

# Epicor ICE 2.0: Introducing Next-Generation Business Architecture

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**EPICOR®**

# Executive Summary

No two businesses are exactly alike, and therefore business software must be able to adapt to distinctive processes and policies. Quite often, the technology that helped automate an enterprise in the past is the same technology that keeps it trapped today—unable to adjust to changing business needs or the ebb and flow of the global economy. The business technologies of tomorrow need to be agile, intuitive, compliant and manageable, and the time to chart this course is now.

Epicor Internet Component Environment (ICE) 2.0 is a modern business architecture and application framework which utilizes a 100% service-oriented architecture (SOA) and Web 2.0 technologies for a new breed of enterprise solution. Epicor ICE 2.0 has been created explicitly to help fulfill the business requirement for next-generation technology today.

## Epicor ICE: The foundation for the next-generation of enterprise application:

- Close Business/IT Alignment
- Agile, Reliable Technology
- Straightforward Integration
- Exceptional Flexibility
- Rich User Experiences
- Unprecedented Productivity

Epicor ICE 2.0 offers Epicor *True SOA™* to provide a secure and global framework for Epicor enterprise applications that is highly productive yet inexpensive to maintain.

Designed for the real-time enterprise, Epicor ICE 2.0 is a robust business architecture that provides interactive business process modeling to help businesses rapidly respond to change, adjust for growth, and maintain a competitive advantage.

The combination of Epicor *True SOA* and Web 2.0 technologies, exploited through Epicor Business Process Management (BPM) and Epicor productivity tools—Epicor Portal, Epicor Service Connect, and Epicor Information Worker—provide a truly collaborative and dynamic enterprise application experience.

Epicor ICE 2.0 provides a vastly extensible and interoperable framework that correctly positions your company to realize more business opportunities and accelerates the returned value on technology investments.

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# Epicor ICE – An Intuitive Technology Asset

Epicor ICE 2.0 is not old technology hidden beneath Web service wrappers—it was built from the ground up using core service-oriented standards. Epicor ICE 2.0 features Epicor *True SOA*, which breaks down complex business processes into many smaller processes and abstracts them into self-contained business services. By incorporating and optimizing the powerful Microsoft® .NET™ platform and exploiting the capabilities of Microsoft Windows® Server, Microsoft SQL Server®, and Microsoft Visual Studio®, Epicor ICE 2.0 delivers an agile, flexible and cost-effective solution while ensuring high-level performance and rich user experiences.

A byproduct of Epicor ICE *True SOA* is the delivery of all business services as XML Web services. Each Web service operates as a reusable, self-describing software component, enabling enterprises to orchestrate solutions with other Web services or business operations. This solution assembly approach via Epicor ICE 2.0 means Epicor business solutions have straightforward, low cost interaction with existing company IT hardware and software and outside collaboration with suppliers, partners and customers—all delivered within the strictest security.

Each business service can be bypassed or accessed in any order and from anywhere, paused for human intervention, modified, re-directed to the cloud, or new Web service processes may be created and inserted into the process workflow. This allows businesses to anticipate changing markets and supply-chain demands and quickly correct operational workflows to stay competitive.

Epicor ICE 2.0 provides the framework for Epicor's n-tier enterprise applications, and as such, separates business logic from the underlying technology framework. This layered approach enables users to dynamically model business rules to extend and customize the solution without modifying source code. The framework can be systematically upgraded to incorporate new technology enhancements without disrupting the applications built upon it—thereby reducing your cost of adopting new technologies and upgrading customizations.

A platform that adapts to your business, Epicor ICE 2.0 streamlines the delivery of new features, tools and applications, facilitating quicker response to your changing needs.

# Drive Continuous Process Improvement

True business process management (BPM) is about enabling organizations to automate and streamline while providing flexibility for continuous improvement and adaptability. With Epicor ICE 2.0 BPM, complex logic can be inserted into every aspect of the system and executed as though it were part of the standard code. Users can build their own business rules into the application without the need to touch the base source code. Additionally, Epicor ICE 2.0 BPM has the ability to track data changes within the database and automatically send alerts or print reports when change events occur.

Serving as a complete workflow and business process solution, the Epicor ICE 2.0 business architecture incorporates a comprehensive business orchestration application, Epicor Service Connect, with framework support for business event messaging. Both application developers and technically adept information workers can utilize Epicor Service Connect and Epicor BPM to coordinate business processes, orchestrate workflows, refine best practices, automate decision making, and respond to market conditions by changing how an application works. Epicor ICE 2.0 makes the real-time enterprise a reality.

