

## Summary HWT presentation DAP symposium 2015

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**Huisman Well Technology (HWT)** is a joint venture between **Well Engineering Partners** and **Huisman Equipment** that combines the expertise and understanding of the drilling process with a highly skilled and highly innovative equipment manufacturer for the drilling and offshore industry. Together these companies share a vision of improving the drilling process and cutting total costs of wells.

In the current drilling climate and especially geothermal drilling, the total well cost can make or break a project.

Drilling technology, although advanced, is still based on old principles. Rotary drilling technology has been in use in early China (3000 b.c.) and in ancient Egypt and even Leonardo da Vinci created a design for a rotary drill in the early 1500s; it closely resembled the rotary drilling method employed today, although these ancient versions were driven by mules.

The concept of rotary drilling has evolved and grown over time with prime examples of Colonel Drake's rig in Titusville, Pennsylvania, marking the launch of a worldwide industry.

Over a century later we are still using the same basic technology and try to make it more efficient and safe. In many parts of the world this is not even true. We are developing smarter logging tools, we manage to drill deeper, at more remote locations and slowly move to more automation. The industry however is very conservative and is slow in adopting new technology.

**HWT** looks at the process as a whole: the goal is drilling to a certain depth safely and as quick as possible. The total cost of a well is made up of various components: rig and rig equipment, safety, risk mitigation (well control equipment) and all kinds of third party services and external experts.

At **HWT** our goal is to reduce the cost in all areas:

1. Increase process efficiency, minimise equipment handling, reduce non-productive time.
  - Enhanced casing installation system (retrievable casing while drilling (level 3))
  - Automated Rotary Steerable System
  - Integrated and continuous Managed Pressure while Drilling
  
2. Minimise rig size and rig components to reduce daily operating cost (rig day rates and spread cost)

- Small rig = small footprint
  - Reduce hookload requirements by using composite casing
  - Reduce energy requirements
  - Reduce pump capacity
3. Minimise and eliminate rig components leading to the ultimate goal of rig-less drilling and drill wells from a regular autocrane
- Eliminate or minimise Top drive, rig pumps, BOP (where possible)
  - Use MPD to reduce operational cost
  - Eliminate third party services
  - Evolution of all items above will lead to less and less equipment requirements while still being able to drill the same type of wells safely at a fraction of the cost

**HWT** works step by step towards an integrated rig solution to drill wells safer and more efficiently at lower operational cost. **HWT** provides technical solutions to reduce risk and regain control over the entire system.

