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Nine questions to ask about SaaS

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Executive summary

The Ovum view

Software-as-a-service (SaaS) is an attractive alternative to on-premise computing, and many suppliers now use the SaaS model to deliver applications such as sales-force automation, customer relationship management (CRM) and human resource management. A smaller, but growing, number of providers also use SaaS for more complex applications, such as enterprise resource planning (ERP) and supply chain management.

However, SaaS does not spare customers the need to ask vendors the same questions about service levels, costs and other issues that they would ask themselves if they were planning on-premise implementations. SaaS providers' answers to some of those questions may not be ideal because, for example, long-term costs are usually higher for SaaS than for on-premise computing.

Customers' needs can change for any number of reasons – such as growth, acquisitions or changes in the competitive landscape – so the right SaaS-versus-on-premise choice today may not be the right choice tomorrow.

Of the nine questions customers should ask about SaaS, seven also apply to on-premise deployment. However, the issues of changing needs prompt two more questions unique to SaaS. These involve the option of shifting from SaaS to on-premise implementation of the same application and vice versa, and the range of choices among hosting providers.

Question one: what are my requirements?

ERP is a special case

This question can only be answered by customers themselves. Customers must be certain of what applications and processes they are considering, and sure of their needs in terms of scale and performance and availability levels.

Assessing availability and performance requirements calls for an understanding of how critical an application and any dependent processes are to a business, and what the consequences of a service outage would be.

Different applications have very different requirements. An HR application, though important, is not mission-critical – an outage of even a day or more would be inconvenient, but probably would not cause a loss in revenues. Similarly, a CRM application is not critical to core manufacturing or financial processes, though a

long outage would be disruptive to salespeople and could likely cause a loss of business.

In contrast, the failure of an e-commerce application would bring web sales to a halt and immediately affect revenues; the amount of damage would depend on the length of the outage and the size and number of transactions interrupted. A company could suffer catastrophic damage in a sustained outage of an ERP solution that manages its accounting, manufacturing and supply chain processes.

There are no formulas but, clearly, a company must understand the importance and sensitivity of the processes for which it is weighing SaaS versus on-premise computing.

Question two: what's the service history?

The proof is in the details

With that kind of baseline information in hand, the next question a customer must ask of SaaS providers is about their level of service, in terms of availability and performance. Customers should not judge SaaS service levels against an ideal of 100% availability, but against the level they would achieve if they ran an application in-house (and against the requirements they have already defined).

The best assurance that there will be no major problems is an examination of potential providers' track records. The problem here is that although SaaS providers publish histories of their service levels on their websites, these are not detailed and do not go far back in time. Some large providers' records only go back for thirty days. This is a snapshot, not a meaningful picture of their service over time. Businesses must ask providers to supply them with histories covering several months, if not longer.

Question three: how strong is the SLA?

Fallback procedures must be considered

SaaS providers do not always offer service-level agreements (SLAs). Even when they do, they often impose very weak penalties, such as a prorated rebate against future charges. That would be little compensation for a customer that lost business or incurred emergency expenses because of a lengthy SaaS outage.

Establishing fallback procedures to be used during a service outage lessens the impact of those outages. Such procedures also help businesses to understand exactly how painful an outage is, and to decide the service levels they need. Fallback procedures that involve expensive in-house IT systems seriously undermine the advantage of SaaS.

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Question four: how much can we customise the application?

Consider long-term needs

Many SaaS services are based on a multi-tenancy architecture, in which multiple customers share access to a single instance of an application, rather than single-tenancy architecture, in which each customer accesses its own application instance running on a dedicated physical or virtual server.

Multi-tenancy reduces costs for SaaS providers, but limits the degree to which businesses can customise applications to suit their own needs. In both multi-tenancy and single-tenancy services, the degree of customisation varies according to how the base application was coded. Businesses should ask providers whether they can expect the same level of customisation they would enjoy with on-premise applications.

In all cases, customers must reassure themselves that the application delivered by the service provider will meet their future needs, or can be tailored to do so. This is much more important for ERP and CRM applications than, for example, simple office productivity tools.

Question five: when does break-even come for SaaS versus on-premise?

