YOUR
COMPLETE GUIDE TO

ESSENTIAL OIL & GAS INDUSTRY SOFTWARE
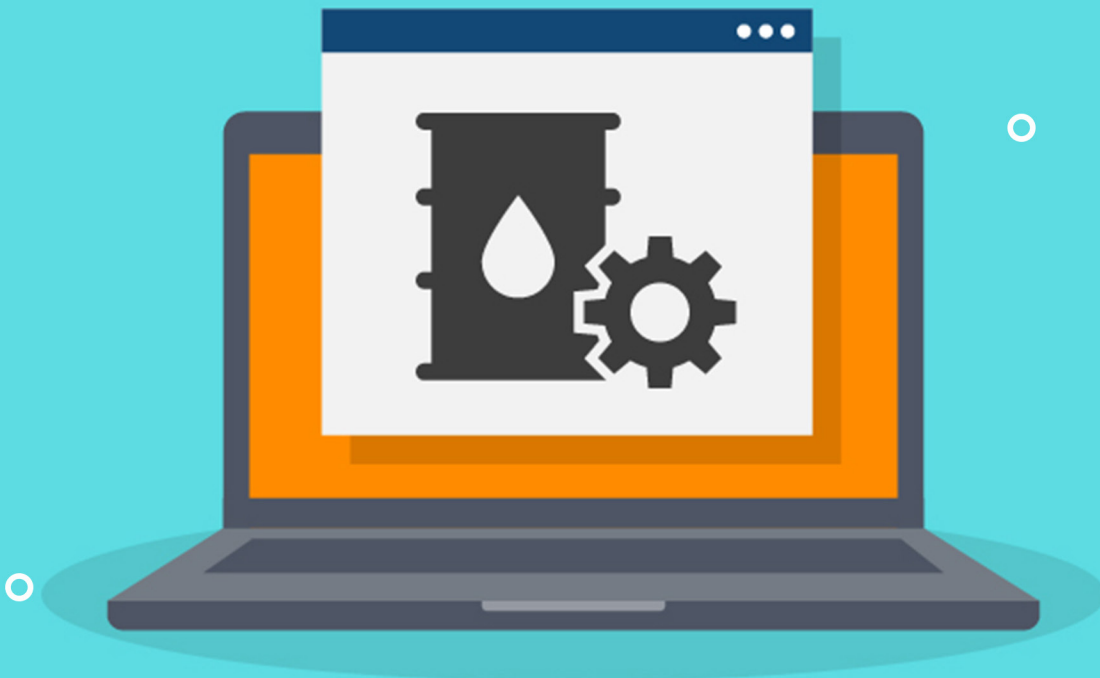
The Best Oil and Gas Software

There's a romantic image of wildcatters out in the field in the early days of oil exploration armed with little more than their instincts and a Big Chief tablet with hand-scribbled notes.
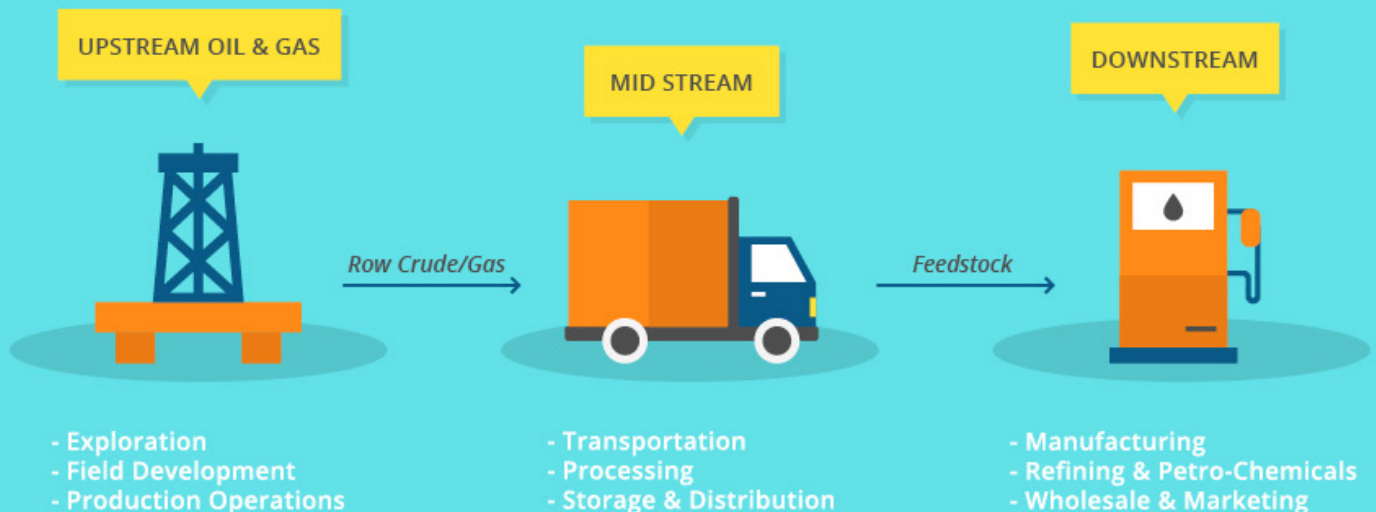
Those days are long gone.

