

A JITTERBIT WHITEPAPER

Curing the Headache of Silos in the Cloud

The Advantages of Custom Coding vs. Middleware

Executive Summary

Many business executives assume that integration is the simple process of moving data from point A to point B. Therefore, they evaluate integration solutions by the equally simple process of comparing the upfront cost. Sometimes this simple method works, but other times it creates more problems than it solves. How do you know the difference? This paper will explain.



The Many Advantages of Applications in the Cloud

Using applications in the cloud has many, many advantages. The cost of entry is much smaller than the traditional approach of resorting to IT. Instead of asking internal resources to buy servers, networks, storage, system software and then install it, the vendor provides everything needed to get their application working immediately. This provisioning means you can start implementing an application as soon as you buy it. To make their apps even more attractive, many vendors offer free trials which lowers the risk even more. Going forward, the vendor is responsible for maintaining the software, upgrading it, securing it, and meeting agreed-upon levels of service. While some IT people worry about security beyond the enterprise firewalls, most vendors can afford to underwrite a much higher level of security than the enterprise can afford.

Consequently, some of the most successful companies in technology sell applications in the cloud. Among their ranks are Salesforce, Workday, ServiceNow, NetSuite, Epicor, and BMC. Some of the most widely used apps, Slack, WordPress, SurveyMonkey, and MailChimp are also hosted in the cloud.

However, savvy executives know nothing comes without a cost.

The Disadvantages of Cloud Applications

Although in our estimation the pluses of cloud applications outweigh the minuses there are some disadvantages to using them. One of the main disadvantages is that they can create silos of information. An information silo is an application that is unable to communicate directly with other apps. A life-threatening example of a silo would be electronic medical records in the United States. Hospitals within a payer network may be able to exchange information with each other about a patient, but out-of-network facilities may not know of pre-existing conditions that could help with the diagnosis because the medical record system is not designed to exchange information with other electronic medical records systems.

There are some clear signs that your business is having a problem with silos of information when:

- **People are not getting the information they need to do their jobs.**
Here is an example. A sales rep might be asked about the status of an order when visiting a customer but cannot pull that information up from the CRM app on their phone.
- **People are manually entering data from one system to another.**
If you need to hire a temp to cut and paste information from one app to another you probably have a silo problem.
- **Bad management decisions are based on incomplete information.**
An example of this would be a sketchy forecast being presented to senior management because the app did not contain all the product pricing data stored in ERP.

Silos of information are nothing new. They have been a problem since the beginning, but when the app is in the cloud and not owned by your business or enterprise, then the challenge becomes much harder to fix.

Fixing the Problem

There are two approaches a business can take to overcoming the problem of information silos. The first involves custom coding the integration by either people in IT or outside consultants. Custom coding is the traditional approach all organizations took when software was on premise and custom designed. The alternative method is to use middleware.

Middleware is the software that acts as the bridge between various applications, databases and other systems used by the enterprise. A more technical definition would be middleware is any platform that connects with applications outside of the operating system. In other words, middleware is the digital plumbing.

Naturally, since Jitterbit is in the business of building, enhancing, and maintaining middleware, our bias is in favor of it. That does not mean we are blind to the advantages of custom coding.

Advantages to Custom Coding

Custom coding allows for unique applications to be built precisely to your specifications. Custom coding affords you the ability to optimize the connection for the needs of your particular business. Sometimes there is no alternative to custom coding as when two applications are entirely custom built themselves. Jitterbit does provide an extensive capability to connect with legacy systems, but sometimes that is not enough.

Advantages to Middleware

Middleware has many of the benefits of cloud applications, including lower cost of entry, faster implementation, security, and the vendor being responsible for maintaining the software, upgrading it, and meeting agreed-upon levels of service. Middleware has some additional advantages as well.

Here are four examples:

API Changes

Every application has its own data rules, nuances, and method of integration spelled out in an application program interface (API). To successfully integrate data with an application, you need to understand the workings of the API. Each API has a capability, schema, transaction rules, and authentication method all of its own. If you choose a custom code integration, your programmers will need to learn how the API works for each application. New versions of cloud applications are typically deployed more than once a year and sometimes every few weeks to provide enhanced functions and features. Since you don't own the app, you don't have any control over this taking place. Sometimes these app changes require the vendor to make API changes as well. Every time an API is changed, custom coded integration may stop working and will need to be fixed by skilled programmers to accommodate the new API version. With a middleware platform, that is our problem, not yours.

Business Processes Change

Change does not happen just on your vendor's end. Over time, your business processes will change. Within a middleware platform, connections to systems are created using forms. Business logic and workflows are modified graphically. Data mapping and data transformation are deployed without coding.

Cloud App Restrictions

Cloud vendors impose some restrictions on application APIs to help them manage their performance and integrity. For example, some APIs require authentication calls before you can connect to their application. Other APIs will limit the number of times you can call an application and the amount of data you can send in each request. These restrictions introduce significant complexity into a custom coded integration. We make it our business to understand these restrictions. By design, middleware platforms have features to help manage API restrictions by breaking data into smaller data sets and sending them in parallel streams.

Integration Process Monitoring

A good integration solution should provide tools to manage error handling. These tools work best when they send automatic notifications of any disruption. Monitoring and auditing tools can pinpoint where the error has occurred. Detailed logs can capture in-depth information about connections, transformations, and workflows. Custom coded integrations require programmers to build these monitoring, audit, and logging tools. A good middleware platform will have built-in tracking and audit tools when you buy them.

Conclusion

Custom coding has a place, especially when you need a unique solution. Then again you may want to ask how many unique solutions you want to have in your plumbing. Now we are not saying middleware is humanity's greatest achievement, but like plumbing, it is pretty useful so that you can avoid information silos. Jitterbit and other cloud middleware products offer many of the advantages of cloud applications. That is why the API market is predicted to grow from \$1.2 billion in 2018 to \$5.1 billion by 2023¹, at a Compound Annual Growth Rate (CAGR) of 32.9%. For our part, Jitterbit grew at well over twice the market growth. We have the best product because more of our customers are more successful than our competitors and this is borne out by research from G2 Crowd and the two leading analyst firms, Gartner and Forrester. The moral is when tempted to do a simple comparison of the upfront costs don't be penny wise but pound foolish.

¹ "Market Research." Market Research. Accessed March 27, 2019. <https://www.reportlinker.com/p04796894/>.



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