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# SaaS versus on-premise ERP

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## Executive Summary

Should your business acquire traditional on-premise enterprise resource planning (ERP) solutions? Or should it invest in emerging software-as-a-service (SaaS) based ERP solutions?

Both options have benefits and both have risks. With on-premise, your business is far more likely to find a solution capable of meeting its broad collection of needs. The on-premise market segment is unquestionably more mature and well-developed. However, it's on the decline. Forrester Research, Inc. has projected on-premise ERP license sales to decline by 2.5% from the period of 2011 to 2015.<sup>1</sup>

In contrast, Forrester projects the SaaS ERP market to grow by a 22% compound average growth rate over that same period.<sup>2</sup> One reason why businesses are choosing SaaS is because of scalability benefits. They can more easily adjust their ERP spend -- and computing capacity -- in response to business requirements and market shifts. In contrast, once an ERP license is acquired, it can't be returned for a refund.

Another SaaS benefit relates to IT administration -- the ERP vendor assumes a significant portion of these duties. This means that companies can spend more time focusing on their core business and less time on IT troubleshooting.

However, there are business continuity risks inherent in SaaS that are avoidable with on-premise ERP. With SaaS, companies supply their data to the vendors, who then process, store, and deliver that data. ERP represents a company's central nervous system. Many businesses aren't comfortable relinquishing control over their mission-critical processes and data.

In this so-called tale of the tape analysis, we pit SaaS ERP against on-premise ERP across eight categories. Read on to learn which platform might be right for your business.

## Tale of the Tape: SaaS versus On-Premise ERP

Given the market hype surrounding software-as-a-service (SaaS), some may be surprised to learn that the 2011 SaaS ERP market weighed in at roughly 3.3% of the size of the traditional on-premise ERP market.<sup>3</sup>

But, this market sizing doesn't tell the whole story. According to Forrester Research, the SaaS ERP market is projected to grow by 22% compound average growth rate (CAGR) between 2011 and 2015. Over that same period, the on-premise ERP license market is projected to shrink by 2.5%.<sup>4</sup>

What are we supposed to make of these numbers? On one hand, it's clear that the SaaS ERP market is relatively immature. SaaS ERP is only now moving up the innovation curve, arguable from the innovation buyers to the early adopter buyers. This means that most businesses are still choosing to buy on-premise ERP. On the other

hand, the on-premise market appears to be on the decline. Mature on-premise vendors are now shifting research and development capital to their SaaS products. This means that buyers should expect SaaS ERP products to improve drastically in the near future.

In this Tale-of-the-Tape, we pit SaaS against on-premise across eight categories. In each category, we assess benefits and risks and pick a winner. In some cases, there are no winners because the alternatives stack up equally.

Before getting into the analysis, let's introduce the players.

### Software as a Service (SaaS)

Journalists, bloggers, and analysts use the words "SaaS" and "cloud" to describe almost anything that's accessible via a web-browser or smartphone. This type of cavalier approach to terminology usage creates confusion and does a huge disservice to the marketplace.

Fortunately, the United States Department of Commerce's National Institute of Standards and Technology (NIST) published a set of standards that software must meet to qualify as SaaS. In NIST's own words, a SaaS application is one in which:

*The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure... [Emphasis added]<sup>5</sup>*

Source: National Institute of Standards and Technology (NIST)

The key piece of the definition is that the application has to run on cloud infrastructure. NIST goes on to define cloud and identifies five essential characteristics, summarized as follows:

**1. It must provide on-demand self-service.**

This means that a cloud user can access computer capabilities without human intervention from the service provider.

**2. It must provide broad network access.**

This means that a user can connect from anywhere, with any standard device, at any time (provided there is internet access).

**3. It must provide resource pooling.**

This means that a bunch of users (or customers) share an underlying set of computing resources. This is what's meant by a "multi-tenant" model.

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**4. It must be rapidly elastic.**

This means that computing resources can be provisioned to meet changes in demand. So, if demand for computing power increases then additional capacity can be rapidly allocated to meet that demand.

