Understanding ERP Deployment Choices

September 2014

Abstract

The rapid evolution of global business has changed the way companies are approaching the deployment of ERP. Today's need for agility and responsiveness has increased the demand for deployment choices; the constraints of early ERP systems—monolithic, highly customized, and expensive to implement and maintain—have become increasingly pronounced in markets where change is accelerating, and the ability to respond nimbly and effectively to change is a strategic imperative.

ERP systems were once deployed as monolithic systems running in local data centers. Implementing ERP was a landmark event: rare, disruptive, and often feared as an unavoidable hassle. In the current business environment, such a jolting and inflexible event is unwarranted. Today, there are a multitude of ERP deployment strategies: single-system, cloud-based, operational, peer, hybrid, and multi-level approaches. Advances in ERP system design, the advent of cloud computing, and the ongoing evolution of business are among the key factors driving this proliferation of choices.

Companies now need to evolve quickly, which means being able to move some or all business operations to an existing or new ERP instance quickly and inexpensively, anywhere in the world. Small companies are increasingly likely to become multi-national as emerging markets take on larger roles in revenue growth. Larger companies continue to optimize and innovate through organic development, as well as through mergers and acquisitions.

In this increasingly competitive environment, the ERP deployment choice is a significant advantage for companies seeking an agile response to constantly changing and often-volatile market conditions. In particular, cloud-based ERP systems are increasingly seen as an effective means for companies to economically deploy new ERP or expand IT operations as their commercial reach broadens globally.

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ERP Deployment Choice

The intrinsic complexity of ERP systems, combined with widely varying business practices and rapidly evolving technical considerations, can make the choice of a deployment model difficult or confusing. Cloud computing offers those implementing ERP with a range of options when deciding on deployment. The three most critical aspects of choosing a cloud ERP deployment strategy:

• Licensing

• Management

• Isolation

Software as a Service (SaaS) is typically, though not always, a specific combination of these aspects: subscription licensing, vendor management, and shared resources.

License
Perpetual or Subscription

Management
Customer or Vendor

Isolation
Separate or Shared

Critical Aspects of Cloud ERP Strategy

Licensing

Approaches to licensing software have changed dramatically in recent times. For many years, ERP vendors have offered to host ERP systems for their customers using a business model called Application Service Providor (ASP) or Hosting. ASP is essentially the same as a traditional software project, except that the software is installed on machines at the vendor rather than the customer. Typically, for a monthly fee the vendor maintains the system and manages backups, upgrades, and other procedures. Like on-premise deployments, ASP agreements involve licensing software perpetually, which means the customer has a permanent right to use the software, even if the agreement for the vendor to host the solution ends. Subscription licensing means that the customer only has the right to use software for a set duration, after which the subscription must be renewed. Subscription licenses avoid substantial up-front costs for licenses, as well as (typically) annual maintenance charges for receiving updates. Subscriptions consolidate the license, maintenance, and many other costs into a monthly fee. Perpetual licenses for large solutions such as ERP have traditionally been significant capital expenditures, amortized over several years. Subscriptions require a smaller cash commitment and are usually funded as an operating expense, which lowers the barrier of entry for many companies. However, for systems such as ERP that have a very long project lifecycle (i.e., seven or more years), subscription license costs may eventually overtake the cost of a perpetual license.

	On-Premise	Managed Hosting	SaaS Single-Tenant	SaaS Multi-Tenant
License Owner	Customer	Customer	Vendor	Vendor
Maintenance Fee	Yes	Yes	No	No
Hosting Fee	No	Yes	Yes	No
Expense Type	CapEx	CapEx/Opex	OpEx	OpEx
Data Isolation	Physical	Physical	Physical	Logical
Customization	Yes	Yes	Yes	Ususally Limited
Upgrades/ Updates	Customer	Co-Managed	Vendor	Vendor

Management

Managing a production ERP system in a larger company generally requires dedicated staff and very good IT skills. ERP systems are obviously mission-critical; therefore, maintaining the system and having disciplines and procedures for backing up data are extremely important. ERP systems licensed on-premise place the system maintenance burden squarely on the customer. Managed hosting (ASP) shares maintenance responsibilities: the vendor manages tasks requiring physical access to the hardware (such as backups), while the customer installs upgrades and customizations.

Subscription-based systems put the management and maintenance responsibility solely on the vendor. This is by design, because cloud-based solutions share software and infrastructure across customers, which keeps costs down and system reliability up. Subscription customers have less control of how frequently the software is updated or when changes are applied, but vendors provide better services because they can improve the system almost continuously.

Isolation

Sharing resources keeps service costs down and makes it easier for vendors to improve offerings over time. However, sharing data is obviously not desired. Cloud ERP vendors ensure that data is well partitioned, carefully delineated to avoid having data belonging to one system tenant (i.e., customer) seen by another. Partitioning data on shared hardware and software is the typical practice for subscription-based solutions running on multi-tenant systems.

