The Upstream ERP Bill of Rights

Unleashing data for real-time informed decision making

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Enerpact

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Introduction

Ten Key Principles: You have a right to…

1 *Connected data*
2 *Pain-free access*
3 *Real-time analysis*
4 *Preferred systems*
5 *Unlimited capacity*
6 *Innate agility*
7 *Agnostic design*
8 *Small footprint*
9 *Your priorities*
10 *Zero risk*

At its core, ERP is meant to bring together all information needed for good decision-making. In upstream oil and gas, that information spans from leases and land records to budgets, forecasts, drilling costs, production data and economics.

Done well, ERP delivers great value to the organization. It improves profitability, cash management, budget analysis and operating performance measurement. It connects the entire value chain from exploration to drilling, production and sales.

Successful ERP systems act as information hubs. They correlate data across the company. They connect existing systems, leverage existing infrastructure and provide a bridge to data trapped in paper and spreadsheets. They manage the data flow between systems and users.

Yet ERP implementation has a reputation for being a long and expensive ordeal. Often ERP systems fail to achieve their mission. They take on a life of their own and stray from their original intent. Keeping up with new technologies and trends is tough.

Following ten fundamental principles—the ERP bill of rights—can help ensure ERP success in upstream operations. E&P operator EnerVest was an early adopter of a new upstream ERP approach that follows these principles.

"The executive team gets information faster, better and more consistent"

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Principle One: Connected data

Data must be connected. It is fully effective only when it is available to all, not just a select elite. Data needs to be free and visible, available for whatever analysis and calculation is needed.

Putting this principle into action can be a challenge. The common approach is to build a system around the data. Accounting systems, for example, do an excellent job of storing and structuring cost and revenue data. Land management systems are tuned for lease data. Well operations systems track well maintenance. Each of these systems have their core competency. They anticipate the data—building holding places for it. Unfortunately, these holding places can become pens that keep the data captive and are costly to maintain.

To get a holistic view of upstream data requires interconnectivity between data sources. When all data is connected, there are no blind spots. Staff is freed from laborious data extraction, manual correlation and charting. More time is available for higher-order thinking. Data from one system can update another.

Connected data no longer needs to be consumed via spreadsheets. Too many companies still rely on spreadsheets as the least common denominator for data analytics. This approach slows decision-making, introduces the potential for errors and puts the focus on data manipulation rather than analysis. Reassembling takes a lot of work and thus discourages additional analysis. These indirect tasks can take a significant slice out of daily productivity. They make it impossible to pass data on to other systems in an automated fashion.

EnerVest chose Enerpact to help them connect their data several years ago. Like most upstream businesses, EnerVest had several different systems that tracked well-related data and no easy way to get a 360° view. "We needed to generate reports that drew from multiple sources like BOLO, ARIES™, WellView® and FieldDIRECT®," says Todd Guest, EnerVest Accounting Vice President. Guest is particularly pleased with what he calls the speed of information.

"Picking Enerpact was a great decision on our part"

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"Enerpact took away the delay," he explains. "All constituent groups get information faster, better and more consistent."

Principle Two: Pain-free access

Broad access to data can improve every aspect of upstream operations. Everybody knows this. Everybody want this. So why is access so limited?

One reason is that there is pain associated with universal access. Pain is a tremendous de-motivator. It stops the most innovative and valuable initiatives.

The first level of pain is likely to be cost. If access requires a license for specialty software like accounting and land management, the benefits of access may not be great enough to justify the cost.

The second level of pain is the cost of training. If access depends on specialty systems, the learning curve can be steep. Access may not seem worth the time and money spent learning the tool.

The third level of pain is in usability. If access requires users to interrupt their work, navigate cumbersome interfaces, verify results and combine data from multiple sources, then efficiency will suffer. In the age of smart devices, intuitive interfaces are the norm. Dashboards that provide insight at a glance free users from dependence on others to extract, calculate and report data.

It can be particularly frustrating to know where data resides but not know how to retrieve it. NRIs are notoriously hard to extract from accounting systems. Net cash flows can be hard to get at. Pulling income statements from multiple systems like BOLO and Enertia usually requires spreadsheets as intermediaries.

