

SaaS: Right for You?

By Sean A. Murphy

Sean A. Murphy (sean.murphy@reedbusiness.com) is associate editor at *Supply Chain Management Review*.

In the past decade, Software as a Service (SaaS) has evolved from a technical fad to a value generator for many supply chains, especially those involved with Transportation Management Systems (TMS). Now, SaaS is beginning to branch out into other supply chain activities like demand planning and supply management. Here's how to determine if SaaS is right for you.

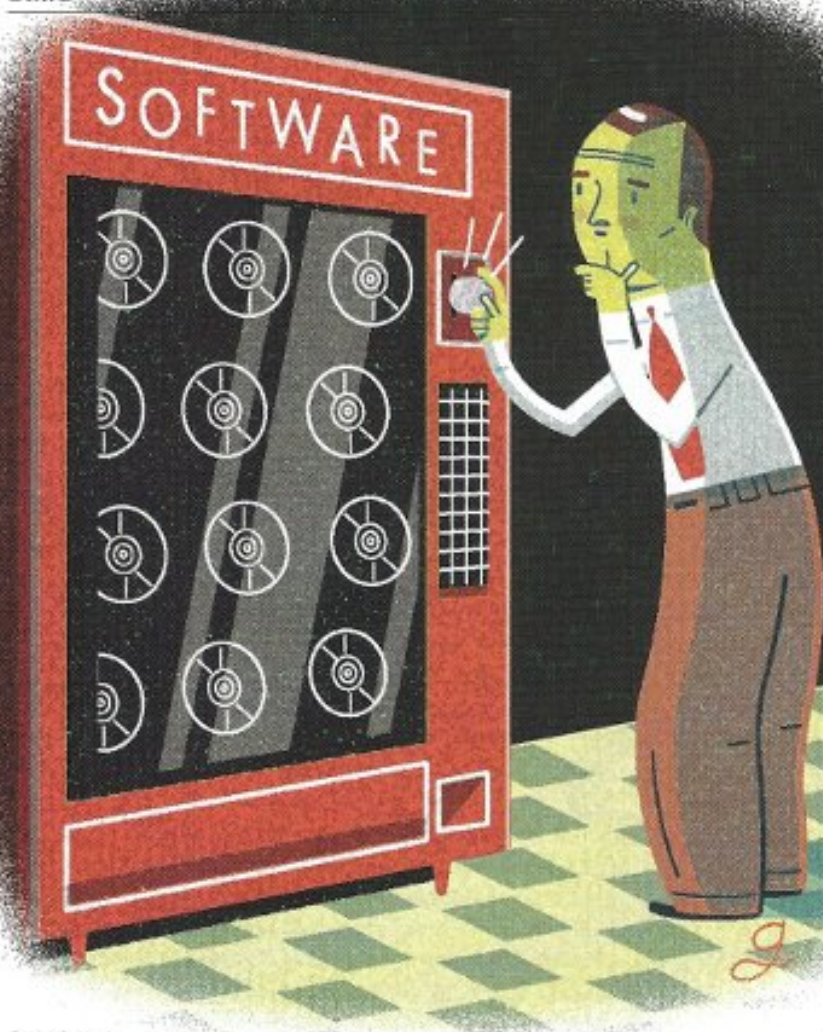
Software as a Service (SaaS) was a new technological idea 10 years ago. And like all technological innovations, it probably had an equal chance of becoming widely popular, a tool for generating value, or written off as a neat idea destined to be remembered as nothing more than a fad.

Now, a decade later, SaaS is clearly no passing fad (Exhibit 1 shows SaaS growth rate for 2007-2008 compared to more traditional "in-house" software and technology). With the growing need for intricate networks of data, and equally intricate methods of storing, accessing and delivering that data, many companies are discovering that building such a network—not to mention writing software to run it—is a daunting task. This is to say nothing of what it takes to maintain and operate such a network once it is up and running.

Naturally, that takes time and resources away from what the supply chain manager should be doing—managing the supply chain. SaaS is designed to fix that. The concept is simple: a third-party provider offers, for a subscription fee, to set up servers to host the company's data, and the technical infrastructure needed to manage it.

For some supply chain managers concerned with transportation management, this has been a godsend. (See accompanying sidebar for how Welch's has put SaaS to use in transportation management.) But according to analysts, academics and SaaS users who spoke with *Supply Chain Management Review*, SaaS is branching out into demand planning, forecasting, supply management, and may expand even further into common supply chain management practices.