# Ultra Productive, Adaptable User Experience

Productivity grows when business workers have at hand the resources that are meaningful to them. Epicor ICE 2.0 takes full advantage of Microsoft's .NET smart client technology to deliver a rich user experience in a traditional local client environment. Smart clients are easily deployed, centrally managed client applications that offer a powerful interactive experience—an experience that takes advantage of local resources to connect intelligently to distributed data sources. Business workers can take advantage of increased opportunities to extract, consume, analyze, and distribute information to help create new products, expand into new markets, streamline business procedures, and provide better operational control.

Epicor ICE 2.0 smart client technology offers complete control over the look and feel of the entire user interface, through styling functionality, to provide the same look and feel as Microsoft Outlook 2007. For example, smart clients allow multiple areas of a grid to be frozen vertically or horizontally so they can be seen simultaneously, and the creation of multi-tiered groups to quickly make sense of large amounts of data.

Other Microsoft Excel®-like usability features include drag and drop column manipulation and the ability to sort multiple grid columns.

A particularly useful feature of the ICE 2.0 smart client is the ability to cut-and-paste information to and from all areas of Epicor applications. For example, rows can be cut and pasted to and from Microsoft Excel to eliminate the need to re-enter data after it has been created in a worksheet. Epicor ICE 2.0 also infuses smart client technology with the need for enterprise content and document management with support for Microsoft SharePoint® document repositories against application records and processes.

With Epicor *True SOA*, Epicor ICE 2.0 provides for fully n-tier applications, with highly functional, flexible and intuitive clients that work through the Microsoft .NET interface layer against business services on the application server. Epicor *True SOA* ensures the client is abstracted from the application by an interface layer, allowing the architecture to support any Microsoft .NET-compliant client against the interface, including Web browsers, mobile devices, bar code scanners, and other Web services. In order to facilitate this flexibility, Epicor ICE 2.0 business architecture places great emphasis on ensuring that the business logic and rules are centralized on the application server, rather than being built into the client user interfaces.

The tools people use to conduct business today are diverse and plentiful. Business is everywhere; it's real-time and always on-line. Instant messaging, the Internet, and ubiquitous mobility all play a part in the daily lives of the information hungry global economy. Although smart client technology provides particularly rich functionality, it does not necessarily provide the ideal access mechanism for all business users. In answer to this, Epicor *True SOA* features the Epicor Everywhere™ Framework, a unique technology that ensures a single source of tagged XML metadata can generate rich user experiences not just for Microsoft Windows smart clients, but for Web browsers and mobile devices as well.

In addition to smart client, browser and mobile device user interfaces, Epicor ICE 2.0 also enables business workers to seamlessly view and modify data from within Microsoft Office® productivity tools. Users are able to see and use Epicor data in Microsoft Outlook, Microsoft Excel, Microsoft Word®, and Microsoft SharePoint without having to leave those applications or launch Epicor applications, whether online or disconnected.

# Total Flexibility

User personalization, modification, and extension through new application development are key attributes of the Epicor ICE 2.0 business architecture. As part of the layered stack approach Epicor ICE provides, it is possible for personalization and modification to be carried out completely separate from the application source code.

Personalization is a form of modification that each user may utilize to change the appearance of their personal user interface by configuring cosmetic changes to each form to fit their processing needs. Modification provides the ability to modify both programs and user interfaces, and then make those changes available to one or more users. Epicor ICE 2.0 includes a powerful set of Microsoft .NET-based customization tools that allow you to add fields or forms to any program in the application.

For those requirements that cannot be satisfied by the embedded layers, Epicor ICE 2.0 also offers an advanced software development kit (SDK) and supplies the client source, framework UI and business logic tools necessary to write additions and extensions to the application. The SDK is a robust toolset used to create new software elements or modify existing software elements. Within the Epicor ICE SDK users can make changes to underlying business processes via the Object Designer. This allows users to tailor the system to meet their needs while at the same time tracking these changes as they represent a functional change to the software application that might need to be tracked for governance and compliance auditing. This is a significant addition to the customization options within the application framework.

