

Why manufacturers need to unshackle from outdated ERP



Items to consider to reduce the number of systems supporting your business





Avoiding integrations

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The goal of enterprise software is to streamline business operations in a single business application. Unfortunately, in many cases, that is not how things work. In some cases, you need to integrate third party solutions with that system of record, including enterprise resource planning (ERP). Even when they are done well and gracefully share master data between two systems, these integrations present usability challenges because users must learn a new interface and navigation conventions each time they switch from ERP to the integrated solution.

But many ERP products also throw up usability barriers even within what is supposed to be a unified application suite by among other things:

- Using different interfaces for different parts of the solution
- Giving users a different experience depending on device type, again forcing them to learn multiple systems
- Using a common interface to obscure multiple different software products added to the suite through acquisition

Consistency of user experience from one part of the application to the other is becoming even more important than it was in the past. In many companies, a shortage of skilled workers means many employees may have to fulfill multiple roles, which will mean using different interfaces, increasing the learning curve and reducing productivity. As mobile devices become the default for more and more business tasks, application suites with a mobile interface that is less capable than and cannot be configured to enable all the tasks a laptop user can perform are already probably obsolete.

Software vendors also increase complexity and cost for their customers by failing to include embedded functionality for essential processes like document management, quality management, human resources, enterprise asset management (EAM) and maintenance of capital equipment, risk management, and tools to handle more demanding manufacturing and financial control requirements of a modern, multi-mode operation.

Let's take a look separately at each of these problems, and then consider a number of ways to vet and qualify enterprise software vendors to ensure the ERP solutions you select and implement will sort out what had been a tangled mess of ERP and point solutions, and give you the agility and control you need to set your business free.



ERP is a unified solution
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Single interface, single solution

The promise, the goal, of ERP is to provide that real time, single version of the truth across the lifecycle of a customer interaction, manufacturing processes, product and asset lifecycles and enterprise projects. When data regarding the entire value chain is contained in a single database, through functional modules that were all designed to work together, ERP can deliver all this and more.

Modern ERP software is comprised of multiple modular parts, and each part can do something as simple as taking data out of a database and then putting it back in to record a state change or transaction. Other components may link these basic building blocks into broader business processes, and others will display these processes as required in the presentation layer, or user interface (UI). ERP should be a solution where all parts of the system were designed to freely interact with each other in a defined, logical manner. Only in this way can a change, setting, action or transaction in one module or field immediately causes a reaction elsewhere in the system.

But if you look under the hood of many ERP suites, you will find multiple software products are comprised of disparate applications, developed separately and lashed together with a common user interface. Why is this a problem?



Agile ERP

A good ERP product with components designed to work together will allow you to freely create and reconfigure processes and dashboards that cut across functional modules.

- Even if the user interface is the same, the way the underlying software works will often be different, increasing the learning curve and making software less intuitive
- Managing role—and user-based permissions will be harder across multiple software products
- Changing the way the software works will be difficult because something like a standalone maintenance module will be integrated point-to-point with ERP and changes require a systems integration project
- Sometimes you need to buy separate licenses for the multiple products hidden in that ERP suite, and any time you upgrade, you will need to uplift those integrations and reduce the uptime that your business needs
- Software licensed separately may present challenges caused by multiple maintenance windows, and ensuring the various vendors contributing to your supposedly integrated solutions are not taking your software offline at the wrong time to apply patches and updates can be an administrative nightmare
- Data structures may be different with different naming conventions and field characteristics, making reporting and analytics an IT function rather than a user ability

When your ERP software vendor acquires other companies and integrates those products, or white-labels software from another company and sells it as part of their suite, those integrations present real limitations. Integration requirements may be defined and the integration created during your implementation, or you may be given a standard integration. But when these two systems are integrated, you are calling over specific data in specific fields from one software product to the other, making one of the two solutions the data master for those fields. If your needs change, or if you want to analyze transactional patterns that extend beyond this limited data set, you then have another integration project on your hands, and that will slow you down and consume budget. A good ERP product with components designed to work together will allow you to freely create and reconfigure processes and dashboards that cut across functional modules because you are not using point-to-point integration but rather a contiguous, consistent architecture that enables any and all data to be shared across different parts of the application.

That consistency will also help you with data security and privacy, so customer information and confidential or classified information can only be seen by authorized parties regardless of what part of an application suite they are using. And it makes segregation of duties—essential to protective controls that prevent fraud and abuse—easier across your business.



Mobile mastery

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Change made easy

The specific way process flows are defined during your implementation ought to be agile and flexible, and changes to how the software supports your business processes should carry over seamlessly with each upgrade. How is this possible? Modern ERP should include not just layers that contain data and the components and modules that act on the data, but a layer to contain things like user-specific settings, customizations and configuration settings. This layer “remembers” all of the user-configurable changes that have been made to the software since it was first implemented and copies it over to a new version during an upgrade process. This degree of agility is simply not possible when your software suite is made up of multiple software products hiding behind a shared interface.

Some software suites will also offer a mobile interface that differs substantially from the default interface. Obviously, the interface must adapt to different screen sizes, but a company’s IT department ought to be able to proactively determine which fields and information appear on a smaller screen. Ideally, mobile users should use the exact same interface, with necessary adaptations, otherwise they again will have two interfaces to learn, and some important functions may not be available on a tablet or smartphone.



Maintenance matters

Without embedded Enterprise Asset Management (EAM) software, an asset intensive organization will struggle to make sound repair or replace decisions about capital equipment and will have difficulty coordinating maintenance and production schedules.