In this article, we discuss what SaaS can do, where it's going, and whether it's right for the supply chain management model. We also include things to watch out for when setting up a SaaS system, and we offer two brief case studies from GE and Welch's describing what SaaS has done for them.



Daniel Guidera

A SaaS History

The early versions of SaaS date back to the late 1990s. These offerings were driven by venture capital firms, who began putting their backing behind companies that were willing to use this nascent technology, according to Bruce Richardson, chief research officer at AMR Research.

But it was not an easy beginning. Chris Caplice, executive director at the Massachusetts Institute of Technology's Center for Transportation and Logistics, said the first SaaS offerings focused on transportation management, and had no other applications available.

And for those using SaaS for transportation management, Caplice said upgrades were often a problem. The systems were advanced enough to send out automatic software updates, but if, for example, the system

served 20 customers, all 20 of those customers had to be online at the same time in order for the upgrades to work. "It was a little clunky," he said. Since then, SaaS has evolved to the point where today's providers are more likely to keep the most critical upgradeable systems separated enough from their customers that upgrades will go more smoothly, Caplice said.

Transportation management is still king in the SaaS world, according to Dwight Klappich, vice president of research at Gartner. In particular, transportation systems, where companies need to stay connected to a vast network of carriers, still benefit more from SaaS than any other supply chain-related function.

But other supply-chain related functions such as demand planning, forecasting, inventory and combinations of these functions such as collaborative planning, forecasting and replenishment (CPFR) are becoming more and more mainstream for people looking to use SaaS, said Ben Pivar, vice president of CapGemini's North American Supply Chain Practice.

Another parallel trend worth mentioning is the increased willingness to give up proprietary software systems in favor of packages from software vendors such as

EXHIBIT 1

SCM Total Revenue and Share by Revenue Type, 2007-2008

Revenue Type	Revenue 2007 (\$M)	Revenue 2008 (\$M)	Revenue Share, 2007	Revenue Share, 2008	Growth Rate 2007-2008
Application Software Licenses	2,144	2,173	33%	33%	1%
SaaS	323	401	5%	6%	24%
Application SW Maintenance	1,646	1,704	26%	26%	4%
Implementation/Service/Consult/Custom Development	2,311	2,372	36%	36%	3%
Other	29	30	0.5%	0.5%	4%
Total	6,455	6,681	100%	100%	4%

Source: AMR Research

Oracle and SAP. While not necessarily a move toward SaaS, Pivar said migrating to software packages might serve as a gateway to SaaS, building up a company's trust in third-party involvement to someday motivate them to taking the plunge.

SaaS is also becoming more popular in global trade management. There, Klappich said, the emphasis is on content and regulation compliance, as opposed to network management. "There's a shift from SaaS being an option to being a preference," he said.

SaaS and Inventory Management

One function that has not yet become a popular SaaS option is warehouse management systems (WMS), says Klappich. Since SaaS is, by definition, designed to involve networks of disparate sources of data, warehouses, which often are contained within one building, don't need SaaS. "There's really no advantage," the analyst said. "It's a very on-premise function, by and large."

There's another problem with WMS-related SaaS products: computing power. Managing a large warehouse full of inventory can involve tracking millions of SKUs with millions of variables. "That just chews up compute power," Klappich said, making SaaS actually a less-effi-

cient alternative to traditional WMS.

The one scenario that could make sense here is using SaaS to track inventory that was spread out over multiple locations. For example, Klappich said, airplane manufacturers often keep spare parts scattered at various airports worldwide. He also recalled a client that was selling medical testing equipment, which required the distribution and tracking of small packets used by doctors.

"They needed some of the same capabilities of a small WMS," Klappich said of this particular situation. Granted, some of the "warehouses" in the network were nothing more than a few shelves in a supply closet in a clinic somewhere, but no matter what the network of locations looked like, SaaS kept track of the inventory like it was all in the same building.

A more common example of SaaS being used to maintain inventory is in consumer service systems, which includes everyone from the local plumber with spare washers on his truck to high-tech computer parts in the vans run by Best Buy's Geek Squad mobile computer service. "That is mobile inventory," Klappich said, and as such could benefit from a SaaS-based inventory tracking system.

Cheaper and Easier

One of the biggest draws of late to SaaS, especially given the current state of the world's economy, is price. "There's no doubt that SaaS is less expensive than on-site software," AMR's Richardson said.

CapGemini's Pivar called the idea of implementing SaaS "very compelling" for small to medium sized business, which he defines as up to \$1 billion companies. In addition to price, he cited another big selling point for the concept: Ease of installation. Companies paying for SaaS technology don't have to worry about delivery of hardware or software, Pivar explained. They also don't have to hire anyone to install it all. This cuts down dramatically on the cost and time involved in implementation.