# Bringing the Web 2.0 Experience to the Enterprise

Epicor understands the business value and competitive edge that mass participation and collaboration bring, with the Web as the key enabler. Substantial advances and increasing savvy of the consumer side of the Web have brought new levels of productivity and self-evident usability to today's technology consumers. Even the rise in social computing and related technologies has an outlet in enterprise business software, and are manifested in capabilities such as enterprise search, RSS, presence, and composite application mash-ups. Epicor ICE embraces these emerging Web 2.0 technologies and combines them with Epicor *True SOA* to deliver unprecedented support for harnessing knowledge, rapidly finding information, and taking collaborative actions upon it.

But how do you hone in on what you're looking for? Enter Epicor Enterprise Search which brings relevant business information to employees and customers in a familiar and easy-to-use setting.

By utilizing Web 2.0 technologies, Microsoft SQL Server, and the building blocks of Microsoft Search, Epicor ICE delivers Epicor Enterprise Search, a comprehensive search tool that brings the personal Internet experience to the workplace. Epicor Enterprise Search provides secure embedded search capabilities through tag clouds of Epicor structured data that span all Epicor applications built upon it. It extends beyond enterprise data to unstructured data such as Word documents and supports extensible actions from search results including task specific actions, internal and external Web service calls and direct links to applications or application forms in context. Application data search results are returned to workers based on access rights—if a user is not permitted to view certain data, it will not be listed in the results.

Epicor ICE 2.0 extends really simple syndication (RSS) subscription capabilities to Epicor application data. This means that business users may subscribe to specific information that they wish to be kept apprised of. One example of enablement is within Epicor Portal, where the entire schema of Epicor applications is accessed for end-user query development and Web deployment. By subscribing to a particular query using RSS, users will see information proactively pushed to them when the data behind that query changes. For example, a user may wish to attach an RSS feed to a particular contact at a customer site. Any time something happens to that contact they can receive a note about it. RSS information can be pushed to your container of choice including the RSS Feeds—Outlook Syndicated Content Directory within Microsoft Outlook or via Windows Vista® Gadgets.

Another Web 2.0 concept that is becoming increasingly popular within business is the composite application or mash-up. Enabled by the Epicor Everywhere Framework, Epicor application Web forms generated from XML metadata, and their related linked business logic, can be used in composite application development. Each Web form supports publication and subscription, allowing specific business functionality to be “mashed-up” with other line of business developments. Epicor ICE 2.0 makes it possible to build composite applications within, for instance, Microsoft Office SharePoint Server that combine various connected Web parts, such as Epicor Web forms, Epicor Portal Web queries, Epicor Enterprise Performance Management (EPM) analytical Web parts, and more.

For example, a supplier could create a new portal that contained their shipment and accuracy performance information, current inventory status for supplier sourced components and even the ability for customers to directly log purchase orders or RFQs. What this means to business is that highly specific and purpose built solutions can be assembled from a variety of existing business processes without the need to have to build from scratch.



# Role-Based, Real-Time, and Always In-Context

Epicor ICE 2.0 features Epicor Business Activity Queries (BAQ), which allow the creation of personalized data queries that are easy enough for end users to manage, yet powerful enough for IT personnel to exploit. Once queries are created, they can be deployed throughout Epicor applications—to generate reports, for quick searches, for Portal views, or within role-based Epicor Dashboards. Epicor BAQs ensure that the data you need is delivered when you need it, based on who you are and in-context to the work at hand.

Epicor ICE 2.0 also supports integral application dashboards—flexible and powerful role-based information screens that provide easy access to critical data in a real-time environment. The data displayed in Epicor Dashboards can be customized to fit specific needs and refreshed automatically or on-demand so you can act on changes as they occur.

Epicor Dashboards can be configured to allow commonly used Web pages or URLs, BAQs, and direct access to Epicor application functionality.

## Global Companies Need Global Business Software

As organizations grow, decentralize, or make acquisitions, the potential for multiple, inconsistent versions of the same data in different parts of the company can cause real problems with quality and reconciliation. The recent emphasis on corporate governance, increased merger and acquisition activity, and regulatory compliance has made the creation and maintenance of accurate and complete master data a business imperative. Epicor Master Data Management (MDM) helps to ensure that multi-company data meets regulatory requirements and also provides the consistency needed for operational efficiency, real-time decision-making, and higher customer satisfaction. With Epicor MDM, data conflicts are eliminated by clearly defining the one owner of the master information. Local copies of the master can have varying levels of differences (locally maintained), but still be tied back to the master information.

