Integration with VISCO: A Guide for Accessing and/or Updating VISCO data through external sources

Summary:

From time to time, we are asked to assist in or contribute to an integration with another software application. Historically, those application types have included things like Customer Relationship Management (CRM), tax maintenance software, accounting software, logistics tracking software (such as marinetraffic.com or railinc.com) or freight quote software. Each Integration presents its own unique challenges, but there are certain commonalities with each integration as well. Some of the more common questions and issues we face during integration are:

Questions and Issues:

1) Who will manage the integration project?
    a. Generally the best approach is to have a primary contact assigned from the VISCO staff, the integrating party staff and from the VISCO Customer's staff for each integration. We track each integration project within our Project Management system (Podio) and share that project to each of the contacts assigned. From there, each of the project coordinators can contribute to the conversation, document any and all changes in spec and attach documents and images to the project itself. Through proper planning and communication, including spec writing, field mapping, testing and delivery schedules, the other facets of a VISCO integration are can be consistently completed on time and on budget.

2) Who will complete the code work for the integration project?
    a. With any integration project, a large chunk of the total effort is the code writing itself. Once spec and field mapping is complete, someone will have to design and develop the method of communication between two systems. In regards to how this work is divided, it can vary for each project. For example, on most Electronic Data Interchange (EDI) integrations, the EDI Vendors we have worked with have specific standardized templates they require for each transfer of information. It is our responsibility, in these cases, to convert our data into meaningful information in the format provided (whether we are pushing to or pulling from the EDI Vendor's source). There are often cases though, where having the integrating party do much or all of the coding makes sense as well. For example, if we provide a very simple data display with all the pertinent information via a SQL View (see 3a_iii below), the integrating party can often query that

view on a schedule or in real time to capture the information needed for their application. Ultimately during the specification process, it will be decided which company should be working on which elements of the integration, and, of course, each company should be focusing primarily on what they do best.

3) How will information be transferred?
    a. There are four main techniques we use to integrate information across systems, each offers its benefits and drawbacks and there are limitations on which can be used if you are operating from a network (non-cloud) installation of VISCO or the software we are integrating with is not cloud based.

        i. **XML or CSV file transfer over FTP (or FTPS**) – XML (Extensible Markup Language), is an agreed upon format of information and file type that allows software companies to pass information back and forth between databases. Files with the extension .XML carry a clear "parent-child" formatting method that is clearly understood by most developers. For this reason, creating files in this format (or the historically used .CSV [Comma Separated Value] which XML has tried to replace) is preferred when transferring data. The transfer itself is done through FTP (File Transfer Protocol) which is a shared file location between VISCO and the integrating partner where the .XML or .CSV files are added, copied and archived to maintain accurate data. Typically FTP transfers are scheduled to occur nightly, or sometimes hourly, but "real time" FTP integration is also an option. We recommend this option when we are integrating with larger, pre-existing systems that do not operate in the cloud and/or FTP transfer can be done regardless of whether you are a VISCO Network or VISCO Cloud customer. Examples of this option that we have done include our NetSuite Integration, various EDI Integrations, Trace Register Integration, Rail Inc Integration, MAS 200 Integration and others.

        ii. **API Coding** – API, or Application Programming Interface, is the most common and easily available method for two applications with some form of web based access to communication information back and forth. Though VISCO's API is not fully complete (as of 9/28/2016), we do have simple query formats to deliver customer and product lists using JSON code. These can be provided upon request and we hope to have a complete API available and documented by the end of 2017. This option is currently only available for VISCO Cloud customers. Our most common example for this integration is custom mobile app development done for our customers that ties into our database.

            1. We are also well versed in integrating with systems using their APIs. If the integrating Application has its own API already with clear documentation, our first suggestion as we begin the specification process is to review their documentation and confirm just how much effort it will need to accomplish the integration with limited

involvement from the integrating party. Example of this method of integration include QuickBooks Online (https://qbo.intuit.com) and Avatax (https://www.avalara.com/products/sales-and-use-tax/avatax-2/). We generally use this method when the integrating is:

a. Reliable, large and well known (we can trust their API will continue to function without frequent redesigns that would affect our code)
b. Has a strong footprint in cloud software (so that support of their API is readily available when needed).
c. Their API is well documented.

iii. **Direct Database Transfer –** Though this has been less common for us historically due to differences in database format, it is a very powerful and easy to use method for data exchange between compatible database systems. Our application is designed and stored in MSSQL and our current MSSQL version for all of our cloud customers is MSSQL 2014 (As of 9/28/2016). We often provide a "read-only" user to each of our customers upon request that can be used to access both their core database (which changes only with each VISCO release) and their custom database, which is changed with each application change we make for individual VISCO customers. As each of our customers has their own two databases (core and custom), they (or their third party software vendors) can query and manage data using reporting tools such as Crystal, Tableau, any other reporting tool with ODBC capabilities or even MS Excel. Generally this method means much of the code work falls on the integrating party and VISCO's responsibility ends simply with providing easy to read data in a readily accessible format so that it can be queried against as needed. We strongly encourage this option when VISCO information is being passed down to an integrating application, and no information needs to be drawn from that application back into VISCO. This option is only available to VISCO Cloud customers.

iv. **SDK Development –** Larger applications that are installed locally and do not operate in the cloud have traditionally offered Software Development Kits (SDKs) to third party application developers when integrations are necessary. The only SDK we currently work with is QB SDK v13 (as of 9/28/2016). Though we are open and willing to work with additional SDKs, any of the methods listed above would be preferred and explored thoroughly before we considered this alternative.

With all the options available for integration, the main decisions generally come down to cost and long term reliability of the integration. We always want to build the most flexible integration possible so our customers generally hear us suggesting tons of new and exciting ways to expand the integration or ensure its reliability remains intact despite ever-changing

requirements and infrastructure. Still, budget constraints are real and we understand that sometimes solving the immediate problem is the core goal and “the great plan” can wait for phase 2. VISCO is always excited to work with our customers and their integration partners to build the best system possible for data exchange between our system and yours.