

# Find your next performance edge with our digital fluids solutions

We believe the key to smart, sustainable and successful fluids deployment is understanding exactly how the fluid system will behave in the most challenging circumstances you may encounter within your operations.

That's why we'll leverage the latest cloud computing and analytical technologies to model and interrogate these potential scenarios – enabling us to develop the right solution for your well and any contingencies you need to cover.

Newpark fluids specialists utilize innovative digital fluid solutions and software that bring together our vast fluids knowledge and historic well data with proprietary formation and rock properties to anticipate and overcome your challenges. Worldwide. Making informed, data-driven decisions to deliver consistent performance, leading best practices and a superior service – with no surprises.

## Welcome to new era of historical well planning

Historically, planning a well hasn't been simple. Due to a limited available range, unreliable sources and unverified data – plus the intricacies and inconsistencies often found between in-house models – many operators find decoding available databases a drawn-out process.

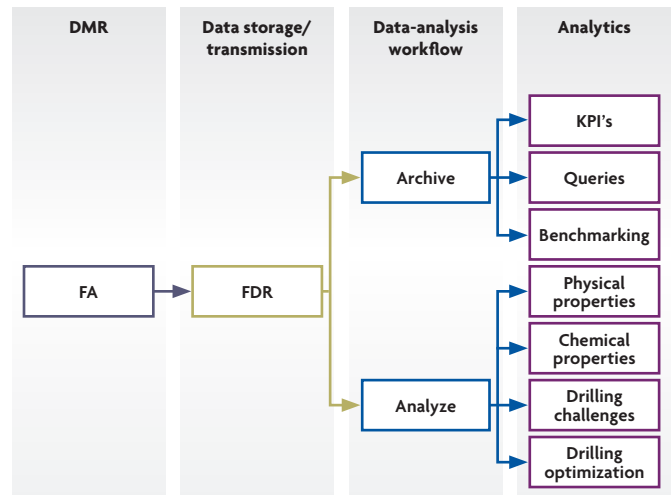
Today, we have access to more data providers and software capable of aggregating public data into digestible formats than ever before. New tools make it far simpler to clean, organize and verify data at speed. While the dream of a semi – or even fully – automated well planning cycle is ever-closer to becoming a reality.

These new tools can provide usable solutions at every point in the life of a well, from scouting to long-term production and even completion and workover activities.

## Driving efficiencies through intelligent data analytics

In today's climate, efficiency can no longer be considered a luxury. Unpredictable economic factors, tightening margins and accelerated timelines have made optimizing performance the utmost priority for operators worldwide.

At Newpark, we know you can only be as fast as your data. Automating aspects of the well planning cycle with data analytics and digital tools can give your drilling engineer the time needed to follow ongoing drilling operations – overseeing multiple rigs, running KPIs and tracking performance in real-time.



Twin analytics flow

By using these tools, you can also unlock insight into the main influencers of non-productive time, flat time and even identify invisible lost time. With near real-time analytics, operators have the ability to control costs, adjust parameters,

and avoid pit falls that traditionally were thought of a “part of the process”. Key data like events recorded and collected, can provide the required visibility project engineers and clients need to anticipate and overcome these challenges.

### 3 pillars for successful digital projects

Our digital solutions experts attribute our success in optimizing operations to three key pillars in the planning process: data workflow, standardization and effectively leveraging public data.