Estimating on-premise costs can be complex

A choice between SaaS and on-premise computing is effectively a choice between renting and buying an application, as well as a decision of whether to invest in infrastructure or services. Smaller businesses may not have this choice because they cannot afford the upfront costs of implementing applications in-house. However, this is still a plus for SaaS – it gives such customers a way of accessing applications that they could not otherwise afford.

Other businesses need to be aware that although SaaS has the distinct advantage of very low start-up costs, in the long run it will probably cost more than the equivalent on-premise solution. This is true for rental versus purchase of any product or service over extended periods. Businesses that can afford the upfront costs of on-premise computing should bear this in mind. The exact length of time after implementation that SaaS costs take to break even with on-premise costs varies according to the application and service provider, but some vendors estimate the break-even point at five years after implementation.

Although the calculation of SaaS costs is simple, the same is not true for on-premise costs, which are always tough to estimate because they rest on assumptions about the amount of time IT administrators spend maintaining servers and applications. In addition to hardware and software licence purchase

costs and maintenance fees, on-premise costs include items that do not apply for SaaS, such as administrator training and the implementation of software updates. A rough rule of thumb is that software licences usually account for about 25% of IT costs in typical businesses.

Alongside costs, businesses must consider SaaS benefits. SaaS can put new applications into service faster than on-premise computing – thus increasing a business's revenues or reducing its costs and, hence, increasing its bottom line – sooner. The usefulness and quality of an application and its support also have to be considered and, for some SaaS applications, these are higher than for on-premise licensed software.

Question six: how will my costs increase if I scale up?

Pricing schemes vary

One of the virtues of SaaS is that it allows customers to easily scale up an application – without the difficulty of predicting IT loads and the expense of then reworking on-premise systems. Better still, SaaS applications can be scaled up with very predictable costs. Businesses can start small and, if they like the application, they can roll it out to more seats or employees.

However, the way SaaS providers charge for extra seats or employees will affect the cost of scaling up. Some providers allow access to applications by named employees only, and some by unnamed seats, and some simply charge for the number of servers running the application in a single-tenancy set-up. Others allow seat or employee numbers to be scaled up, but not down. All of this affects scaling costs.

Question seven: how safe will my data be?

SAS 70 isn't the whole answer

Security and the backup of data, compete with loss of control for the status, make up the biggest concerns about SaaS. Confidential sales and financial data handled by ERP applications must be stored and backed up by a SaaS provider as securely as it would be by an on-premise application. In both cases, data handling must also comply with applicable data protection regulations. Businesses signing up for SaaS are subject to due diligence to ensure that this is happening.

In the US, the first answer given by SaaS providers to security questions will be that they have been audited to the American Institute of Certified Public Accountants (AICPA) SAS 70 scheme. However, these audits are not security certifications, and SAS 70 is not a security standard. The AICPA itself is adamant on this point.

SAS 70 is a mechanism for the auditors of a service provider to share information with the customers of that service provider and those customers' auditors. SAS 70 audits are highly customisable, and the standard does not include specific IT security requirements. One fact that underlines this point is that the AICPA has developed schemes, called WebTrust and SysTrust, which explicitly address security and related issues and, unlike SAS 70, are based on predefined principles and criteria.

This does not mean customers should write off SAS 70 audits as worthless with regards to security, but it does mean that they need to read them closely. A small catch here is that service providers are only allowed to hand SAS 70 audits to existing customers. Therefore, customers only get to see SAS 70 audits after they have committed to a service. Before they do that, they can ask their own questions about security.

- How can customers control access to applications over the Web – are there options for two-factor authentication (pocket devices or passwords) at log-in, session time-outs, or profile factors such as log-in times and IP addresses?
- What controls do they apply to their own employees and any subcontractors to limit their access to customers' data, what background checks do they carry out when hiring staff, and what physical controls do they apply to building access?
- How do they guarantee that customers' data has been shredded when a service contract ends?
- How do they back up data to protect it against loss from system failures?

Question eight: how easily can I switch between on-premise and SaaS?

