

## Software as a Service or Cloud Computing

Software as a Service (SaaS), sometimes synonymous with cloud computing, refers to the purchase of a service where the vendor provides Internet access to either a fully integrated financial management package or an individual software module for a specific purpose. Associated with the application service providers (ASP) of the mid-1990s, the concept is neither new technology nor specific to municipalities.

Generally, municipal departments would have full access, over the Internet, to a financial management software package or individual applications for a specific purpose, but the application and town data would reside with the vendor in a remote location. This is in contrast to the traditional municipal practice of purchasing a software application outright, and having it installed on a city or town server. In the latter case, stored data would normally remain on-site with the application.

There are advantages to utilizing SaaS. The municipality would have the same software functionality of a locally installed application, but it avoids upfront capital costs for software “ownership”, as well as for network wiring, servers, and other network hardware or infrastructure. Updates, patches and other software maintenance would occur automatically and without cost to the city or town. Data backups would occur nightly as well. Because multiple clients access the service at a centralized location, where most delivery issues will arise, the vendor has an incentive to ensure the stability and reliability of the system. As a result, the burden on local in-house, or contracted, technology support would be lessened. Web-based access also allows any authorized person to use the software from any computer anywhere with an Internet connection, avoiding the expense and upkeep of cable connections between remote buildings and a city or town hall server.

There are concerns as well. Most often mentioned are those involving the ability to retrieve data and data security. Since the municipal departments are entirely dependent on the Internet for access to their financial or other software, if the vendor has a single data center, any disruption of the connection could be problematic. Disaster recovery plans should show how financial applications can be restored under different scenarios. Local officials would then have to judge both the reasonableness of those plans and the acceptability of possible downtime compared to scenarios that could affect a local network based system were it destroyed by fire, flood, power surge, etc. Bandwidth is a factor as Internet transmission speeds are slower than data exchange rates between computers on a city or town hall

network. Part of the evaluation process should be a demonstration of system performance in a range of data intensive functions using either a copy of a database from a similar or larger community or through actual access to such a community's system. And, the municipality would want the ability to extract data - 24/7 - in a non-proprietary format so it can be used in a different program.

Whenever data is placed on the web, questions about security are legitimately raised. To protect its interests, local officials should determine what data security standard its information is held in by the vendor. The point has also been made that because SaaS vendors retain data from multiple clients, sometimes in a single location, they devote far greater resources to firewall security, redundant backups and other protections than a municipality. The same conclusion is drawn when vendors use a third-party for data storage, i.e., a so-called "server farm". The municipality needs to know the specifics of all contractual arrangements involved in the storage and processing of their web-based data. It is typical for software firms to purchase hosting and server services from firms that specialize in large data centers, which might be located anywhere in the country or in other countries.

Service level agreements (SLA) typically define the relationship between a municipality and a SaaS vendor. Charges might be structured as a subscription fee or on a utility computing basis. The former is a pre-set, fixed amount for the service over a particular period. The latter is a charge based on actual usage of the service.

When considering the SaaS option, we encourage department managers and staff to probe topics listed below. If satisfied with information collected and responses provided, the SaaS product may have standing as a viable option. These questions would be in addition to those specific to the overall software performance and to the individual finance department modules under consideration.

#### Questions concerning Software as a Service

1. Will the vendor provide a demonstration of the product over the Internet that shows performance as well as features?
2. Is training provided and to what extent?
3. How often will upgrades be made? Will there be notice? Training?
4. What technology support must the municipality provide?
5. Is a Service Level Agreement (SLA) available? Are the terms negotiable?

6. What guarantees and limitations on liability are included in service agreements?
7. What is the level of security that protects data?
8. Has vendor security ever been breached?
9. Has any data stored by the vendor ever been lost internally or corrupted?
10. Does anyone other than designated municipal employees have access to stored data?
11. Where is data stored? (City, town, state, country?)
12. Do local users have full-time access to its data?
13. Can the municipality copy or extract its stored data in a non-proprietary format?
14. Is stored data backed-up? How often and by what means?
15. Does the vendor and subcontractors have tested disaster plans? Does the vendor offer extra cost data and application recovery services?
16. How long have all vendors involved in the service been in business?
17. What portion of the company's business are municipal contracts?
18. Can the vendor provide a list of Massachusetts clients?
19. What happens to data if the company fails or discontinues the SaaS product?
20. How will the municipality be charged for services? Are there alternate pricing structures?
21. What is the SaaS pricing history?
22. What other fees are related to the SaaS?