Pain-free access requires low financial and usability burdens. Then regular data access becomes second nature and data will be used in all kinds of unexpected and beneficial ways. Pain-free access leads to extremely high adoption levels. The higher the adoption rate, the more potential for insight.

"Everybody loves it"

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"Our guys in the field need access to lease operating statements," says Tony Lopez, EnverVest director of planning and analysis. In the past, these statements came from accounting and then went into spreadsheets for analysis. Today they can pull up an LOS any time for any well, plus budgeting details and quarterly forecasts. "We needed something more economical and flexible than our existing systems could give us," says Lopez. "Picking Enerpact was a great decision on our part."

EnerVest divided its user community into four groups and made a plan to make access pain free for each. Accounting needed exception reporting tools to catch data errors. Operations needed insight for business decision making, while another group needed an analytical interface for comparing production data. For executives, the interface of choice was a dashboard. "Everybody loves it," he concludes.

Principle Three: Real-time analysis

Analysis is best performed on the most up-to-date information. If data is pulled from multiple sources and compiled manually, it is already out of date before analysis can begin. It may also be out of synch.

Real-time analysis allows sophisticated correlation across data sets. Calculating NRIs and net BOEs, for example is greatly simplified. Decisions are supported with the latest information. There is no latency and no data duplication. There is no archaic or unsynched data. Data is simply aligned and presented. Because data is available in real-time, aggregated automatically and presented as needed, there is more time for analysis, creative thinking and informed decision-making.

Data warehouses were an early option for business intelligence. These warehouses collected data and made it available without tying up the source systems. The downside was that the data warehouse by its very definition is out of date and inflexible. It may also be out of synch, if the data is collected at different times from different sources. Updates from the warehouse back to data sources could not be trusted.

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Now virtual warehouses gather and correlate data from multiple systems in real-time, delivering connected data for value-adding analysis in real time. The warehouse itself is virtually empty—containing only the correlation keys.

This 'just in time' approach so popular in physical manufacturing has great value in the data world. The data itself is only transiting the warehouse. As a result, the warehouse can be quite small. The data is current, in synch and can be queried in real-time. This supports a whole new level of analysis and informed decision making.

EnerVest took a phased approach to rolling out real-time analysis. "We asked each of our four user communities to identify their top priorities, then we picked the ones that gave the biggest bang for our bucks," says Guest. Manual paper-based processes were automated and spreadsheets replaced.

"Everyone who pulls an LOS gets the same result," says Ryan Flory, EnerVest controller. Access is faster and consistent. "We don't have to worry that an engineer, auditor and executive will get different data."

Enerpact automated the EnerVest AFE workflow accelerating approvals by 50 percent, says Guest. The executive team has instant access to budget versus actual by well, field or business unit. "It helped a lot that Enerpact has deep oil and gas experience," adds Guest. "They understand our needs." Easy access to real-time data from multiple sources makes more time available for higher level work, says Lopez. Real-time look backs on AFEs for comparison of actuals to estimates replace data collection processes that once took hours.

Principle Four: Preferred systems

An effective ERP system allows the business to select its data management tools. Accounting may prefer Bolo, Excalibur or Enertia, while for economics the choice may be ARIES or PHDWin. Implementing an ERP system should focus on linking preferred systems—not replacing them.

"We selected a path that let us link disparate systems—whatever they may be"

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Specialty groups need specialty tools. They should not have to compromise. Indeed, there is no reason to force a change and plenty of reasons to not.

Changing systems causes enormous disruption. Implementing a new accounting system, for example, could take months or years as employees split their time between the new implementation and their real jobs.

Extending preferred systems into new domains doesn't really do the trick either. There is still disruption for someone. For example, if accounting extends into production data, there is disruption for accounting with new burden added to their system. Plus there is disruption for production, as their previous system is displaced.

Perhaps most critically, using a system displacement strategy assumes that once the project is complete, the work is done. This is just not the reality for upstream oil and gas. Every acquisition has the potential to introduce new systems that must be converted or somehow incorporated.

