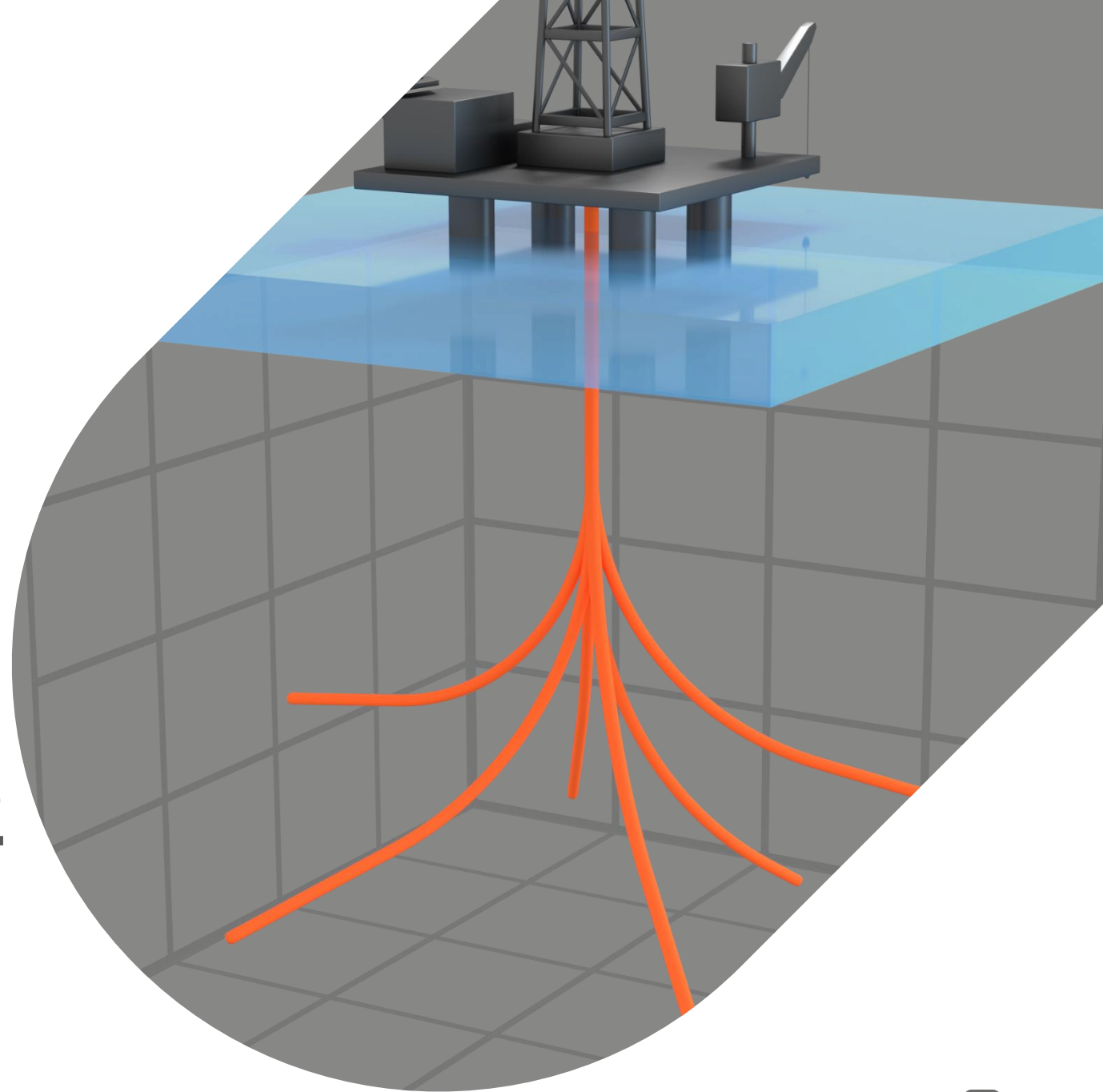OLIASOFT

Bore- og riggkonferansen 2022

Sammen løste vi utfordringen

New technology is a prerequisite to achieve new use-cases and automation

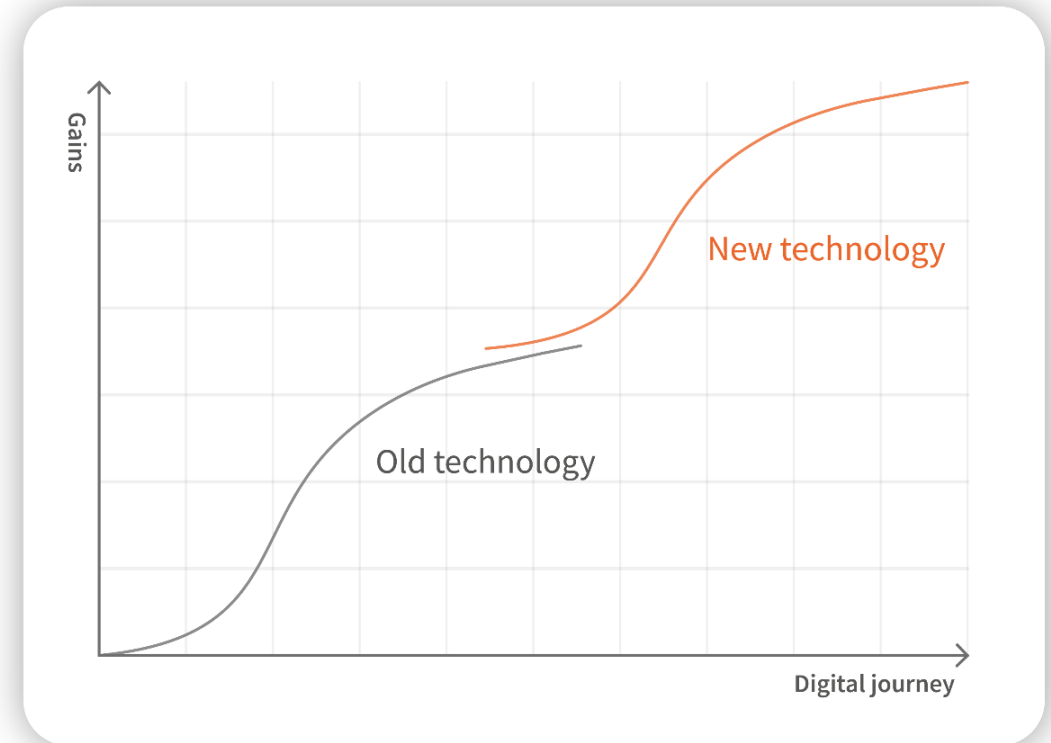## Everyone has the same goals

- More efficient and optimal well planning, Liberate data
- Mature targets faster
- Attract talent, Do more with less
- Cross-domain integration: From G&G to Planning to Operations

