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Take E-CAD to the Cloud?

What Has Been Your E-CAD Software as a Service Experience? Share With Us

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E-CAD seems like a perfect application for the concept of 'software as a service.' There's tons of data to be stored, the data needs to be accessed by multiple users, there has to be tight version control, and nothing has to happen in real time. The software itself is very complex and requires frequent updates, so this also seems to fit the software-as-a-service model. Does anyone have experiences they can share about E-CAD software as a service?

—*From September '11 Control Design*

Answers

Cloud Control
Cloud thinking is cool, but does not necessarily reduce cost of ownership in the long run. It allows a lower barrier of entry by potentially reducing investment cost and replacing that with a monthly fee.

In general, when looking at the cost of ownership of a system and comparing the investment route with the associated depreciation and maintenance costs as a cash flow effect vs. cloud hosting and its monthly fee, the cloud is a more expensive way to go.

In addition to that, most serious design organizations have a requirement for some level of integration with other systems. Those systems all need to work in harmony with regards to release levels, both with

integrations as well as operating systems.

In our experience, this mix creates an ecosystem of software that needs to be carefully managed with update and revision control, and I do not see how this could easily be maintained if some of the core operating systems as well as database environments are sitting in a cloud somewhere. There would be limited access and control to the core, which could potentially be updated without consultation with the user/subscriber. This could create all sorts of sync and compatibility issues for projects.

If you therefore consider the use of design software in isolation from other sets of software like mechanical CAD, PLM or even ERP, with a low barrier to entry but slightly higher cash flow impact, I guess cloud services could be a scenario to look at. I am not convinced that such a technical platform would be mature enough to use as an enterprise solution.

Hendrik Stoltz, director, Elopak Equipment Supply,
Elopak, www.elopak.com

It's a Game Changer

Is E-CAD a perfect application for the concept of software as a service? Well, it depends.
Software as a service (SaaS) is one of the three main application fields related to the highly topical paradigm of cloud computing. The other two application fields are infrastructure as a service and platform as a service. Simply put, cloud computing might be considered a fancy term for networked computers that provide services (or resources) through the Internet to a network of clients who use them. The now demystified cloud can be public, private or a hybrid. In other words, companies can choose to implement their own internal cloud as a LAN (private cloud), use the cloud-infrastructure from a third-party provider (public cloud), or opt for a hybrid—to rent and run SaaS in the public cloud and store application data in a local, private cloud, for example.

We should take a look at some of the pros and cons of cloud-based E-CAD (or E-CAD SaaS). Running the software on somebody else's server through the cloud and paying a small fraction of the original license fee on a pay-as-you-go usage base certainly is appealing. Time- and cost-intensive software updates and maintenance issues are out of the picture as well.

On the downside, an internal LAN connection allows significantly faster data transfer rates than an Internet connection. Rendering CAD data can demand a lot of computing power, and running it over the Internet could cause a slight lag in response time. Whether that lag is tolerable or not depends. Although it might be perfectly acceptable in an E-CAD training environment, it could be annoying (and costly) in day-to-day full-scale design operation. In practice, most companies choose speed over cost and prefer to run their software locally. One way of minimizing the response lag is to store E-CAD data and software on the same server. The less data we need to transfer through the cloud, the better (and faster/cheaper).

In light of this, it becomes apparent that providing/renting storage space as a service through the cloud is yet another interesting business model to consider. Pay-as-you-go rates for data storage might be significantly cheaper than purchasing your own hard disk drives and, similar to the SaaS case, hardware maintenance and replacement are no longer an issue.

What I haven't talked about yet is the issue of data security. Not knowing exactly where in the cloud sensitive data is stored and what is going to happen to it in case of a blackout or server crash is a major concern for any company. Overall, the risk of losing data is relatively small. Major, well-established providers of cloud-based services usually clarify all data security and IP-related aspects in their terms and also provide testimonies of high-caliber clients with highly confidential data. If such information is not provided voluntarily, it should raise a red flag.

Whether E-CAD software and/or data storage as a service makes sense for your company—at this very moment—needs to be determined on a case-by-case basis and with a thorough ROI analysis. Technically, it sure works. The technology is there and new "everything-as-a-service" business models mushroom daily.

Overall, the paradigm of cloud computing is expected to be a major game changer and long term there is no way around it if you want to stay competitive. Another strong point for moving E-CAD software and data into the cloud is that of collaboration. Cloud-based E-CAD significantly increases the feasibility of globally distributed E-CAD and sharing of project data, including backups and revision management.

Long-term, computer-aided product development in general (including design, analysis and simulation, as well as manufacturing) is expected to become predominantly cloud-based. At Georgia Tech, we work on integrating digital resources, such as M-CAD and E-CAD systems, with physical resources, such as 3D printers for rapid prototyping as well as micro mills through the cloud to allow for globally distributed design and manufacture activities.

Dirk Schaefer, Assistant Professor,
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Constant Connection

Software as a service (SaaS) is defined by the ability of a service provider to streamline a client's digital data in a cloud computing environment, enabling the client to send and retrieve digital information that is stored outside of the client's IT environment. Data that lends itself well to SaaS would be similar to what Salesforce has created for CRM management, where users can get access to data without bogging down their computers or smartphones with large applications and even larger data sets. That works great with CRM and even MRP/ERP data.

The drawback to SaaS is that it requires a constant and consistent Internet connection to fetch and restore data. Some SaaS providers offer offline data services. The main intent is to be online all the time and access the data in real time. If your Internet service provider goes out, then backup or interruptive services need to be created and used until the connection is restored.

The creation of E-CAD data or drawings relies on sophisticated models or data structures to assemble and manage the documentation creation. Much of the creation process is graphical and requires a graphical interface to aid in the documents' compilation. E-CAD data can exist in many places both within and outside an origination. For instance, with our product, a basic component library is installed with the initial installation of the software, but users can access components through an Internet-based data portal.

Michael Cranmer, Area Sales Executive,
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