ERP customers in regulated industries, such as medical products, may require certifications of their ERP systems. In these cases, system changes have to be audited and managed according to strict requirements. Consequently, it is impractical for the ERP vendor to retain full control of the system.

Cloud ERP vendors generally offer a "single-tenant" version of the solution, which runs on dedicated hardware or on infrastructure highly isolated from other tenants. Having a single-tenant option is also useful for ensuring that performance remains high during peak processing. Single-tenant subscriptions carry a higher price to offset the additional resources required of vendors; sometimes this is charged as a separate monthly premium.

Portability

Providing the opportunity to migration from one deployment model to another (such as moving from cloud to on-premises), or even within a deployment model (such as migrating from single tenant cloud deployment to multi-tenant cloud deployment) is central to the concept of application portability. Because business needs and technical preferences can vary wildly over the life of a typical ERP deployment it's preferable to choose an ERP solution that provides the ability to easily 'port' or migrate from one deployment model to another. Understanding in advance any limitation of this portability is critical, as some vendors restrict your deployment to just a single model.

Epicor® Cloud ERP

Providing users with a range of choices for the best fit for their specific requirements, Epicor ERP 10 is architected for universal deployment: on premise, in the cloud, or some combination of the two. This flexibility is possible because Epicor does not dilute its product development, support, or services resources by dividing the ERP source code into on-premise and cloud-based editions. Epicor also believes that its investments to make ERP amenable to cloud computing greatly benefit all customers, even those running ERP on premise.

Epicor ERP was architected from the ground up with multi-tenancy in mind through company and other natural isolation, as well as with security partitions built into the ERP product. Epicor ERP 10 is built on an all-new, managed code server platform. Its performance characteristics were modeled around 1.6GHz CPU cores, which are the basic unit of compute in public cloud infrastructures such as Microsoft Azure; so ERP applications are specified to run acceptably at that 1.6GHz clock rate. Further, Epicor ERP 10 is built on Microsoft .NET, the Windows® Communications Foundation and Microsoft® ServiceBus, which work together to make sure ERP instances can reliably communicate with each other and client applications in local or widely distributed deployments.

ERP 10 also is certified to run in virtualized environments using Microsoft Hyper-V® or VMware®; this is one reason it is easily deployed to public cloud resources. Epicor customers can host ERP 10 for themselves on public cloud resources or using on-premise infrastructure; Epicor supports both options. Even if ERP itself is deployed on premise, cloud resources can be useful for managing database backups, hosting companion systems such as eCommerce, or for disaster recovery. This feature is consistent with a recent assertion of industry analyst Gartner about the direction of ERP: "The ERP suite is being deconstructed into postmodern ERP that will result in a more federated, loosely coupled ERP environment with much of the functionality sourced as cloud services or via business process outsourcers."[1]
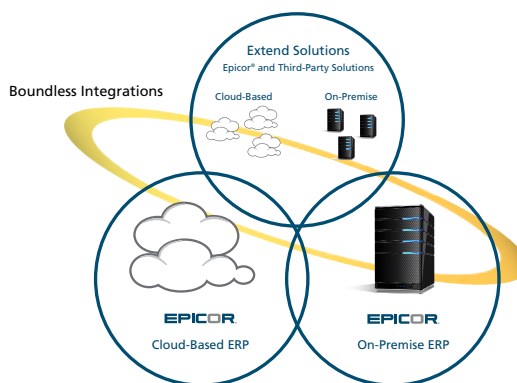
The Advent of Postmodern ERP

Cloud infrastructure may not perform as well as on-premise hardware, so implementers looking to deploy ERP in the cloud need to understand any compute or I/O limitations well ahead of time. For high transaction ERP systems, general-purpose cloud resources likely won't provide sufficient input/output capacity (IOPs) to run ERP adequately. Epicor recommends administrators acquire premium cloud resources with the highest possible IOPs. ERP systems hosted by Epicor—whether subscription-based or not—run on systems optimized for online transaction processing (OLTP) applications as well as Epicor ERP 10 itself.