#### 1 Data workflow

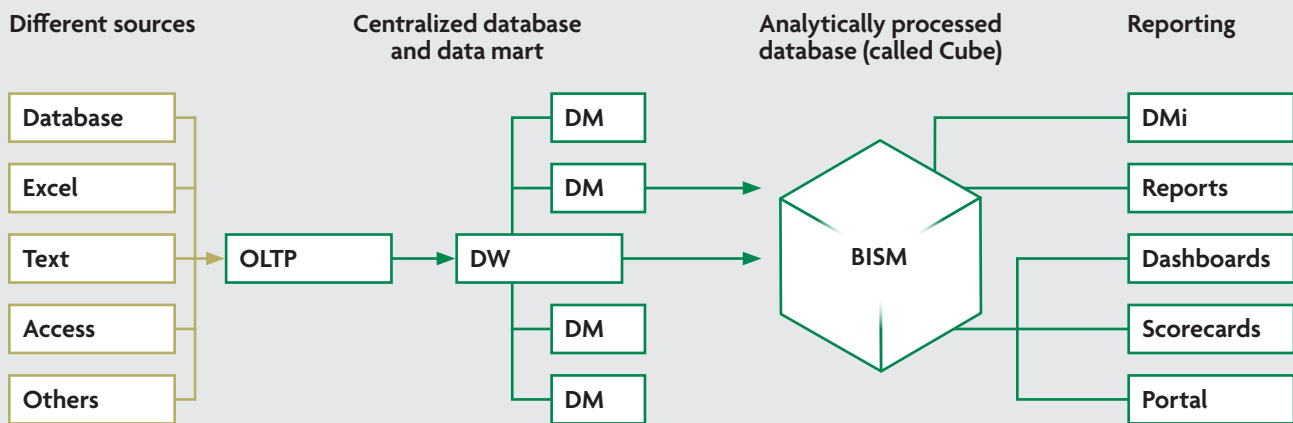
The flow of data from rig site to operator typically involves several stages and workflows. The most common one is the Knowledge Discovery in Databases process (KDD). With this approach, data first needs to be categorized by how it is generated, for example: sensor vs human-generated data.

Data is collected at the rig site using various sensors and instruments measuring temperature, pressure, and flow, or downhole tools to obtain geophysical data. The collected data is then transmitted to either a central or multiple data repository – depending on who has access to the data and who owns the data. Data storage can take several forms such as a data center or cloud-based storage, where it can be organized, processed, and analyzed.

Human-generated data must be vetted for human error to avoid errors from typos, different vocabulary or failure to match the units used on the well to the units inherent

in any computer calculations. An SME in the specific domain that the data relates to can train a model and set logical data government rules to prevent any errors from propagating into the dataset and the models.

Once the data has been processed, it is usually reviewed by subject matter experts to ensure its accuracy and quality. If necessary, the data may be adjusted or corrected, and then it is made available through a secure, web-based portal. Once the data is prepared, clients can then access the data and use it to make informed decisions about their operations in what is typically called Decision Support Systems (DSS). In addition to the raw data, customers may also receive reports, visualizations, and other insights based on the data, which help them understand the data and make more informed decisions.



Data architecture workflow

## 2 Standardization

Our industry generates gigabytes of data per rig, per day. But a recent study showed that around 80% of this insight is not used for well planning purposes.

From data structure and format to time stamp and other attributes – lack of standardization of most downhole tool or rig data or rig data is limiting its effectiveness. One key

initiative driving change in this area is DSAT (Drilling System Automation Taskforce). By looking for standardization, identifying data errors, and paving the way for collaboration in any environment – including OSDU (Open Source Data Universe) – DSAT are making the data useful across more platforms and applications.

## 3 Leveraging Public Data

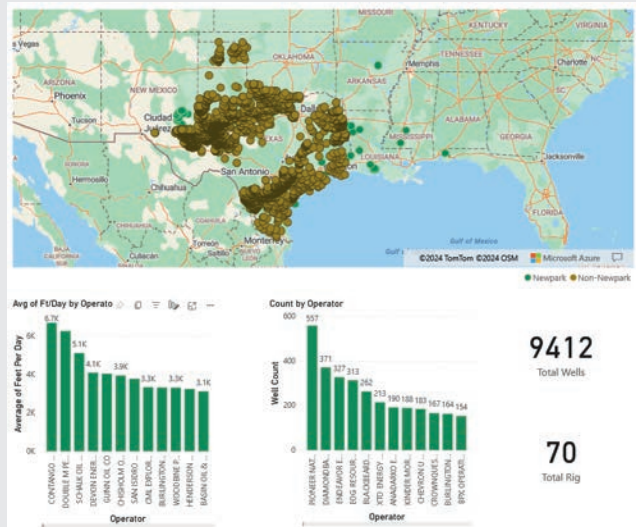
To turn data into knowledge, you need the full picture. While an operator, service company or rig contractor generates their own data internally – that’s only part of the puzzle.

Data is almost a reflection of market share where the amount of data owned by a certain company is typically directly proportional to the company’s activity in a certain basin. In other words, if company A has 10% market share in acreage and well count, one would expect that company to have at least 10% of the data of this field and so does each service company associated with this basin. In that case, this is a key point to train AI models on the data and then propagate the model through available public data sets.