AMR's Richardson noted that upgrades are easy, too. With on-site software packages, he said, it's often unclear when an upgrade will be available or necessary, and even then, costs for upgrades can vary widely.

Welch's Gets Out of TMS Jam

Welch's is now putting SaaS to use to improve its transportation management. Bill Coyne, director of purchasing and logistics for Welch's, said one of the jam and fruit juice company's most notable forays into SaaS was the adoption of a new, outsourced transportation management system which first went online in early 2008. That system, Coyne said, allowed all data connected to Welch's transportation and logistics, including shipments, freight bill pay, and other statistics to be collected together in a third-party company's "data warehouses."

For Coyne, it wasn't the outsourced model that attracted him, but the idea that all relevant data was available to him. The SaaS provider, Coyne said, is able to deliver the data in any form Welch's needs. "They allow us to slice it and dice it any way we wish," he said.

For example, Coyne said analysis of delivery patterns to regular customers has exposed inefficiencies such as a partially-full truckload going out. Since a fully-loaded truck costs Welch's the same as a partial load, Coyne said the analysis of the data has led to Welch's suggesting alternative delivery schedules and volumes to customers.

Coyne declined to say exactly how much Welch's has saved in logistics costs so far using the system, but he said it was a "significant" savings. Considering Welch's spends over \$50 million a year on transportation, the savings have more than justified sending the data to an outside source for management.

"We don't really care if we're drawing from an internal source or an external source," he said, summoning up the project's success.

SaaS, on the other hand, often lumps upgrade fees into the overall subscription fee. While the customer rarely knows just where all the subscription money then goes, updates are largely automatic, and don't cost the customer anything additional at all.

But Is It Safe?

Despite the increase in popularity of SaaS, some companies still hesitate, in large part due to concerns over security. "Some of the larger companies are still a little skeptical about losing data," CapGemini's Pivar said. "It's a trust issue."

In addition, CIOs often have trouble integrating SaaS applications into their IT model. In some cases, it's a technical issue—it can be difficult to incorporate SaaS into a system dependent upon client/server setups. Sometimes, however, it can be the CIO's fear of losing control, Pivar said.

They are somewhat justified, according to Richardson. Handing over control to a third party means you're at their mercy when things go wrong. Even the largest companies promoting SaaS-type products like Amazon, Google, and salesforce.com have experienced outages. Richardson cautioned that any company looking into SaaS needs to do research on a potential provider's redundancy and robustness.

Loss of control is not the only concern, Richardson added. Many companies, he said, have been gun-shy about using SaaS applications because of fear that the third-party provider will somehow get hacked, leading to very costly and very public cases of customer credit card numbers or other information being stolen.

In truth, though, Richardson said the SaaS industry as a whole has been aware of this concern, and responding well enough to the demand that outsourcing data to another company's center might be safer in the long run than keeping everything in-house. "There's an excellent chance they've got far better security than you do," he said.

MIT's Caplice also said he doubted SaaS was any more risky than any other venture for a company. "My sense is, it's a risk," he said, "but it's minimal." Caplice added that the term "in house" is becoming a thing of the past. Even companies that don't use SaaS often keep their data centers at another location anyway.

In evaluating whether to adopt SaaS for supplier management, GE took the threats of data loss or security breaches seriously, said Tom Hattier, GE's manager of shared sourcing interests. But the company ultimately determined those concerns were a cost of doing business. "It's just another level of risk to worry about," he said. (For more on GE's experience with SaaS, see accompanying sidebar.)

As part of the "loss of control" issue, Caplice noted many companies that use SaaS have to get used to less customizability. Often, a user gets what the provider wants to provide, whether it's a perfect fit for the customer's needs or not. This will give larger companies an advantage, Caplice said, since "as you get bigger, you get more accustomed to standardization." Smaller business, on the other hand, which are used to building their own custom applications will have to learn to adjust.

For any software provider, including SaaS, developing standard approaches that address how to interact with carriers, data fields, determine who can see what, and

GE Lights up Global Suppliers

In November of 2007, GE was evaluating how it managed its global supplier list, which the company maintained back then on an in-house server. GE naturally needed to communicate with its suppliers from time to time, and suppliers needed to convey information such as banking data and updated contact names, addresses, and phone numbers back to GE.

