



Delivering field site IT

Today's challenges

Tomorrow's opportunities

David Ellison

About ISN

- Started in 1999
- 3 of top 4 UK Independents
- Specialist in Upstream Infrastructure



IT Infrastructure and the Digital Oilfield

Past 20 years?



Present



We're bad at predicting the future

There is no reason anyone would want a computer in their home.

[Ken Olson, CEO of DEC, 1977](#)

Drill for oil? You mean drill into the ground to try and find oil? You're crazy.

[Associates of Edwin L. Drake, driller of first productive oil well, 1859](#)

The Americans have need of the telephone, but we do not. We have plenty of messenger boys.

[Sir William Preece, Chief Engineer, Post Office, 1878.](#)

There is practically no chance communications space satellites will be used to provide better telephone, telegraph, TV or radio service inside the US.

[T Craven, FCC Commissioner, 1961](#)

There is a big problem with television and that is you have to sit there and look at it. The average US family has no time for this.

[New York Times, 1939](#)

Where is innovation needed?

- More efficient projects in tougher environments
- Better, faster decisions
- Faster access to more information
- Offset the “crew shift”
- Protect people and the environment



5 game-changing
technologies that will
impact upstream E & P in
the next 20 years

1 - Pervasive computing

- Disappearance of hand held devices
- Computers in walls, windows, clothing, skin
- Projected onto glasses, contact lens, retina

Impact for oil industry:

Safety, better info at well head,
less capital cost.

2 - Interfaces

- Flexible screens
- Telepresence
- Haptics
- Mind control
- Exoskeletons

Impact for oil industry:

Collaboration, staff scarcity,
fewer people in dangerous places

3 - Nanotechnology

- End of Moore's Law
- Quantum computing
- Graphene

Impact for oil industry:

Reservoir modelling

Every area where IT used

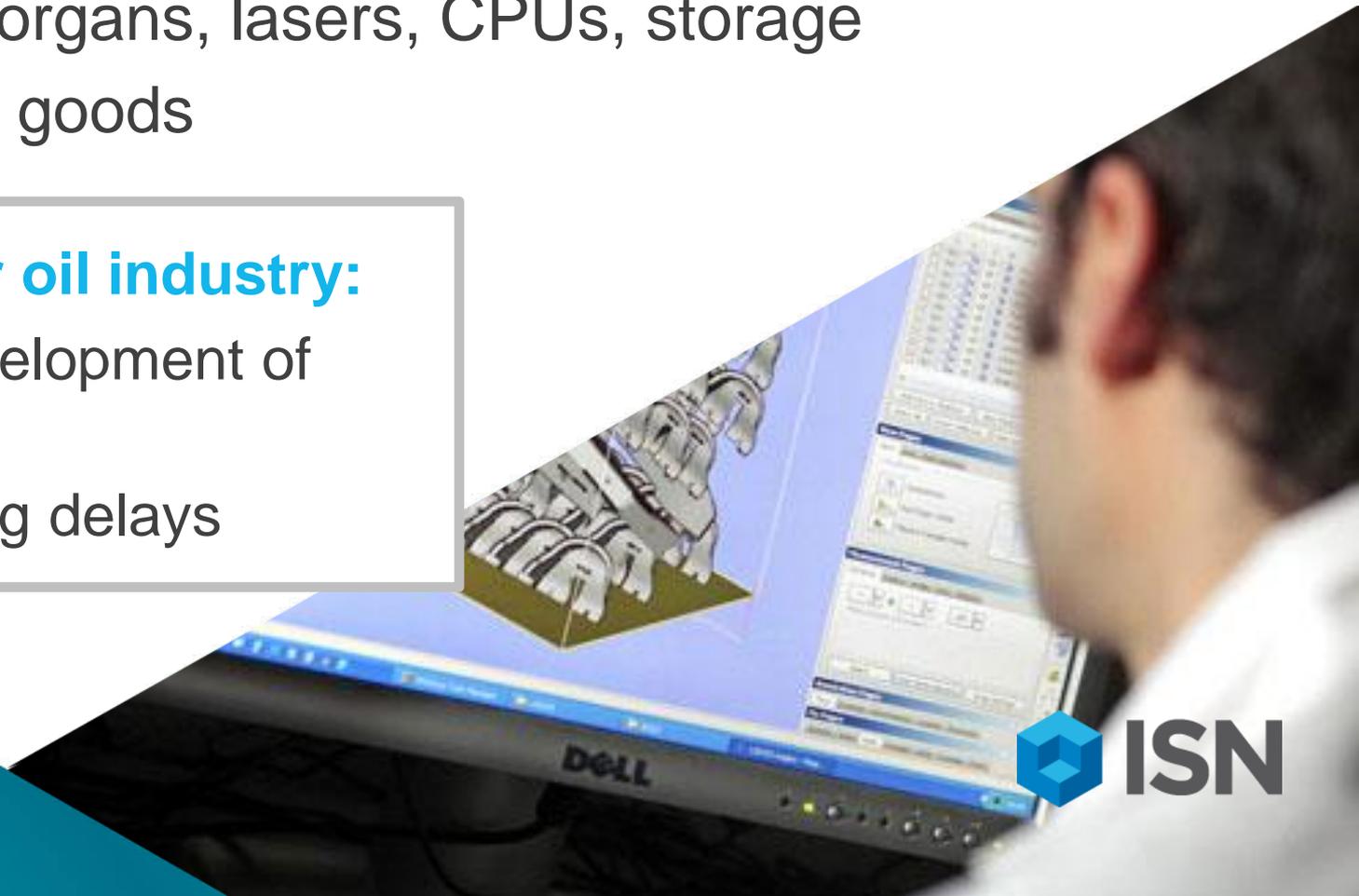
4 - Manufacturing

- 3D Printing
- Growing organs, lasers, CPUs, storage
- Producer goods

Impact for oil industry:

Faster development of
new tools

No shipping delays



5 – Pervasive Networks

- 5G
- HAPS
- Small satellites
- Commercial and political challenges

Impact for oil industry:

Finally centralise data and decentralise workforce, key enabler

...and one
technology that
probably won't
affect us as much
as we imagine

Artificial intelligence?