By looking at ERP as a way to tie preferred systems together, the focus remains on the data. Your business depends on the smooth operations of your key functional groups. Improving access by connecting preferred systems ensures continuity and positive change.

EnerVest was not interested in replacing its current systems. They were not interested in adding another complex system. And they were not interested in a solution that would be obsolete if the preferred systems changed. "We could decide to move from Aries to PHDwin or from BOLO to SAP," explains Guest. "We selected a path that let us link disparate systems—whatever they may be."

Among EnerVest systems is IHS FieldDIRECT, a popular system for production information. Pumpers in the field have an efficient spreadsheet-style interface to input each well's data. Yesterday's data pre-populates, so the pumper only need update values that have changed. The FieldDIRECT production database can then be accessed for its data. In partnership with IHS, Enerpact created a

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connector to FieldDIRECT that enables data sharing with Enertia and BOLO, both popular accounting and land management system.

"Connecting to Enertia and other systems for accounting, land and reservoir data leverages the value of FieldDIRECT," says Becky Gibbs, IHS Product Manager. "Our customers can now more easily generate complex reports and improve overall visibility into data." This real-time connection lets customers stick with their preferred systems while opening access to real-time production details, improving production monitoring and surveillance. And there is no disruption in the data collection process.

Principle Five: Unlimited capacity

You should be able to extend data to anyone in your company without worrying about overloading your key systems. By focusing on connecting data, you can actually reduce the number of resources needed for running transactions from those systems.

For upstream operations in particular this is key. High growth in well count, employees and locations makes it critical that the ERP system can scale. This approach throws the expanding load off the specialty transaction systems and onto reporting dashboards.

A central benefit of this approach for EnerVest is that their preferred systems are no longer burdened with extra transactions. "We no longer need to use a BOLO license for reporting purposes," says Lopez. This decreases the load on the systems and prolongs their useful life.

EnerVest has plans to expand their overall ERP system to include Enerpact applications for budgeting, forecasting and a capital management system for financial modeling. "Enerpact will be connecting historical BOLO data to forecasting tools like Aries and the drilling report system," says Lopez. "We will merge actuals, current models and forecasts from reserves for better cash and financial forecasting." And they will do it all without adding significant burden to their specialty systems.

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Principle Six: Innate agility

Upstream operations are complex and changing. New acquisitions often bring new systems and data that must be incorporated quickly. To support this reality, an ERP system must be nimble. It must by its very nature be able to integrate new data and new systems. This innate agility is much easier to attain in a model that focuses on connecting data by leveraging existing architecture instead of forcing one system to fit another.

ERP systems that rely on specific software, data models and interfaces are extremely challenged when faced with something outside that scope. They are designed to work a certain way and can be difficult to modify. That takes time and money.

Innate agility is a great advantage in an environment of rapid change. New data and systems are easier to embrace. New technologies like mobile devices are easier to support for field data capture and anytime access to dashboards.

EnerVest has a large number of wells, complex ownership structure and many business units. New acquisitions are commonplace. They inherit other people's systems. They have to deal with data integrity issues. They may have multiple ownership positions in the same wells. As a result, they need flexibility and agility in their systems. "If Enerpact can automate our processes, doing it for someone else would be a piece of cake," says Lopez.

Principle Seven: Agnostic design

An independent approach—one that doesn't play favorites—provides the flexibility needed for long-term ERP success. Agnostic design doesn't depend on certain applications. It doesn't prefer a particular implementation path. In an agnostic design, the underlying systems don't matter. It's the data that matters.

"What used to take hundreds of spreadsheets and lots of time now is just one click away"

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Connectors are the hallmarks of an agnostic design. They serve as gateways between disparate systems, enabling users to combine and analyze data regardless of its ancestry.

Enerpact system connectors have common capabilities and are configured to suit the uniqueness of each application. They allow data to flow to and from preferred systems. For example, new data submitted to the FieldDIRECT production system can also update the accounting system.

Agnostic design also incorporates configurable dashboards to make it easy for users to visualize and analyze data. Dashboards are configured based on the user profile and data requirements, displaying reports, tabular information and charted data as desired. Content within dashboards can be live, allowing the user to drill down on the underlying data and transactions.