Epicor ERP 10 Cloud Editions

All Epicor Cloud ERP subscriptions are managed and constantly updated by the Epicor Cloud Operations Team. Any serious software bugs or defects are promptly deployed across all physical applicable instances and tenancies. As released, new features are routinely deployed into multi-tenant instances multiple times a year. Available service updates for single-tenant subscriptions are coordinated with customers coordinated with customer to ensure the system evolves in accordance with the business and technical requirements of the customers operations.
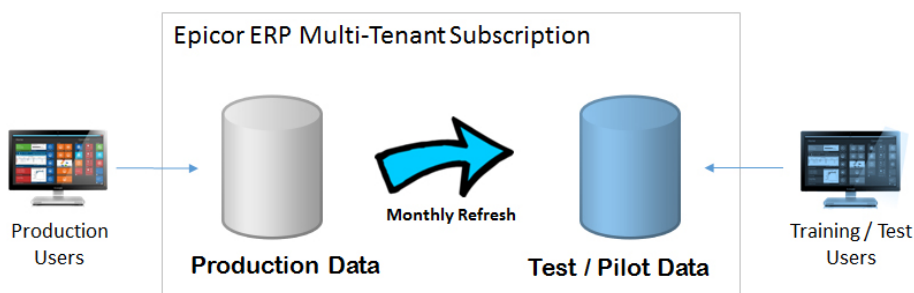
Epicor Multi-Tenant SaaS

Epicor multi-tenant SaaS includes automatic management of an auxiliary tenancy for pilot or training purposes. Production data (subject to security and other operational requirements) is copied into the pilot area monthly. This gives users a chance to learn about the ERP system or develop new processes or reports using their own data. Service updates that include feature enhancements are also deployed into the pilot area ahead of production availability, so customers can explore new capabilities, provide feedback to Epicor and prepare their own users for the upcoming upgrade.

Cloud ERP Customization Features

All Epicor Cloud ERP editions come complete with robust functionality for both small and large enterprises. However, Epicor ERP 10 is distinguished by its provision of extremely rich customization capabilities that allow customers to map ERP services to business processes, redefine service behavior, and create new user experiences to maximize user productivity. All these capabilities are available for multi-tenant Cloud customers through Epicor Business Process Management and the Epicor Customization Framework.
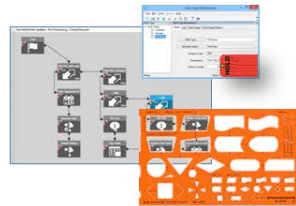
Business Process Management
Custom Server Logic

Customization Framework
Tailored User Experience

Customizable Server and Client in Epicor SaaS

Business Process Management

Epicor Business Process Management (BPM) allows administrators to redefine service behavior with customized rules. Virtually all the nearly 20,000 service operations that comprise ERP 10 can be intercepted and incorporated into a rules-based workflow. BPM workflows can be triggered to run before, instead of, or after the baseline processing. For updates to application data, these rules can be executed within the overall transaction or asynchronously after changes are committed to the database.
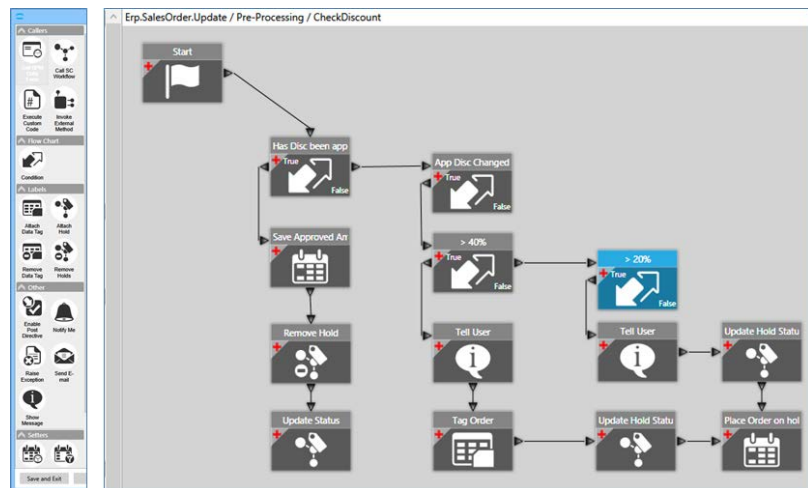
Epicor Business Process Management (BPM) Rules

BPM also includes "business holds," user-defined artifacts used to constrain or route processing logic. BPM directives and business holds work together to build complex business processes. Directives may interrupt the normal processing sequence to query the user for an approval or for more information.

Other directive activities include attaching and removing data tags and business holds, and evaluating static or data-driven conditions.
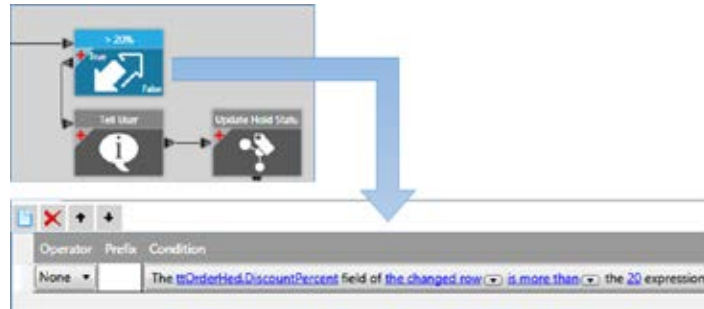

Rules-Based Directives

Most BPM directives are configured using easy rules wizards, similar to rules editing in Microsoft Outlook®. All rules are stored as metadata resources, so there is no impact when ERP is updated with new features and capabilities.