Whether you're a major player or a smaller oilfield services operator, there's no room for error when it comes to tracking product, equipment, and personnel as well as the information needed to remain in regulatory compliance.

In addition, just as you can't rely on informal notes scattered here and there for recordkeeping, you need to move beyond one-size-fits-all enterprise resource planning (ERP) accounting software like QuickBooks, Officewise, or Adobe Sign.

For each of the three stages in the oil and gas industry – upstream, midstream, and downstream – you must have the most granular and easily accessible data possible to ensure you're making the best decisions.

The Global Oil & Gas Value Chain

UPSTREAM OIL & GAS

MID STREAM

DOWNSTREAM

Row Crude/Gas →

Feedstock →

- Exploration
- Field Development
- Production Operations

- Transportation
- Processing
- Storage & Distribution

- Manufacturing
- Refining & Petro-Chemicals
- Wholesale & Marketing

Still, with all the software products on the market, it can be hard to know exactly which one is right for your operation right now as well as looking to the future. With that in mind, here's the info you need to know for software tailored for each phase of the oil and gas industry.

Evolution of Oil and Gas Software

It's tempting to think of software as just creating the digital counterparts of real-world items such as email versus letters or an Excel spreadsheet versus a ledger. And at a basic level, this is true. After all, the oil and gas industry spends $5 billion each year on paper records which can be managed more inexpensively by digital document software providers like Oildex.

With the increasing amount of digital connectivity, however, the ability to link devices and gather data is greater than ever before. This concept is called the Internet of Things (IoT), the process by which formerly standalone and manually operated systems are connected via software.

For example, in the past, you'd have to drive around your neighborhood to measure a route a couple of miles long and then use a wristwatch to track the time to run it. You might also log this mileage into an exercise journal as well as calculate the calories burned if you're on a diet.

Now, a Fitbit smartwatch can automatically track how far you ran, the time it took, calories burned, and your heartrate as well as transmit this data to other related apps such as MyFitnessPal or Apple Health.

In the case of complex industries, the IoT concept has been expanded to the Industrial Internet of Things (IIoT).

For oil and gas operations, this means sensors in the field can instantly **transmit data for offsite analysis**. Oil pump performance can be monitored remotely to quickly identify problems as opposed to relying on periodic in-person inspections. In addition, automatic triggers can be set up when emergencies happen – for example, shutting down a pump if it starts to fail – without requiring human intervention.

Beyond this extra data, however, cutting-edge oil and gas software is **incorporating artificial intelligence (AI)** to perform routine tasks and gather data.

Virtual assistants are one example: Customers can be helped to access information or suppliers can check the status of outstanding invoices. Thanks to these advances, full-time employees (FTEs) can be better utilized in more specialized and revenue-generating capacities.

Enterprise Resource Planning Software

In addition to the specialized software detailed further below, these large-scale ERP oil and gas software packages can typically be used for upstream, midstream, and downstream accounting and resource management.

On an even larger scale, companies such as Drillinginfo offer the **ability to analyze industry-wide data** for actionable insights in areas including exploration, production, supply chains, and financial services.

CEM offers a variety of modules which can be integrated for your specific needs in areas like accounting, budgeting, business operations, controls, resource planning, and system management. In addition, ERP implementation, migration, and upgrade services are available.

Quorum provides a full suite of software for the entire oil and gas value chain, everything from land management to well lifecycle reporting to energy marketing to supply and distribution. If you want to learn more, there is an **extensive library of white papers** highlighting their products and services.

