

**Business Processes.** In any application, business processes are discrete units of work that combine to execute a complete business task. An effective SOA enables the translation of business logic processes into physical services that can be tied together via a thin API layer represented by an integration standard or a user interface method, or, most likely, both.

With SOBA, the essential requirement is to separate business logic from user interface and other application infrastructure. Many Progress Software application partners have already taken the initial steps to service-oriented architecture by architecting and deploying applications with the OpenEdge Application Server, allowing the distributed server-based deployment of business logic. In addition, the OpenEdge Open Client facilitates the integration of Java™ and .NET- based clients to the business processes running on the OpenEdge Application Server. Such advanced technologies today provide a seamless method of connecting non-Progress Software clients with production business systems written with the OpenEdge business language. In the future, OpenEdge will provide a comprehensive, integrated development environment that will simplify the creation of best-of-breed business applications and services with methodologies and concepts already familiar to the Progress Software application developer and easily adopted by those new to the Progress Software community.

**User Interface Methods.** The power of SOBA emanates from the ability to map component solutions expressed as services to real business problems. The user interface can now be viewed as an add-on that becomes a matter of preference. A single business process might have multiple UIs – both for functionality and technology purposes. A pricing process, for example, could be implemented as part of an order entry screen, as a part of a Web catalog, *and* as a function called from a hand-held device. SOBA provides the ability to build new applications and remodel existing applications such that business logic can be used and re-used with any number of user interface approaches.

Progress Software is enhancing core capabilities to make it easier to connect back-end business logic running in OpenEdge to the entire range of user interface technologies. The ProDataSet™ creates an abstraction layer between physical data and the logical view of that data used by the application programmers. This means that they can transport complex data, with full relationships intact, between client and server or between processes on the client or the server. Our Open Client technology, including the new .NET Open Client, makes it significantly easier to bridge OpenEdge and other environments from a single solution. On the OpenEdge side, the Open Client presents standard business logic to the OpenEdge programmer using the ProDataSet and other standard OpenEdge objects; to .NET programmers, for example, that same ProDataSet appears as a .NET DataSet – just as they would expect it to appear. Programmers can stay in their own comfortable environment, agreeing only on the service contract between the client and server. The future ProDataSet will evolve to provide the foundation for creating higher-order business objects and entities that comprise the building blocks of SOBA-based applications.

**Integration Platform.** Components that will comprise the service-based solutions of the future will be loosely-coupled, with the ability to integrate seamlessly at runtime. Each component, by definition, will have no pre-existing dependencies from another component. Web services will represent a business task as a single entity that is self-describing, and is both network accessible and callable at runtime by other components in a standards-based manner. Web services is a key integration technology that has already demonstrated the power of service-oriented architecture. The power of Web services lies in the industry standards on which it is based, including SOAP, HTTP, and WSDL. OpenEdge 10 fully supports Web services to deliver service-oriented applications today. Any OpenEdge client application has the ability to consume any Web service anywhere on any platform, and an OpenEdge application can be exposed as a Web service accessible by client applications based on OpenEdge, .NET, Java, and other technologies. As the standards supporting Web services mature, solutions built from components expressed as services will provide a more robust integration platform for increasingly complex business applications supporting transactions and workflow with appropriate levels of security.

Given the early stage of Web services adoption, complex enterprises today often require an integration framework to connect various legacy and application platforms-essentially offering a standards-based way to wrap a range of applications and offer them as services. Sonic ESB® -from Sonic Software, a Progress Software operating company, provides a centrally managed, yet globally deployable, foundation for an enterprise-wide SOA by integrating applications as standards-based, event-driven services. Seamlessly bridging administrative domains and firewalls, Sonic ESB forms a unified service bus with full security, scalability, and failover capabilities. Integrated services – both those of participating applications as well as adapters, transformation, content-based routing, and other intermediary services – may be deployed in and managed from any physical location.

Progress Software has delivered Sonic technology to the OpenEdge community in two important ways. The OpenEdge Adapter for SonicMQ® allows a Progress Software application to connect to SonicMQ messaging, the JMS-based messaging system that underlies the Sonic ESB. Additionally, The OpenEdge Adapter for Sonic ESB provides OpenEdge as a set of distributed services on the Sonic ESB, configured and managed by the Sonic Management Console for ease of administration.

The following are some of the business advantages of service-oriented application integration:

- Improving Operational Efficiency – Enabling a faster response time to change, improving employee productivity, implementing Straight through Processing, and eliminating redundant technologies and processes.
- Merger and Acquisition Integration – Rapidly and cost-effectively integrating a multitude of applications running on different platforms, written in different technologies.
- Improving Partner Relationships – Optimizing the value chain with suppliers and distributors, eliminating duplicate data entry, and increasing business visibility across distributors.
- Improving Customer Experience – Increasing service response times, additional product offerings, eliminating duplicate systems and processes.
- Regulatory Compliance – Adhering to government imposed reporting and auditing requirements. Sharing information with other vendors and customers, while protecting company assets (Energy, Telco, Automotive (STAR) and Healthcare (HIPAA)).
- Global Information Availability – Empowering employees and partners with information, gaining visibility into business activities and processes to improve operational decision-making and creating a unified view of data.

The OpenEdge business platform with the Sonic Business Integration Suite™ minimizes risks and costs associated with planning for departmental or enterprise integration projects by providing distributed connectivity. As a result, the successful integration contributes to bottom-line performance by accelerating business processing and improving organizational responsiveness.

OpenEdge with Sonic provides a complete end-to-end business integration strategy for solving virtually all integration problems – from connecting departmental applications to integrating the worldwide systems and processes of your company and business partners.