At the time, all that was literally being handled by several roomfuls of people on telephones at GE relaying information back and forth. With half a million suppliers to keep in touch with, GE decided it needed a better way, according to Tom Hattier, manager of shared sourcing services for the company.

At first, GE was content with trying to develop a system to automate the process on its own, until they discovered a SaaS provider, Aravo, which worked largely in the area of supplier management. "It was the closest thing we'd seen to what we wanted to do on our own," Hattier said.

In addition to hosting the supplier information, Aravo will act as the go-between GE needed to streamline the exchanges of information between the company and its supplier.

Aravo's system was installed and live in six months, only a third of the amount of time it would have taken GE to build its own. "That was certainly a factor," Hattier said of GE's decision to go with the outsourced option.

But a philosophical issue also drove the company to hire Aravo to manage GE's supplier list. While GE was certainly capable of building its own system, Hattier said, why should they, since GE is in the business of making, among other things, jet engines, light bulbs, appliances and health care equipment? "There's still the issue of are we in the vendor management software business, and we're not," Hattier said.

other concerns is a daunting task. "No software is flexible enough to handle every situation," Caplice said.

Taking the Plunge

CapGemini's Pivar said supply chain managers mulling over a switch to SaaS should start with a clear understanding of the technology, and what it means. Specifically, potential SaaS customers need to know that subscribing to a third-party SaaS program usually involves sending potentially sensitive company data outside the firewall and internal networks.

SaaS customers also need to know what security measures are in place, where your data is, who is guarding it, and how you can get at it. "To some extent, they need to be comfortable a little bit with giving up control," Pivar said.

Pivar added it pays to do the research. Once the subscription is bought and the data offloaded, the SaaS customer could be stuck with the chosen vendor—for good or bad. Like any customer buying any product or service, there's a chance the SaaS provider's service will not live up to its advertising, or that the provider doesn't evolve fast enough to keep up with the technology down

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the road. If that happens, and the customer wants out, it might not be easy. "The switching costs of going to another provider could be high," Pivar said.

Pivar said customers will also have to get used to a new way of paying for the technology. The pay scales and terms of SaaS are often handled on a subscription basis, which is vastly different from the one-time license fee purchase of software package. "They need to be comfortable with that model."

Gartner's Klappich also warned about checking the terms of the contract. Prices and other terms of a SaaS contract are very different from packaged, in-house software contracts. He cautioned potential buyers not to sign a contract that's too long-term—two to three years is normal. "Remember, if you make a bad decision, you're stuck paying for it," he said.

Klappich echoed Hattier's advice on not taking the vendor's word for anything. Model out the ultimate cost of ownership, including maintenance costs. And since service terms will be dependant on third-party software or hardware, it pays to make sure there won't be any additional costs from those third-party companies, Klappich advised.

SaaS may be ruled by transportation management applications today, but AMR's Richardson believes that's due to change. Already, he said, the trend is leaning toward including more sourcing and procurement services—and that will likely continue.

Both CapGemini's Pivar and Richardson said SaaS will become more a part of "cloud" computing in the future. While the concept of the "cloud" continues to evolve, making a firm definition impossible, it is led by companies like Google's online applications such as Google Docs. The concept is virtually identical to SaaS: Use a virtual, offsite data center to host and run various business applications. In essence, Richardson said SaaS and "cloud" computing are the same thing.

Stepping Into SaaS

It's clear that SaaS is not for everyone. For now, anyway, companies that keep inventory in one or very few locations will likely have little need for a SaaS-based warehouse management system, nor will any supply chain manager with little or no transportation management responsibility.

Until recent years, for almost any application outside of hardcore TMS, SaaS could seem like overkill. In addition, the increased risk of loss of control, and keeping sensitive corporate data on a server somewhere outside the company firewall, and away from the company's protection, would seem to discourage interest in the technology. But that could change soon. SaaS applications that handle demand planning, forecasting, and collaborative planning, forecasting and replenishment are becoming more popular, especially with the current economy driving a need for a cheaper, more efficient way of managing data.

So what if you want to get in on the action? There are plenty of choices. In evaluating these choices, tops on your list of concerns would have to be security. It's crucial for your provider to be able to demonstrate that your data will be safe, both from thieves and accidental outages. In other words, get ready to add SaaS to your risk management plan. Also, even if you planned from the start to hand your data and software management over to someone else, be sure you're really ready to give up control over it.

Of course, all of this means you'll have more freedom to worry about more important things, like running your supply chain. You're also sure to have a leg up over any other company that isn't SaaS-enabled, and if the future really is in the clouds, that will make all the difference. ☞