



# PETROLEDGER

FINANCIAL SERVICES

## ERP DATA CONVERSIONS FOR THE OIL & GAS INDUSTRY



*My entry into the oil and gas industry was at WolfePak Software, where I spent most of my six years there performing, scoping, negotiating, and eventually managing professional services - namely, software data conversions. At the end of the day software data conversions can be a painful, time consuming, and frequently expensive process. They are also an absolute necessity. Once you have spent any time professionally performing and managing data conversions, it's sort of like a mafia, you're never really out. Even today, as the Director of Sales & Marketing for PetroLedger, I am routinely called on to consult on conversions projects internally and externally. I hasten to add, it isn't because I'm the best person who ever did a data conversion, nor am I the most knowledgeable - both of those honors go to my former mentor and team member Mike Matthews who taught me everything I know about the field (although not everything he knows). That being said, it's a small pool of talent. In the oil and gas accounting software ecosystem, you aren't going to be tripping over individuals who know how to pull the rabbit out of their hat and successfully convert their data from one software to another without a hitch.*

## THE PROBLEM

Data conversions are difficult and time-consuming for several reasons. While I could write a novel about their frustrations, I will instead focus on the broad strokes of the problems you are likely to encounter.

### Proper Scoping

At the start of the project the most critical of all functions is the scoping of the conversion. Especially if you are paying on a Time & Materials model. I can't stress this enough - every single data conversion will always have a surprise that simply can't be (or wasn't) discovered - no matter how thorough the scoping process was. That isn't to say scoping is pointless, far from, but rather an in-depth scoping will limit the number of surprises you are likely to encounter when you do inevitably stumble across them. A poor scoping will lead to a failure of completing the project on time or on budget which in turn leads to unpleasant conversions with clients who are expecting one delivery date and/or price only to be told it can't happen late in the game.

### Differences in Software Functionality

Every software is different. Even between oil and gas software's. Sure, they might all

accomplish the same thing at the end of the day, but the behind-the-scenes methods in which they accomplish a task likely won't be the same as the software the data is being moved into. Take OGsys and WolfePak. OGsys does not have unified decks. They have a separate royalty deck, and a separate working interest deck. WolfePak allows for a unified deck accounting for both. The same net result, but this presents challenges in both implementing the OGsys data into WolfePak and then validating it after the fact. Likewise, on the clients' end, they need to understand this might cause a change in how they run their Revenue and JIB cycles.

Another good example is QuickBooks. QuickBooks allows a user to have an optional chart of accounts number, or a free form name field. Many O&G operators just starting out aren't interested in the nuances of accounting and simply opt to use a free form name that makes sense to them, and not use a number for their accounts. Almost every other accounting software will require an account number. Thus, during the conversion process, someone will have to sit down and manually assign an account number to each and every single account. With a chart of only a few dozen or hundred accounts, this isn't a real problem. However, if your chart of accounts is several hundred or thousands of accounts long, it will be a massively time-consuming endeavor.

## Data Extraction

For obvious reasons, especially in prior decades, ERP software companies didn't want clients leaving them, and thus, didn't make extracting their data particularly easy. In some cases, it wasn't even possible for the data to be extracted by the end user. Roughneck Software is a good example. The base product has no end-user accessible data dump, although you can buy an excel addon which will allow some of the data to be extracted. The only other option was having access to your own developers who could extract the data behind the scenes using programmatic (and often proprietary) tools.

Older programs like DOS-based or AS400 accounting systems are simply dinosaurs that were never designed with the future in mind and the only option to get the data out is either 1) printing, scanning, OCR (Optical Character Recognition), and formatting into Excel or Access, and then converting manually. Or, 2) a process known as 'spooling' a print file to a disconnected printer, grabbing the print file from the print queue (which will be an ASCII text file) and then converting the ASCII file into Excel or Access and moving forward from there.

## Limitations of the receiving software

Typically, when you are converting your data from one software to another, it is often because you are moving to a newer and better software that fits your needs. That being said, all software has its limits. One software might allow for five lines in their address and the receiving software might only allow for four or three - which means someone has to go through each address and appropriately truncate it. Same thing for e-mail addresses or any data field really. Naturally when condensing or truncating any data field the margin for error is considerable and a

thorough (read: time-consuming) review of the finished product will be required.