Old technology: Legacy systems

- The safe choice: It has worked for years
- Continue to invest in legacy systems – in vain for new use-cases
- Built for local installation and local data storage, which makes digital data communication very challenging
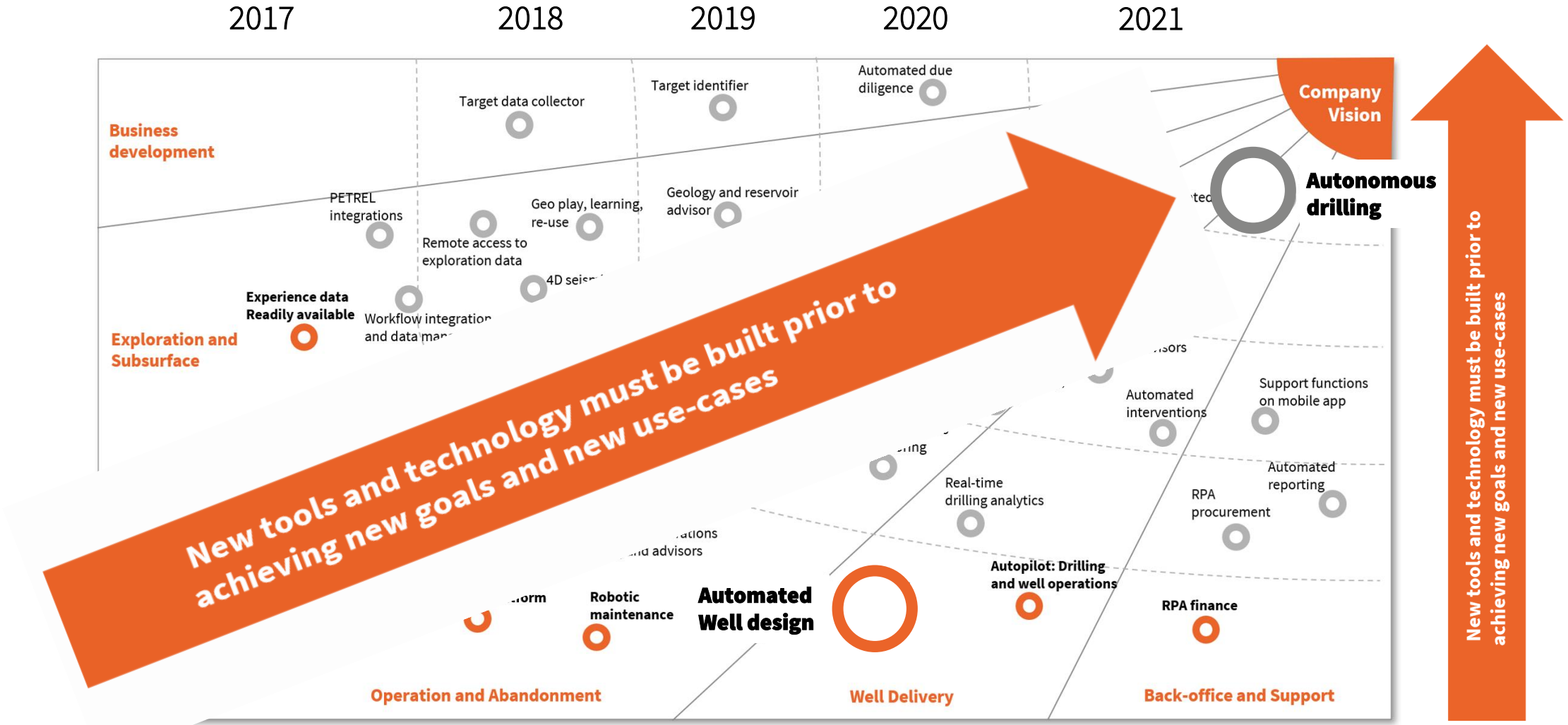
New technology: Modern technology stack

- The bold choice: Unproven, but necessary for enabling change
- Seamless two-way communication between apps
- Data is readable for humans and machines 24/7

Graph axes: Gains (vertical), Digital journey (horizontal). Curves labeled "Old technology" and "New technology".

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OLIASOFT WELLDESIGN

- Complete end to end well engineering toolset, fully integrated

- Rule based and automated trajectory and casing design

- Entire application from data, engines and results are built for machine-to-machine communication

- Fully scalable to real-time data streams and digital twins

- Build your own unique work processes with the individual building blocks

| API | TRAJECTORY DESIGN | CASING DESIGN | TORQUE & DRAG | HYDRAULICS | TUBING DESIGN | BLOWOUT & KILL | API |
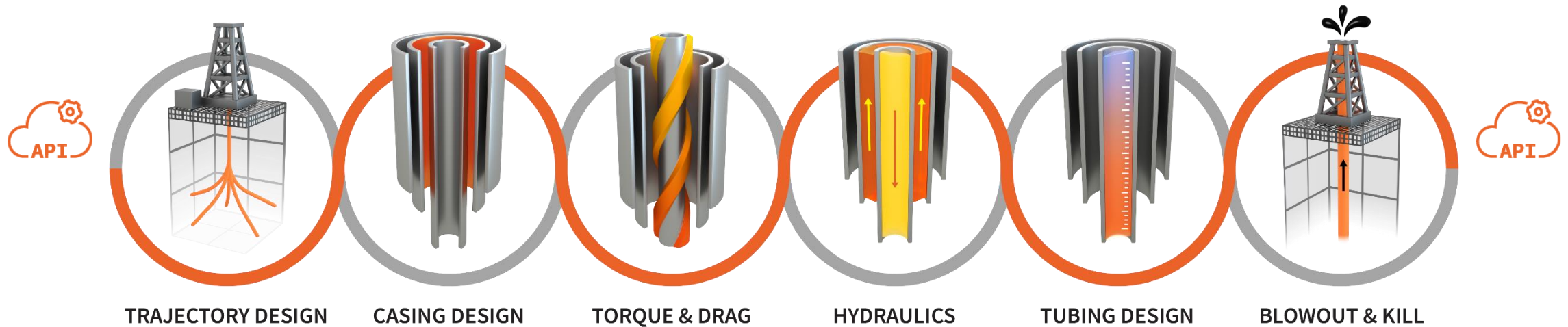
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Typical digital road map 5 - 7 years ago   How far have we come?