**5. It must be a measured service.**

This means that the cloud provider has to meter its service, much in the same way that utilities companies meter their services. In effect, they monitor and optimize usage according to the meter readings, and bill accordingly.

**On-Premise**

Generally, when we think of ERP, we imagine the traditional on-premise model, where buyers acquire a block of perpetual licenses and install the software on servers of its choice. As long as a company complies with the terms of its license obligations, it can theoretically use the software forever.

**Breaking Down Some of the Key Differences**

SaaS' cloud infrastructure leads to certain fundamental differences from on-premise ERP. Here are three key characteristics and differences that impact buyers:

Characteristic	On-Premise	SaaS
<b>Rights and Use</b>	A software license provides a limited, but perpetual right to use the software	A subscription provides a right to access the software via the internet, but there are no transfer of rights
<b>ERP Capacity</b>	ERP capacity is tied to the number of users (named or concurrent)	ERP capacity is tied to the amount of cloud resources to which a company is subscribed
<b>Pricing Model</b>	Software is acquired via a one-time, upfront payment for licenses  Maintenance and support are paid via recurring annual fees typically calculated as a percentage of license prices	Access to the software is provided in consideration for the payment of recurring subscription fees  There are no separate maintenance and support fees (these amounts are baked into the subscription fees)

## Deciding which one is right for your business

Choosing between SaaS and on-premise ERP is not a decision that companies should take lightly. Each alternative can have materially different implications for cash flow, customizability, IT resource requirements, and control over mission-critical data. Of course, vendors from each camp will do their best to convince you that their solution is best suited to your business.

In this tale-of-the-tape analysis, we help you cut through the marketing rhetoric to the key decision factors. We've compared the two ERP platforms across eight categories. Before diving into the analysis, it's important to highlight an important caveat: the evaluations below are intended to be generalizations about the platforms. They do not represent conclusions or opinions about any particular software, and are certainly not intended to substitute effective due diligence.

Category	On-Premise	SaaS
Functionality	✓	
Total Cost of Ownership		Subjective
IT Administration		✓
Informational Access and Control	✓	
Security		Subjective
Ease of Implementation		Subjective
Scalability		✓
Ease of Upgrade		✓

The following is a more detailed account of the scoring on each of these key categories for measuring SaaS and on-premise ERP solutions.

Category	On-Premise	SaaS
<b>Functionality</b>	<ul style="list-style-type: none"> <li>✓ Generally, greater depth and breadth of functionality</li> <li>✓ Greater ability to customize</li> </ul>	

At this point in time, ERP buyers are more likely to find an on-premise system that’s capable of meeting their full collection of business needs. This is due to several factors including the fact that there is a much broader selection of on-premise systems from which to choose. In addition, on-premise vendors have been adding functionality to their software for decades. In comparison, SaaS ERP is young. Vendors simply haven’t had the same opportunity to bake functionality into their applications.

Customizability is another limitation worth mentioning. With on-premise software, businesses can modify the underlying software code as a last resort to achieve functionality. In contrast, the underlying SaaS software code is shared by multiple tenants (or companies). As a result, modifying this layer to deliver required functionality is generally a more restricted option. However, as the SaaS model matures, we expect a corresponding increase in SaaS applications flexibility. This should provide companies with enhanced opportunities to tailor the software to their requirements.

To summarize, it is rare for any ERP system to meet the collection of a company’s needs with out-of-the-box functionality. A company that is less willing to compromise its business processes is, at this point in time, more likely to find an on-premise system that meets its requirements.

Category	On-Premise	SaaS
<b>Total Cost of Ownership</b>	<ul style="list-style-type: none"> <li>✓ For comparable solutions, a 10 year total cost of ownership analysis could yield similar results</li> </ul>	

Given functionally comparable on-premise and SaaS solutions, a 10-year total cost of ownership analysis could yield similar results (including costs associated with incremental IT administration requirements associated with on-premise systems). This does not mean, however, that each has the same impact on cash flow. In fact, the cash flow effects are likely to be wildly different.