Essential functions all included

Many ERP products originated in repetitive manufacturing, emerging from the materials requirements planning (MRP) discipline. Due to this lineage, these software suites are very solid in helping balance supply and demand, aligning demand from sales orders and the demand forecast with manufacturing bills of materials that determine what materials are required and finished goods inventory. But they may rely on either integration to third party solutions or hastily-integrated products the vendor has acquired to deliver functionality for things like human resources, enterprise asset management and maintenance, aftermarket service, quality management, warranty management, risk management and human resources. Even finance, a central module in most ERP products, often lacks the ability to handle more project- or asset-intensive business models.

All of this software needs to be an integral part of ERP for you to get the control, agility and flexibility you need.

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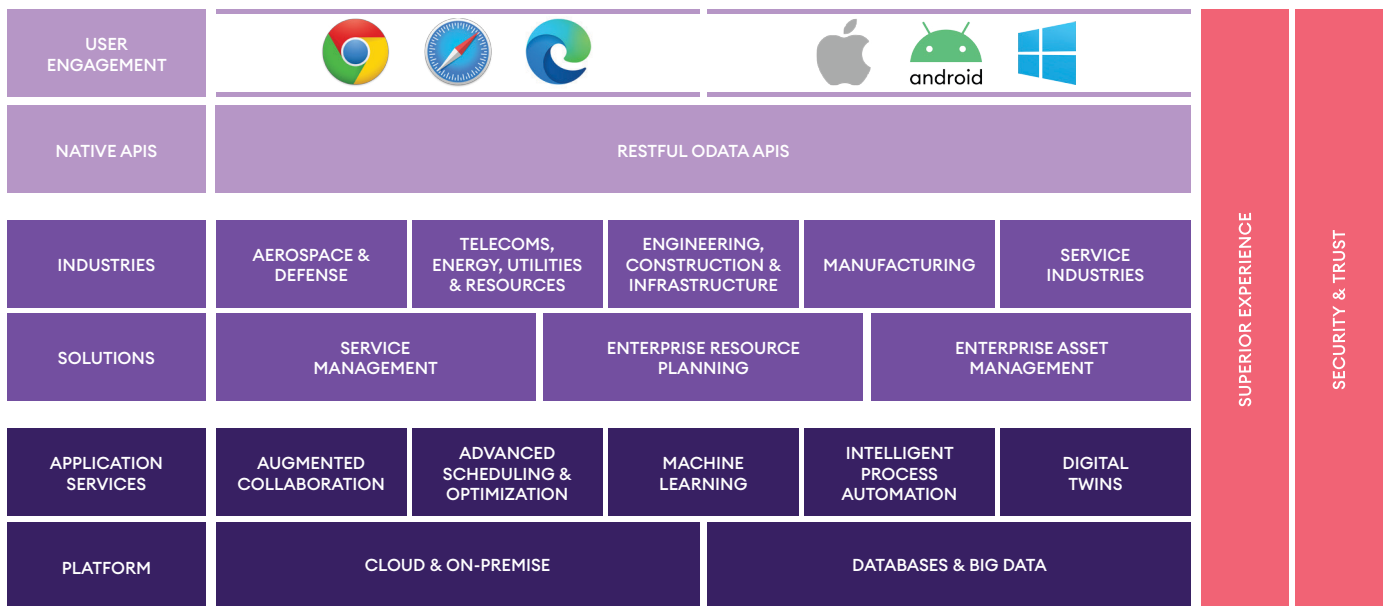
Double dealing

A vendor may sell a customer an on-premise software suite that includes human resources, for instance, through a perpetual license, which means the customer owns the right to use the software into perpetuity. Then that vendor will try to sell them a different human resources software product by subscription in the cloud.

- Where human resources software is not tightly woven into ERP, the demand plan will not be able to send pull signals that result in hiring or training of people to supply adequate capacity with specific skills and safety certifications
- Engineer-to-order manufacturers, defense contractors and other project- and program-driven businesses that try to use standalone project management tools will find their finance, contract management and risk management systems are separate silos. They will be unable to manage dynamic projects in real time, generate key metrics like estimate to complete or estimate at completion, or ensure they are meeting contractual requirements that carry financial penalties for nonperformance

While disconnect between different parts of a supposedly integrated suite may be hidden behind a common interface, sometimes it is right out in the open. A vendor may sell a customer an on-premise software suite that includes human resources, for instance, through a perpetual license, which means the customer owns the right to use the software into perpetuity. Then that vendor will try to sell them a different human resources software product by subscription in the cloud, which may fit the vendor's business model, but results in diminished interoperability and integration for their customer.

Evolved architecture model





Ask that vendor ... Vetting ERP vendors.

Vendors may represent their suite as a contiguous, integrated suite. Here are some questions to ask to see if they are telling the truth.

1. Will we be able to use the same user interface regardless of device type across the entire suite?
2. When I make a configuration change or setting in one part of the software, will it extend to all other areas of the software?
3. How do user-based and role-based permissions and settings cross over from one part of the software to the other? What exceptions do we need to watch out for?
4. What are the steps to add fields, screens and product routings after we go live? And how do those changes carry over to a new version once we upgrade?
5. How many license agreements will we need to sign with different white-labeled software vendors?
6. Show me how information flows through the application from the beginning to end of a customer, project or asset lifecycle. What options do I have to change the way this flow is structured?
7. On a complex manufacturing project, how can we determine the estimated cost to get from where we are to completion, and what our total cost will be when we are done, including materials, human resources, machine time and subcontracted processes?
8. Show me how, using this software, we can determine whether to replace or repair a piece of capital equipment given cost of operation versus productivity
9. Take me through what a plant shutdown or addition of new equipment on the plant floor would look like. How can we manage that project, minimize disruption make it dovetail with production needs and manage the contractors, equipment cost and timeline? Can you show us how we would make the decision, using the application, to bring in contractors or use our own personnel?
10. For new product development, how can we capture that time and expense and then, in the software, attribute it to the total margin we see on that new product?

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