Integration of Oliasoft WellDesign® and Company application – Equinor WellCom

Computer systems and applications are not seamlessly integrated

- Data and results are transferred manually
- Stakeholders don't operate in a common data model

- Wells and projects are created in Company application WellCom
- Transfer of business objects to Oliasoft: Input data, definitions
- Automated creation of workflow tasks, designs, simulations etc.
- Performing tasks → Validation of design
- Seamless transfer of validated designs and results to WellCom

- Ensuring single data input and eliminates manual repetitive tasks
- Increasing workflow efficiency (60 % reduced time for well design)
- Facilitating proactive cooperation between domains and siloes
- Allowing evaluation of numerous alternative designs
- The integrated workflows reduce errors and drive standardization

WELLCOM equinor
Create project
Create design

— Business objects → API

OLIASOFT WELLDESIGN
Auto create project
Trigger simulations

OLIASOFT WELLDESIGN
Validate design
Perform tasks

← Data transfer — API

WELLCOM equinor
Valid design
Results
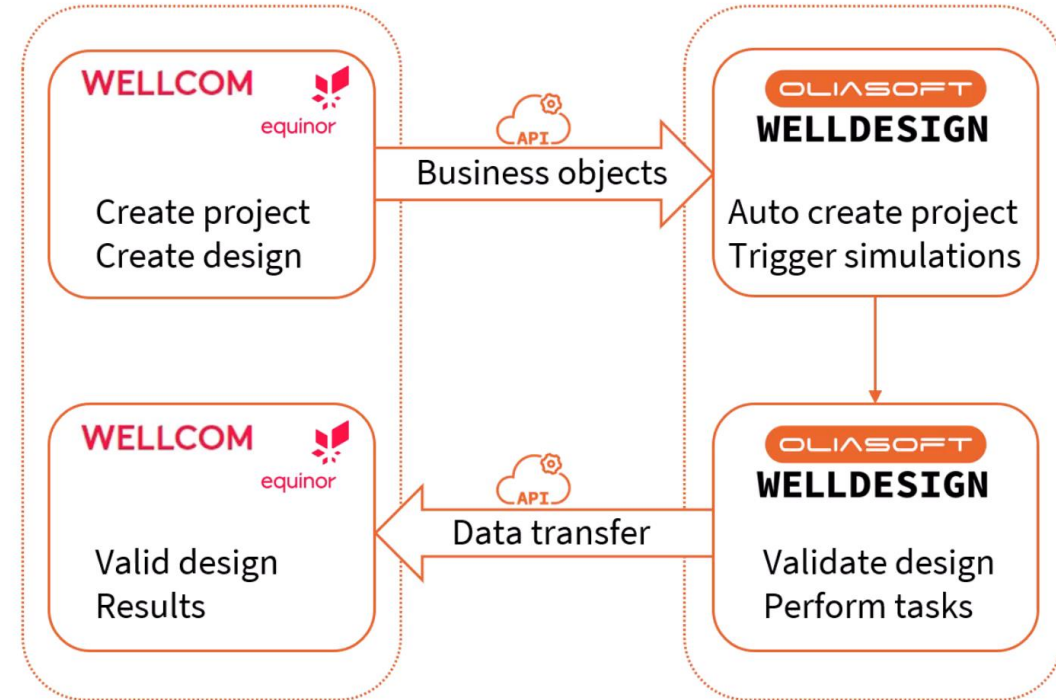
Importing and automatically designing numerous well alternatives