## Validating source and converted data

Which brings us to validation. Comparing simple reports like trial balances and the like will give you a first blush feel for data accuracy on the accounting side. Likewise, using compare functions in Excel for things like address or DOI's and help ensure that the numbers all add up and match the source files. Nothing will bite you harder in a conversion project like failure to perform a detailed validation of the converted data against the source data. Generally speaking, it is a Best Practice to have at least two people internally review the data before passing it off to the client for sign-off.

## Client Sign-Off

At the end of the day, no matter how detailed and thorough the internal review is, it has to pass muster with the client, which means a client review and sign-off of the finished product. Some clients are very involved and detail oriented, while others are...less interested in the process. This can prove tricky because if a client doesn't give the data a thorough review early on, they will eventually (be it months, or in some cases years) discover a problem with some piece of converted data...and guess who they come back to?

Handing a client a completed company with converted data at the end of the project and expecting them to do a deep-dive review from top to bottom is also an unrealistic expectation on the client. A good Best Practice is to get incremental sign-off as the project progresses. Chart of Accounts is converted, get them to sign-off on it before moving on to sub-accounts. Vendor names and address completed? Get the client to sign-off before moving on. Step by step sign-off ensures the client isn't overwhelmed at the end of the

project with a full data review that they will never perform, but also means when they do eventually come back on a specific problem, you've got something in writing from the client indicating they reviewed it previously and approved it.

## Time

As will all things there are only two basic commodities in life: time and money. In the world of data conversions both are often at stake, but frequently time is the issues which causes the most angst. Clients need to get up and running on their newly purchased software, after all, they are paying for it, so they want to get their monies worth. On the other hand, any delay also costs the client time in training their staff and shutting down their old system. Likewise, for the team doing the conversion, they frequently have other project scheduled to begin when the current one concludes, which means any delay in sign-off or any surprise discovery in the data will cause a domino effect across multiple projects and clients.

## TYPES OF CONVERSION

There are effectively two types of data conversion: Master File Only, and Full Detail.

### Master File Conversions

Master File conversions focus on building out the core data: chart of accounts, vendors, owners, decks, etc., but not populating the company with historical data which can be time intensive to collect, convert, and validate. Or, if any detail data is brought over, it is from a current period only, i.e., 1st of the year, or the quarter, or the go live month only. This is a good option for clients who will still have their old system to refer to for historical purposes, or who need the conversion to be less expensive and not take as long to complete. The

downside is that the client is required to keep the old system around for a number of years, which might have maintenance costs, and also means keeping at least some working knowledge among their staff of how to access and run reports in the old system.

### Full Detail Conversions

Full Detail conversions are the big boys. It involves converting all data from the former system and finding a home for it in the new system. If the data goes back 30 years, so be it, you'll be converting 30 years of historical data. This is good for the client in the sense they should (if done properly) not miss a beat. No data is lost and there is no need to retain an older system. For the converting team this is more time consuming, more complex, and opens the door for more chances at surprises being discovered or simple errors in conversion and validation.

It is possible to do a full detail but only going back to a certain period of time, for instance, you have 30 years of historical data, but the client only wishes to convert the past 10. On paper this seems like it should be a middle ground, but with accounting data that isn't always the case. If the client picks an arbitrary date as the cut-off, this can be problematic for the converting team as they now have to reconcile the old data using an artificially create point, and then do the same with the new data. This added step, opens the door for someone to make mistake since it is generally a manual process.

The next problem with a full detail conversion is Go-Live. A date has to be agreed upon where the client stop entering in data into the old system and starts using the new one. Likewise, if anyone changes data in the old system before the conversion is completed...well, you just hosed all the work the conversions team just did and will trigger a reconversion and revalidation of the period affected. The Best

Practice here is to negotiate, and schedule agreed cut off dates and phases to the project which the clients (and their staff) know well in advance and making sure the problems that not adhering to the schedule will cause are clearly communicated with them.

## TECHNOLOGY

At the time of this writing there are dozens of major oil and gas ERP platforms in use across the industry, ranging from platforms that are new and web based or archaic AS400 and DOS platforms that have (somehow) struggled on. Because the technology behind this ERP systems spans literal decades, there is no 'one-size fits' all tool that solves every problem. Often times, it simply comes down to deeply knowledgeable people applying the brute force of countless workhours to complete a given project.

### Excel

At some point during a data conversion, no matter what other tools you are using, you are going to have to put some data into Excel and work on it. Excel is easy, every accountant and data professional knows how to use it. It's relatively cheap, and almost everyone has access to it. Excel offers a number of tools within it which will be critical during a conversion: vlookups, compare functions, truncation functions, character counts and a myriad of other things both exotic and mundane that will be essential in working data over in a timely fashion.