On-premise software systems typically involve a relative large, one-time upfront investment in software licenses. This investment entitles the buyer to a perpetual right to use the software. However, if the company wants access to bug fixes, help desk, and product updates, it’ll have to pay a recurring annual maintenance and support fee

that equates to roughly 18% to 22% of undiscounted license prices.<sup>1</sup> In addition, buyers oftentimes need to acquire the plumbing to support the system, including: hardware, infrastructure, and IT resources (or alternative hosting services).

From a cash flow perspective, on-premise ERP imposes a relatively heavy short-term burden, with much lower ongoing financial pressures.

In contrast, SaaS vendors charge a consistently smooth recurring subscription fee. This fee gives a subscriber a right to access the software. No rights are transferred, and the buyer never takes possession of any software.

Subscription fees include costs relating to maintenance, support, and underlying IT infrastructure. In the short and mid-terms, aggregate SaaS costs are likely to be lower than the aggregate on-premise costs over the same period. However, since the recurring subscription fees are generally higher than the recurring maintenance costs, the relative cost curves tend to converge in the long run. Thus, over a 10-year lifecycle, a total cost of ownership could be comparable.

A detailed assessment of total cost of ownership is a critical success factor for any well-informed investment decision. When assessing cost, a business should take care to perform the analysis in light of its own financial constraints.

Category	On-Premise	SaaS
IT Administration		<ul style="list-style-type: none"> <li>✓ Downloading many of the IT admin responsibilities onto the vendor provides companies with greater opportunities to focus on their core business activities</li> </ul>

Businesses that invest in on-premise ERP systems typically have IT departments ranging from one person to many who are charged with keeping the system and supporting infrastructure reliable, optimized, and secured.

One of the key benefits of SaaS ERP is that the vendor assumes a significant portion (not all) of the IT administration duties. For example, the vendor is responsible for securing the applications (both physically and virtually)<sup>2</sup>, creating redundancy, ensuring system reliability, implementing patches and updates, among other things. By

<sup>1</sup> A 3<sup>rd</sup> party maintenance and support market is emerging. Third-party providers are offering some of the services at lower rates.

<sup>2</sup> The company, however, is still responsible for administering and securing the infrastructure and devices that it relies on to connect to the ERP system.

downloading certain ERP administration responsibilities onto the vendor, companies can focus on their core business activities and avoid IT-related distractions. A note of caution: not all SaaS vendors discharge their IT administration responsibilities with the same degree of skill, care, and proficiency. When assessing SaaS solutions, it therefore becomes important to evaluate the vendors' capabilities, investments, experience, and expertise with IT administration.

Category	On-Premise	SaaS
<b>Informational Access and Control</b>	<ul style="list-style-type: none"> <li>✓ With on-premise systems, the company retains full control over its mission-critical data and is not exposed to the same business continuity risks</li> </ul>	

With on-premise systems, companies retain ownership and control over their own data. With SaaS ERP, the vendors control, process, store, and deliver end-user companies' mission-critical data. This latter scenario introduces potentially significant business continuity risks.

For example, under what circumstances do vendors have a right to refuse to make data available to the companies? What are the parties' various rights and obligations in the event of a dispute? What are the vendors' obligations to release the data upon contract termination? What are the implications for companies' data in the event that a third-party asserts a claim for the vendor's assets?

Before entering into any agreement, it is critically important for companies to negotiate contractual terms and conditions that protect their rights to their own data.

Category	On-Premise	SaaS
<b>Security</b>	<ul style="list-style-type: none"> <li>✓ Unlike cloud software providers, most end-user companies are not in the physical and cyber security business</li> </ul>	

One of the biggest myths is that companies using SaaS ERP are more exposed to security breaches and data theft. In most cases, this misconception results from fear relating to loss of data control, not from actual fact. Unless an end-user company has the capabilities and resources to run a secured data center, it probably can't provide the same level of protection as a SaaS provider.

Certain SaaS ERP vendors house their ERP software in data-centers built with vault-like constructions that can withstand bomb attacks. Many also employ around-the-clock cyber security experts who are responsible for virtual security. In contrast, many



companies house their ERP servers in unlocked storage rooms or closets, and seldom turn their minds to virtual security issues.