Using public data for this purpose will be an effective way to increase the amount of data that can be mined to gain insights and knowledge quickly. The data analytics will help to process and interpret large amount of data by uncovering patterns, finding correlations, and trends. The final results are more accurate digital dashboards to the end users where these data are been displayed after the process of data mining public data.

The key to public data is to understand which attributes expire with time and which ones remain valid. For example, fluid density remains valid for a longer duration than

other data fields, but also loses context with depletion or not understanding the number of casing strings per well. Whereas, performance metrics like footage per day or days per well expire much faster due to changes in drilling technology such as more capable rigs, use of RSS and advanced bit and cutter technology.



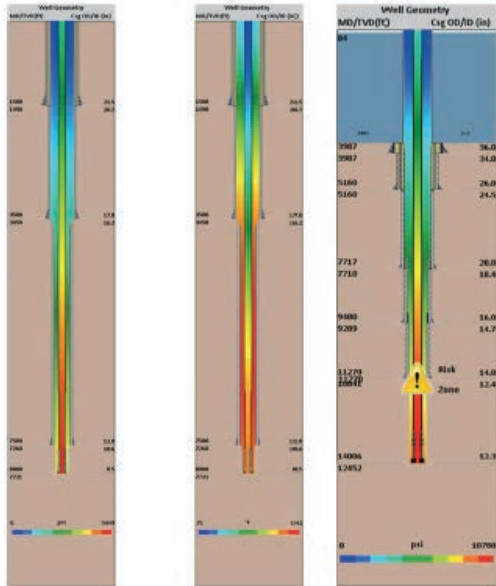
Digital dashboard focused on specific geographical area

## Bringing this together for year-on-year gains

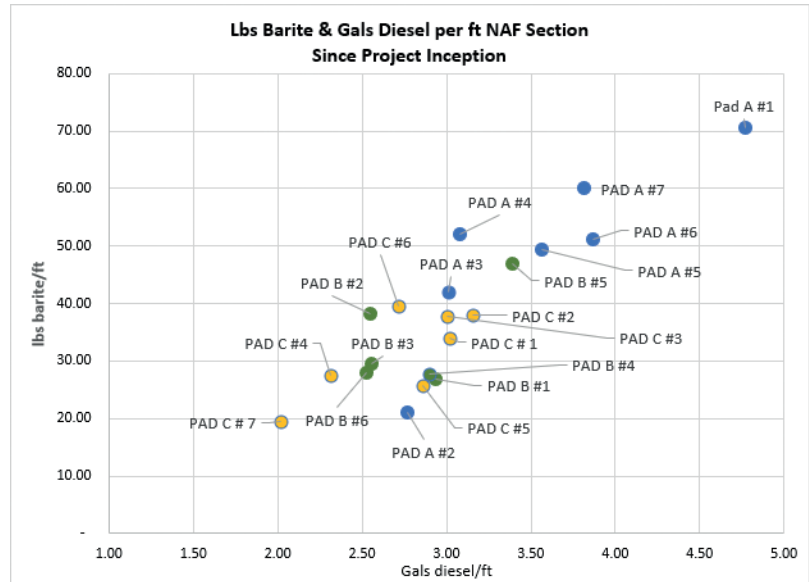
Many of our customers around the globe are already enhancing their fluids performance through our suite of pioneering digital solutions and leading expertise.

Thorough and thoughtful well planning includes risk avoidance and mitigation strategies. This starts by detailed offset well analysis via Fluid Intelligence that is fed from a stream

of standardized and organized data from Fluid Architect rigsite reporting software. Once mud weights, depths and additional details are set, fine-tuning fluid properties and operating parameters is done via ClearTrack hydraulics simulations software.



Hole cleaning model graphics. Colors and symbols indicate down hole data and critical zones.



Real-time analysis led to significant reduction in barite and diesel consumption.

## A recent study of all Newpark wells drilled in unconventional basins in 2022/2023 vs 2019/2021 shows:

**10% less**  
downhole losses

due to better fluid property management, ECD and Surge/Swab roadmaps

**40% reduction**  
in NPT

due to unscheduled events based on tracking time distribution

**22% less**  
reaming time

due to cleaner wellbores from improved flow rates and drilling practice

To discover how our fluids-first approach to digital solutions can empower your operation to anticipate and overcome your biggest drilling and production challenges, talk to the team today.



Contact Newpark fluids specialists for more information  
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