Challenge: Evaluate a great number of well trajectories

Numerous trajectory designs are proposed based on geological and historical input
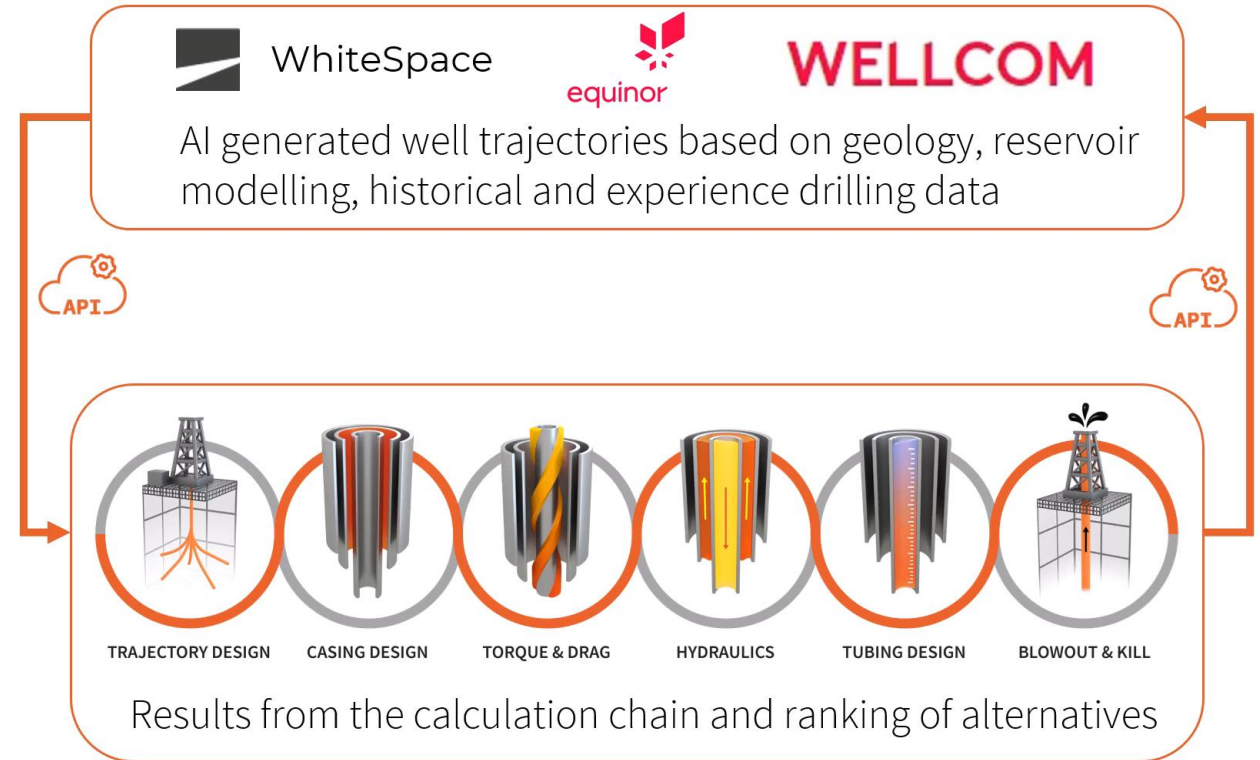
- Well design tasks must be done to find optimal alternative
- Performing iterations manually per design is time consuming

Solution: Automatically simulate all design options

- Iterations per well alternative includes torque & drag, casing and tubing design including thermal simulations
- Computationally demanding simulations are scaled to be handled in parallel
- Design alternatives are ranked according to a pre-defined rule sets

Impact: Significant workflow efficiency gains

- Oliasoft automates the design process and ranks the performance
- In depth evaluation of drilling mechanics, ECD etc. for thousands of well alternatives
- Optimal well trajectory and design lead to safer and more cost-efficient drilling operations

WhiteSpace   equinor   WELLCOM

AI generated well trajectories based on geology, reservoir modelling, historical and experience drilling data

API   API

TRAJECTORY DESIGN   CASING DESIGN   TORQUE & DRAG   HYDRAULICS   TUBING DESIGN   BLOWOUT & KILL

Results from the calculation chain and ranking of alternatives

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Oliasoft WellDesign – From a complete well engineering toolset to automated and integrated digital well designs

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WELLDESIGN

WELL PLANNING/ CONSTRUCTION

Complete well engineering toolset, modules integrated across the design chain

AUTOMATED WELL DESIGN

Automated and optimized well designs based on rule-based engineering

DIGITAL SUBSURFACE

Automatically import key subsurface data for well engineering, push results and design back

REAL-TIME DIGITAL OILFIELD

Auto generate digital DOP for rig crew. Compare real-time data to well plan and re-visit

ENABLING THE NEXT DIGITAL ECOSYSTEM

Machine to machine communication through the open API to enable free data flow and true digitalization

ENERGY TRANSITION

Unique capabilities for modelling geothermal wells and CCUS/CO2 injection wells

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