Shifting needs call for flexibility

The previous questions may give readers the wrong impression that SaaS should be treated with enormous suspicion. That is not the case. The same questions about service levels, security and costs should be asked when businesses are planning to run applications on their own premises. SaaS is a valid way of accessing applications, and has the undeniable virtues of rapid implementation, easy scaling, and little or no start-up costs.

However, the value of SaaS varies according to customers' individual circumstances. If a business's IT resources or requirements change, the trade-offs between SaaS and on-premise computing will also change. For this reason a number of SaaS providers are planning to or already offer customers the ability to switch between the two models, in either direction.

This flexibility is useful, but customers need to know in advance how easy such a switch would be, and whether, for example, they would be able transfer application data and customisation between the two models. For example, if a business

deploys an application mainly on-premise, but supplements it with a hosted implementation to support a newly acquired subsidiary, it will need to be able to apply any application customisation to both models.

Some suppliers use the same code for both on-premise and SaaS usage, which makes the switch between the two models far easier. In other cases, when different code is used, customers will be faced with issues that could resemble those of a conventional application migration.

Another important question is whether the on-premise mode will involve a conventional perpetual software licence or annual subscription fees, because this will affect cost projections significantly.

There are multiple situations in which customers may want to switch between the two deployment models:

- Starting with SaaS because of limited internal resources and later switching to on-premise computing. Small businesses can take this path when they have expanded sufficiently, to afford the upfront costs of on-premise computing.
- Using SaaS to quickly support new business projects or mergers – and later moving applications in-house as resources become available or as business grows.
- Moving from SaaS to on-premise computing as applications are scaled up – cost comparisons for SaaS versus on-premise computing depend greatly on the number of seats or employees accessing an application. For limited deployments, SaaS is more economical than on-premise computing. However, if companies later scale up application usage, moving an application on-premise will reduce costs.
- Meeting changed regulatory environments – when, for example, a business has entered a new market or territory, or begun a new commercial project for which SaaS is no longer compliant with data regulations.
- Moving from on-premise to SaaS to free up IT resources – this may be only a short-term move to release resources for use on temporary projects, or to meet requirements resulting from, for instance, a business merger or seasonal workloads. It may also be a long-term move, when businesses have gained confidence in cloud service and security levels.
- Accommodating changes in internal IT costs – total cost of ownership for on-premise applications involves both fixed and incremental data centre costs. Expansion of IT operations will change the ratio between these costs, altering the balance between SaaS and on-premise computing.

The code question

SaaS vendors that offer a choice of deployment options include giants such as Microsoft alongside smaller service providers such as Acumatica, Epicor, Infor and Sage. However, for these and any other suppliers, customers should determine how easy it will be to move from one deployment option to another, and whether

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the same software is used for both SaaS and on-premise deployments. In most cases, established vendors' on-premise and SaaS offerings are based on different code, simply because their SaaS offerings are more recent. In contrast, smaller suppliers such as Acumatica can support multiple deployment models on the same application code because the code is written to the latest web standards. This allows their SaaS option to support even ad hoc arrangements between customers and third-party hosting providers.

Either way, Ovum believes customers can only benefit from a choice of deployment model.

Question nine: am I able to choose my own hosting services provider?

Choice isn't universal

Another degree of freedom is the ability to choose not only between SaaS and on-premise computing, but which service provider will host an application. Some are available only from one provider, but others have been engineered for web access, and therefore can be hosted by a range of hosting service providers. This allows customers to choose between different service and security levels and shop around for the best prices.

Table 1 **SaaS, application hosting and on-premise computing – a comparison**

	SaaS	**Application hosted by hosting provider**	**On-premise computing**
Purchase hosting from	SaaS provider	Choice of hosting company	N/A
Software licence	Subscription-based	Customer owns perpetual licence	Customer owns perpetual licence
Responsibility for application uptime	SaaS provider	Hosting company or customer, depending on service contract	Customer
Help-desk support provided by	SaaS provider	Reseller	Reseller
Database location	Decided by SaaS provider	Decided by customer	Decided by customer
Responsibility for data backup, applying software upgrades	SaaS provider	Hosting company or customer, depending on service contract	Customer

Source: Ovum