Epicor MDM is based on a powerful Epicor ICE 2.0 transformation engine, which provides the mapping capability to transform inbound data to the requisite master data definition and to map data definitions retrieved from the master data repository to XML for output. Based on a set of user-defined rules and mappings, diverse global entities may now have records transferred and maintained between companies with the assurance that new and changed records are sent to all companies within the enterprise. At the same time, local customers, parts, suppliers, and so on in each company remain autonomous between companies. This is vital

so that each company can maintain its own business function without being restricted to working only with global customers or suppliers. This also allows each company to produce and/or sell their own product line by having localized part values that are specific to them.

The Epicor ICE 2.0 Layered Client Stack is designed for global-ready enterprise business applications. Epicor ICE utilizes the Microsoft standard transactional format assemblies to ensure that the resources requiring localization and translation are separated from the rest of the application code into their own layers, so that source code need not be modified during localization. The translation layer stores multiple language variants and manages the deployment on-demand to the client.

## Strong Support for Governance, Risk, and Compliance Initiatives

Epicor ICE 2.0 provides comprehensive user and group security to restrict data and application accessibility as needed. Security can be granted at user and group levels for all security objects including forms, fields, reports, menus, and method calls. Data tier security is available for both tables and columns. There is also an option to use Windows Authentication to support a Windows single sign-on and password policy.

Epicor ICE 2.0 ensures that the business logic protects the database from corruption by always validating updates, regardless of the source of the transaction. This is necessary in an SOA since the business logic can be called from many environments including the smart client, external Web services, browser-based clients, and other smart devices. Epicor ICE 2.0 verifies that whoever (or whatever) is attempting to access the application server is permitted to do so. This includes login security by entry of user ID and password or via Windows user authentication; session security for application components run directly; and services security through Epicor *True SOA* to ensure that an external system may only access the business logic when allowed.

Epicor ICE 2.0 also provides automated change logs to capture changes as they happen, helping companies better manage the accuracy of data and support the demands of compliance initiatives. These logs monitor all changes to records (before and after values), who made the changes, when the changes were made, and can even prompt users for audit notes of why change must be made.

With integral use of Epicor ICE 2.0 BPM and the addition of Epicor Service Connect, businesses can both enforce controls and enhance policies as needed, at a business level in support of governance, risk and compliance (GRC) initiatives.

# Complete Support for Enterprise Business Applications

Epicor ICE offers a series of system facilities and tools to enable the effective management of Epicor applications, extending to system security, document and enterprise content management, advanced software development, software deployment, and product documentation. For example, Epicor ICE 2.0 features a centralized administration console that delivers a single management area for Epicor applications, which removes redundancy and in so doing promotes consistency, accuracy and efficiency.

Epicor ICE business architecture is developed separately from Epicor enterprise business applications, allowing each to be modified and updated in separation and potentially under differing release cycles. Epicor ICE framework components have been extracted from application source control and given their own build and delivery schedules resulting in a more robust application development environment that allows staged delivery of Epicor ICE to application developers using the Epicor ICE software development kit (SDK).

## Epicor ICE 2.0 – The Foundation for the Next-Generation of Enterprise Application from Epicor

Epicor ICE 2.0 is truly agile business architecture, designed to support enterprise applications for growing businesses on a global basis. Through Epicor *True SOA*, Epicor ICE empowers companies to quickly add or enhance business rules and processes as market demands change.

Epicor has long been a recognized leader in building world-class enterprise applications, architected to utilize Microsoft platforms and technologies. Epicor ICE 2.0 builds on this tradition of offering technology solutions that yield measurable business benefits and clear customer advantage by incorporating modern Web 2.0 techniques in support of far reaching business productivity and usability.

In summary, Epicor ICE 2.0 delivers a technology resource that's not just built for change, but is designed for the way people work today. In fact, it reduces the cost and complexity of technology adoption by being completely ready for business today yet offers enabling business architecture for tomorrow.

# About Epicor

Epicor Software (NASDAQ: EPIC) is a global leader delivering business software solutions to the manufacturing, distribution, retail, hospitality and services industries. With 20,000 customers in more than 140 countries, Epicor provides integrated enterprise resource planning (ERP), customer relationship management (CRM), supply chain management (SCM) and enterprise retail software solutions that enable companies to drive increased efficiency and improve profitability, and also empower global enterprises to achieve even greater success.

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