Having said all of this, it is important to note that not all SaaS vendors approach system security with the same degree of diligence. A case-by-case analysis therefore becomes critical.

Finally, a company would be mistaken to think that an investment in SaaS absolves it of any and all security responsibilities. Companies should still take appropriate measures to properly define access rules and roles, and to secure their own networks and devices.

Category	On-Premise	SaaS
<b>Ease of Implementation</b>	✓ Data migration, change management (including training), and systems testing are equally critical and complex	

Contrary to popular marketing hype, ERP implementation is neither easier nor quicker with SaaS.

Data migration, change management (including training), and system testing are critical success factors for any system implementation. If two systems – one SaaS and one on-premise - have comparable levels of functional and technical complexity, the implementation efforts are likely to be similar.

In any event, speed of implementation should seldom be a leading priority. Rather, companies should prioritize successful project execution.

Category	On-Premise	SaaS
<b>Scalability</b>		✓ SaaS applications, unlike on-premise solutions, can be scaled up or down on-demand in response to changing needs

Scalability is a key differentiator of SaaS solutions, and one that many companies don't pay sufficient attention to.

One of the key characteristics of a cloud-based architecture is rapid elasticity. If a company requires additional ERP capacity, a SaaS solution can be rapidly and easily scaled up. Similarly, if a company needs to reduce its ERP capacity and associated costs, it can generally do so with minimal effort.

In contrast, on-premise ERP capacity is determined by the acquisition of software licenses. If a company wants to increase its ERP capacity, it has to acquire additional licenses. And, the acquisition process is manual and potentially cumbersome. The company likely has to contact its sales rep, who typically has to create a contract and a sales order, and subsequently have that order processed internally. Since licenses are non-refundable, a company can't scale down its license fee requirements.

Category	On-Premise	SaaS
<b>Ease of Software Update and Upgrade</b>		<ul style="list-style-type: none"> <li>✓ Barriers to upgrades, including cost and customizations, are lowered with SaaS applications</li> <li>✓ Upgrades and updates are pushed out to users simultaneously and on a more frequent basis than on-premise upgrades and updates</li> </ul>

Software upgrade and update paths are critical success factors for any ERP project. Businesses invest in ERP for the long-term, expecting their ERP systems to grow alongside their organization.

With on-premise systems, many companies face significant barriers to implementing updates and upgrades. Customizations create one such barrier – they either have to be recreated or worked around, which oftentimes introduce unpalatable complexities, risks, and costs. Consulting time and expenses are also often cited as other impediments.

In contrast, SaaS vendors can push out regular updates and upgrades in an almost imperceptible manner to end-user customers. And, companies can oftentimes enable the incremental features and functions with a simple click of a mouse.

### Conclusion

There is little doubt that SaaS ERP represents the wave of the future. Notwithstanding the fact that the SaaS market is generally functionally underdeveloped relative to its mature on-premise cousin, it offers some unmatched benefits, including: scalability, ease of upgrade, lower IT administration needs. However, SaaS introduces inherent business continuity risks associated with the relinquishment of data control. Unless businesses choose to outsource the hosting of their on-premise systems, they can avoid these risks.

In the final analysis, deciding between SaaS and on-premise will inevitably be one of tradeoffs. The key to making an effective decision is to prioritize business requirements

across an expected investment horizon. Only then will a company be in a position to make a value-maximizing ERP decision.

## About the Expert



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<sup>1</sup> According to revenue projections by Forrester Research in May, 2011. The analysis compares the sum of on-premise license and maintenance support revenues against SaaS subscription revenues. Service-related revenues are excluded. China Martens, Paul D. Hamerman, "The State Of ERP In 2011: Customers Have More Options In Spite Of Market Consolidation", May 12, 2011: Forrester online: <http://www.forrester.com/The+State+Of+ERP+In+2011+Customers+Have+More+Options+In+Spite+Of+Market+Consolidation/fulltext/-/E-RES55901>

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

<sup>5</sup> Mell, Peter, Grance, Timothy, The NIST Definition of Cloud Computing, Special National Institute of Standards and Technology – U.S. Department of Commerce, Publication 800-145 (USA: 2011), online: <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>.