- Modelling the human brain
- Expert systems
- Cognitive boosts

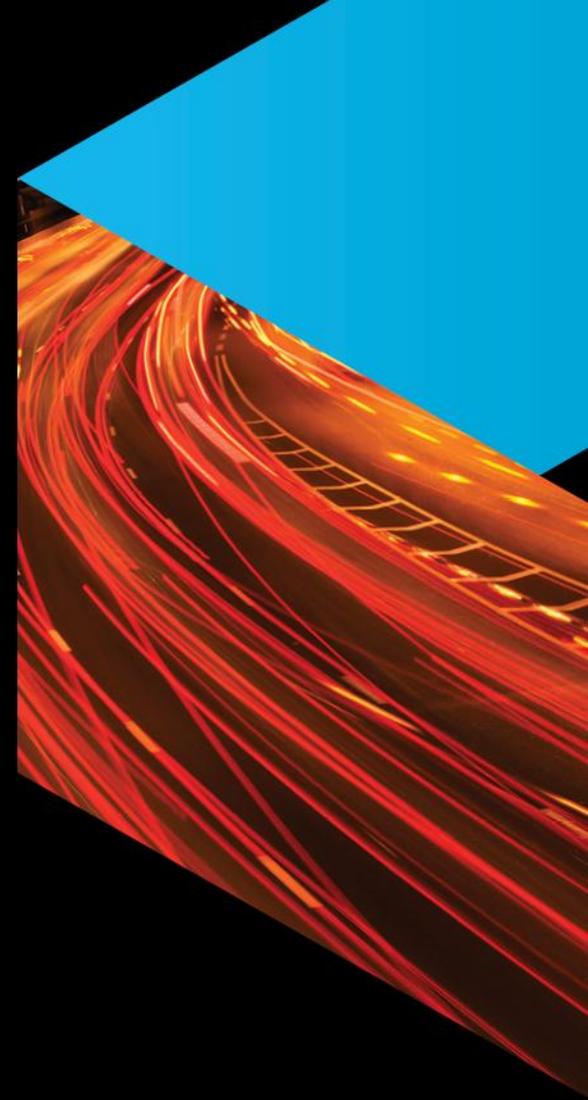
Impact for oil industry:

More flexible workforce,
knowledge retention



How to predict the future

- Bet on fundamental human wants

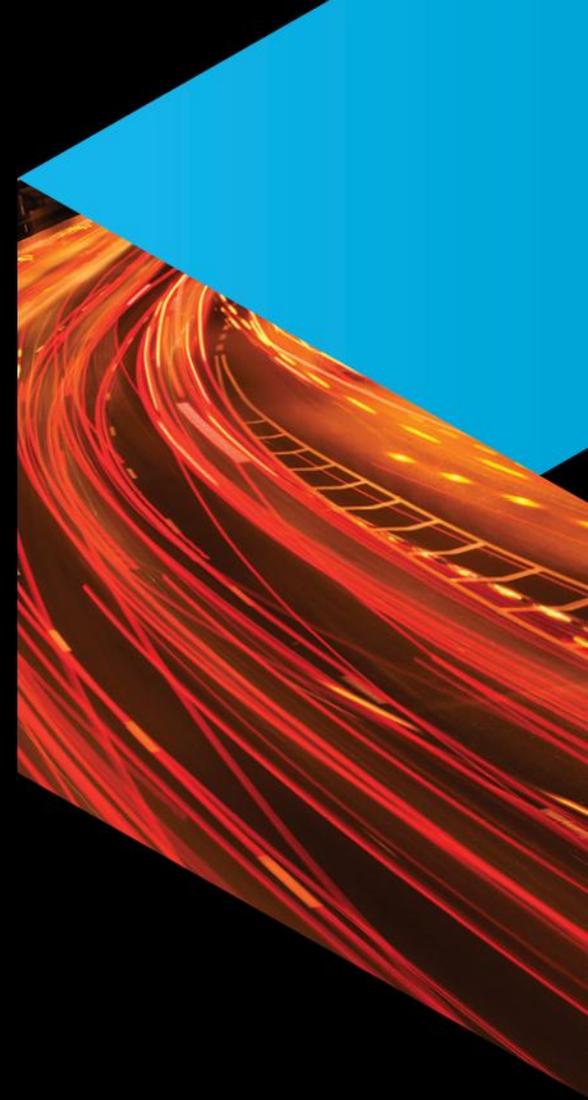


How to predict the future

- Bet on fundamental human wants
- Overestimate the pace of change

How to predict the future

- Bet on fundamental human wants
- Overestimate the pace of change
- Start to make it happen now



Thank you
Any Questions?

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