Specialty applications are the third component of agnostic design. These applications are purpose-built for managing classes of information otherwise managed on paper or spreadsheets. Examples include budgeting and forecasting, AFE approvals, invoice processing and production data management. These applications fill gaps, connect in an open manner and can be readily replaced as desired.

EnerVest just launched its 2014 budget using the Budget Master & Scheduler application from Enerpact. "We've automated the match up of actual and budget," says Flory. Users can compare any period for any well or area. The data is updated from BOLO. "What used to take hundreds of spreadsheets and lots of time now is just one click away." EnerVest plans to add a drilldown capability to see transaction data behind the analysis.

Principle Eight: Small footprint

Just because you want to have visibility to all your data doesn't mean you should have to invest in a new or extended architecture. Instead, leverage the technologies already available to you and keep the footprint small. Chances are you have a Microsoft infrastructure. Use it.

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SQL Server Reporting Services (SSRS) for example can be used to communicate with Microsoft SQL databases commonly used in upstream systems. Internet browsers are ideal for dashboard display and HTML5 is the descriptive language of choice. The Excel add-in lets users interact with data in a familiar environment.

Leveraging these and other tools likely to already be in place saves time and money. It makes interfaces more intuitive and consistent. It keeps the computing footprint small.

Using a virtual warehouse model also dramatically reduces the footprint. With a virtual warehouse, there is no data duplication. There is no need for large new data storage capacity. There is no need for additional data oversight to track redundant data.

Principle Nine: Your priorities

You should be in charge of your own destiny. You decide what needs to be connected and in what order. You determine what reports you need to see and how you want them rolled out to your business.

Not everyone needs to see the same data in the same manner. A reporting interface that allows users to select parameters and run real-time reports may be most useful for lower level analysis. A dashboard of key upstream data such as revenue by asset and actuals versus budgets may be just what a financial analyst needs. Preset charts and concise reports tuned for executives may be in order for your senior staff. You decide what to offer to who and in what order.

ERP nirvana has all data managed and accessible in one virtual warehouse. To get there with minimal business disruption, you need a plan. It should be your plan, not something imposed on you. If you have processes that work well, you should not have to change them to conform to someone else's rules just because you want to automate.

If your priorities extend to data outside your preferred systems, consider adding an application to your system. For example, invoice processing can be easily automated to match your current practices

"Enerpact knows oil and gas; they know BOLO and they know how to find the data we need"

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while adding key value like the ability to click a transaction and immediately view the associated documents. If you want to build scenarios for multiple well rig schedules and budgets, you can pull ARIES data into an application to instantly show the economics. Or pull production and forecast data from multiple systems in real time.

"Enerpact can program really anything we want them to," says Lopez. The challenge at times is being disciplined about setting priorities. EnerVest has taken a phased approach, each time soliciting input from their user communities and looking for the best use of money. "We have real control over the scope of projects and can turn on a dime as needed," adds Guest.

Principle Ten: Zero risk

Zero risk ERP seems like an oxymoron. There are plenty of examples of expensive failures. Given that ERP reaches into every vital operation, it seems hardly possible that an ERP project could be anything but risky. That is why it is so important that you demand your right to zero risk.

Zero risk implementations do not rip and replace working systems. They do not force changes to business processes. They do not disrupt current operations.

Zero risk implementations do support your priorities. They do connect data and increase access without work stoppage. They do provide interfaces and reports configured to be familiar. They do ensure consistency. They seamlessly integrate.

When EnerVest began their ERP implementation, they wanted assurance that they could move to a virtual warehouse and real-time analysis without displacing preferred systems and processes. "Enerpact provided a proof of concept," says Guest. Once the ERP project was underway, milestones were define at fixed price, allowing EnerVest to control both what was delivered and the associated cost.

EnerVest also appreciated the expertise Enerpact brought to the table. "They know oil and gas," says Guest. "They know accounting

If you don't like what you see, you don't pay

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software structure to get data in a universal format and they know how to find the data we need."

Enerpact offers to prove itself one customer at a time. The company works on a fixed price basis, leveraging existing systems and using a standard computing architecture. If you don't like what you see, you don't pay.

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