Customization Framework

The Epicor ERP 10 Customization Framework provides a fast and effective way to create unique, rich, and productive user experiences. The ERP 10 Client Application includes an embedded integrated development environment (IDE) that allows controls to be moved, dropped, or added. Administrators can create multiple customized versions of any form, each linked to the navigational menus and individually secured.

Developers can declare dynamic "row rules" to create data-driven behaviors such as changing color or style. Additionally, form logic can be created in C# or VB.NET and assigned to form, panel, or control events. All customizations are managed and stored as metadata on the server, and are automatically distributed to users.
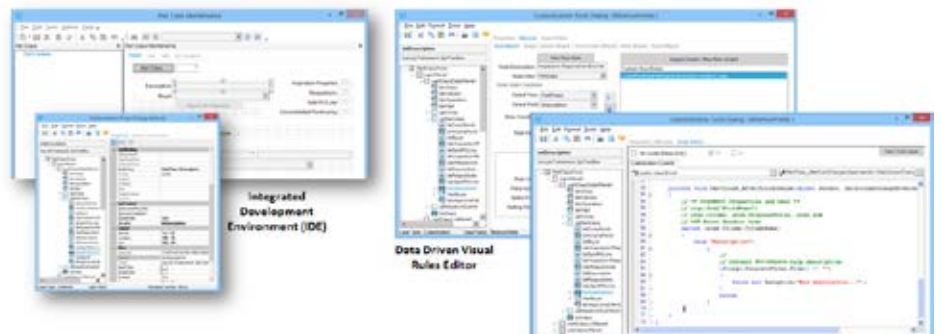
Rich Customization

Finally, a personalization layer is reserved to allow individuals control of the colors, look, and feel of their ERP system. Users (with sufficient permission) can launch the ERP 10 Runtime Styling Tool (RST) at any time when running the ERP 10 Client Application. With the RST active, users can hover the cursor over form and menu areas to see what resources are present and how they can be modified. Individual style choices can be collected and shared with other individuals, or across the enterprise.

Conclusion: The Advantages of Flexible Deployment

By providing an ERP solution that is available as on-premise or cloud-based, and by enabling boundless integrations to extend to Epicor and other third-party solutions, Epicor ERP 10 helps empower organizations to leverage choice for agile response in today's rapidly changing business environment.

What this means for today's businesses:

- The ability to deploy ERP on-premise, in the cloud, or in any combination

- Greater adaptability in fluid, dynamic, and always evolving value networks

- Faster deployment of solutions, faster upgrades of implemented solutions, staying current with technological advances

- Enhanced support of business growth; improved ability to scale up or out to meet emerging opportunities and minimize risk

- Powerful yet intuitive tools for easy configuration to specific business needs

Increasingly, companies will find cloud-based ERP an excellent option. Smaller companies implementing their first ERP system will find subscription SaaS the most cost effective way to deploy a world-class ERP solution. Larger companies that are expanding operations world-wide can use cloud ERP to replicate business processes consistently around the globe.

Epicor's Cloud ERP offerings provide the same deep and mature ERP functionality as its on-premise editions. Epicor's technology stack, which includes a state-of-the-art services architecture coupled with extensive customization features, is the underlying framework that allows for remarkable performance and flexibility. Epicor ERP is a proven, world-ready solution that has been available both hosted and as a subscription for years. Moreover, Epicor ERP 10 provides an adaptable runtime architecture, specifically tuned to the needs of today's cloud ERP users.

The growing momentum of cloud-based ERP is well documented. Most companies are beginning to realize that cloud-based ERP typically provides higher reliability and lower management costs than on-premise deployments, and the speed and ease of cloud-based deployments stand in stark contrast to the somewhat daunting memories of early ERP deployment. What's more, cloud-based ERP allows organizations to better leverage their IT assets on strategic projects to drive revenue growth.

All in all, yesterday's ERP is not today's; flexible deployment, much of it cloud-based, will be the hallmark of ERP systems in the immediate and near future. Epicor ERP 10 is designed to provide that flexible deployment and is built to sustain that future for businesses large and small.

NOTES

1. Gartner, Inc., Press Release, January 29, 2014.

About Epicor

Epicor Software Corporation is a global leader delivering business software solutions to the manufacturing, distribution, retail, and service industries. With more than 40 years of experience, Epicor has more than 20,000 customers in over 150 countries. Epicor solutions enable companies to drive increased efficiency and improve profitability. With a history of innovation, industry expertise and passion for excellence, Epicor inspires customers to build lasting competitive advantage. Epicor provides the single point of accountability that local, regional, and global businesses demand. For more information, visit www.epicor.com.

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