Of course, Excel has its limits. Allowing only 16k columns and just over a million rows, you'd be amazed how quickly a conversion of 30+ years of data from an oil and gas operator or a first purchaser can max out the capabilities of your average humble spreadsheet. Also, Excel is only as good as its operator, even the most talented user can miss-key something causing

a chain reaction of bad data that cascades into serious problems if not quickly caught and corrected.

### Access

Sometimes data is big, and the relationship tables are too complex for Excel. In those instances, using Microsoft Access becomes a necessity. Access isn't as exotic as other solutions, but it is more complicated than Excel and fewer people are comfortable using it. Like Excel, Access is only as good as its user even if it is more robust.

### Custom or Proprietary Tools

In the event you have access to a cadre of programmers and software developers with free time on their hands, it is possible to build custom and proprietary conversions tools. At WolfePak we'd developed a few over the years. Roughneck, QuickBooks, SSI, and OGsys tools that allowed us to run company backup files and do a first-pass rough data conversion and by-pass some of the headaches and pitfalls of an all-manual process.

The problem being software developers are rarely sitting around twiddling their thumbs and companies usually want them deployed on tasks to improve the existing software or creating new software products that can be sold for revenue. As a result, the creation (and long-term maintenance) of a custom conversion tool is not usually a high priority item for most software company's executive teams.

Likewise, every tool custom built for the job of data conversion has a shelf life. The moment the originating software or the receiving software changes, a developer is going to have to identify the changes, how that effects the output and make the appropriate changes to the application which then triggers a round of internal testing before it can be deemed safe to use on actual client data.

## iPaaS = Integration Platform as a Service

Something of a middle ground is iPaaS, also known as Integration Platform as a Service. This gives you some, or all, of the advantages to developing your own custom conversions tools but without having to do 'all' of the development legwork yourself. Don't get me wrong, it isn't a walk in the park, but it has its advantages. While there are several iPaaS providers available, most of my experience was with the Dell Boomi product.

With an iPaaS, you are going to need an internal group of users who can build the rules and logic behind the converter. Most of these services offer a GUI (graphical User Interface) so you don't necessarily need to be a software coder to do it - but it helps if you are. Same rules as previously mention on custom solution apply here, the moment the originating or receiving software changes, the users are going to have to review the logic and make the

appropriate changes. As long as you have highly competent and good technical users, you don't necessarily need a full-on software developer.

The other downside to an iPaaS is set up time, like with a custom option it will take weeks or months to build the mapping and rules for the application. Granted, so long as you maintain it, you'll have an incredibly powerful tool at your disposal that will shave off weeks (and sometimes months) of previously manual work. An iPaaS also makes retrieval of data, and data delivery incredibly easy using connection tokens between the different software's.

Lastly is the expense. A good iPaaS is going to cost you, more than likely, tens of thousands of dollars a year for a subscription. So, if you decide to go that route, you'd better be prepared to make a serious investment in the product and the personnel to manage it.

## CONCLUSION

ERP data conversions in the oil and gas industry is a tricky job riddled with pitfalls and potential problems. But it is also a necessary job. Clients need their data migrated, and no one is going to sit down and manually enter in months or years of historical data. As with any professional, there is a sense of satisfaction that comes from completing a difficult and complex job with precision and expertise.

If this white paper does anything, hopefully it illuminates the following: when it comes to data conversion there is no tool, no iPaaS, and no substitute for knowing the data itself and properly scoping a project in advance and clearly communicating expectations and information to the client. After that, everything else is relatively academic.

## Jordan Driskell

### *Director of Sales & Marketing*

Jordan comes to PetroLedger having spent six years at WolfePak Software. As their former Director of Professional Services, he administered several teams and oversaw conversions, training, and implementation, as well as handling service sales, navigating mergers and acquisitions, and managed other operations-related responsibilities. Prior to that, he served as the Controller for Tigé Boats, worked in Legal for Blue Cross Blue Shield, and is a proud veteran of the United States Air Force.

He is passionate about building new teams and empowering organizations to grow into their full potential. Contact Jordan with any questions you might have about how PetroLedger can become a crucial partner in your back-office operations.

## PetroLedger Financial Services

PetroLedger Financial Services offers a full range of oil and gas accounting services and support that will save you time and money. We'll partner with you to manage your financial resources so you can focus on your business.