W Energy Software (formerly Waterfield Energy) offers a unified upstream and midstream ERP platform to seamlessly track oil, gas, and NGL from the wellhead through transportation and marketing, eliminating data silos as well as the burden and costs of maintaining multiple systems.

WolfePak has software designed specifically for upstream and midstream operators as well as service operators. Plus, there's integrated accounting for mineral owners and investors to track income, expenses, and taxes across multiple leases and fields. Products are highly scalable and suitable for both startups and established companies.

Upstream Software

Upstream oil and gas activities include:

» Exploration   » Field Development

» Production

Land Management Software

Comprehensive land management is critical to keep leases and royalty payments up to date.

iLandMan offers land and well management software. This includes courthouse and parcel data as well as mapping. You can also access nationwide well information with production dates to set up notifications and make payments. Plus, you can examine analytics for your wells and those of your competitors.

LandWorks is used by oil and gas and pipeline companies. There are three different software suites to choose from to manage land rights and analyze assets. You can also track where leases overlap and at varying depths. Automatic notifications for lease renewals and payments can be easily set up, and you can create your own reports.

Visual LandPro 2000 allows you to easily set up contracts and leases. Forms can be created and modified to meet your needs for a given lease and then saved as a template for future use. Report snapshots can be exported into MS Word and Excel. There is also an audit trail system to record every change and the date it was made by each user.

Oil and Gas Production Software

Once your fields have been developed, you'll need to carefully monitor production to maintain and improve operations.

Enertia Software offers cloud-based integrated solutions for well production, inventory and material transfers, and audit and incident tracking. You can also automate workflow including setup and maintenance of properties, authorization of expenses, and well flow monitoring to check for variances.

Gauge & Run Ticket

can be used by both oil and gas companies and independent pumpers. Production is based on well test data and tank table measurements recorded in the field. The software can be installed on either individual computers or servers. All information is loaded and stored in a central database for easy access and use.

P2 Merrick

provides software to record and validate well and production data in the field, compare it to industry benchmarks, and share this information across your company. All products are designed to work in harsh environments around the world. In addition, hydrocarbon accounting is available for both simple and complex systems.

Midstream Software

Midstream oil and gas processes include:

» Pipeline Transport

» Processing

» Storage and Distribution

AspenTech

software helps you design and monitor pipelines in conjunction with prescriptive maintenance to avoid leaks and related failures. In addition, you can design and operate processing facilities for maximum return on investment (ROI) while enabling safety and regulatory compliance.

Chetu

offers pipeline management and performance solutions as well as automated oil and gas storage software services. Plus, there are multiple options for transportation management: cargo tracking, telematics, route optimization, and invoicing.

Emerson

serves industry segments including pipeline, terminal, liquids, and gas management. In addition, operations and business information are integrated to allow for flexible, real-time strategy implementation. Training is offered both face-to-face and online.

Technical Toolboxes

a leading provider of integrated and cloud-based pipeline software, online resources and technical training covering a breadth of topics for pipeline engineering professionals around the world.

Downstream Software

Downstream oil and gas systems include:

- » Refining
- » Manufacturing
- » wholesale

AssetPoint

offers TabWare software to monitor costs and maximize performance whether you're refining 10,000 or 500,000 barrels each day. You'll use a unified platform to manage all your assets and processes, everything from catalytic cracking to hydrodesulfurization. Plus, you can track and follow up on incidents such as spills, emissions, or accidents.

Implico

employs a high-performance terminal management system (TMS) to automate and optimize both terminal and refinery operations. In addition, service station supply is automated via its replenishment and distribution management (RDM) system. Additional software packages can monitor net plant production, quantity conversion, and dispatching.

Intelex

focuses primarily on environmental, health, and safety compliance solutions. This includes identifying potential refinery hazards, analyzing incident reports to detect trends, and tracking safety certifications and training. Plus, this information can be used to make sure you're meeting OSHA and ISO 9001 guidelines.

Making the Right Choice

Just as you shouldn't use off-the-shelf ERP software not tailored specifically for the oil and gas industry, there's no one product that's ideal for every stage from initial exploration all the way to the pump at your local gas station.

Choosing the right product means knowing exactly where you fit in the oil and gas value chain as you don't want to pay for features or services you won't use.

At the same time, you can't afford to be only thinking about the here and now.

The capabilities you need today likely aren't the same as they'll be in six months, a year, or even further down the road. To avoid the headaches that come with upgrading your systems more often than absolutely necessary, also consider your future needs when determining the oil and gas software package that's right for you.