Transcript: getting data tools implemented faster
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Finding Petroleum discussion session

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With audience contributions from:
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Stephen Allen, senior consultant, Wipro Technologies, Oman
Martin Henderson, senior geoscience data analyst, Santos
Karl Jeffery, editor, Digital Energy Journal

Julian Pickering

So for the purposes of this afternoon discussion I want to introduce an element of virtual reality. I want us to start thinking that by the end of this year we have ten dollar oil.

I know that requires a fair amount of sort of wandering in perception.

If we think of it in those sorts of terms, so that suddenly we're going to accelerate the requirements for DOF / integrated operations, is actually going to make on the industry.

How are we going to implement it? How are we going to get those processes embedded?

Unless we disconnect ourselves from the 'we're going to make money easily' and 'we can take it or leave it' type approach, we're never going to move to the new place. That's the mantra for this afternoon, we've got $10 coming along by Christmas time.

Jess Kozman, Mubadala Petroleum

That's easy, the first thing we do is lay off this lot.

Julian Pickering, Digital Oilfield Solutions (chair)

It will still make an interesting discussion.

David Hattrick, Oracle

If I could put a different provocative operation to use Edward de Bono term.

I think the likelihood of $10 a barrel is pretty infinitesimal.

I think really the inflection point in the industry is unconventional, because of the scale of simply the number of wells, the turnaround of completions, that’s probably more likely going to be the catalyst to look at.

This is not original. I've heard it quoted by petroleum engineers, we've got to become manufacturers in unconventionals.

Tony Edwards StepChange Global

I take issue with that. I think the delivery of unconventional wells is manufacturing. The operations is absolutely not manufacturing.

Julian Pickering, Digital Oilfield Solutions (chair)

Don’t take me up too precisely on $10 oil. What I'm interested to do here, is some discussion whereby when we're all fully committed to the idea of fast implementation, being driven by business requirements.

I’m a strong believer, fundamentally, the main reason we're holding back on DOF is not because of technology, it is because we have unsuccessfully articulated the business value behind the digital oilfield

If you can identify a business case for the adoption it would happen almost overnight.

I want to move to a place where actually from a business point of view, we have to do it.

Andy Moore, IS subsurface manager, Santos

The first place to go is to sack the people in a sense, you've got to take the people out of the equation. It is the process which is wrong, it is not the technology, it is not the data.

It is the use of the data through a human interface which is the issue.

The only way you're going to get quicker at this stuff is to take the humans out.

Automation surely is the only way forward.

The big question is, how do you automate things like data quality? How do you automate things like interpretation of images. It is that process stuff which has got to be streamlined.

I think the technology is there. I think the data in the right quantity and the right quality is there to support it.

That's where your big problem is, is actually changing the practises within the industry so that we can be more effective and more efficient.

Julian Pickering, Digital Oilfield Solutions (chair)

Can you phrase it into a question?

Andy Moore, IS subsurface manager, Santos

How do we automate data quality checking? Do you think technology is capable of doing that so we can remove the human from that part of the process?

Karl Jeffery, Digital Energy Journal

I had a chat with Philip Lesslar a few minutes ago, he said that when he was from Shell, he said he had a dashboard that could show him the data quality in any part of Shell, so he could ring up the seismic department in Siberia and tell them that their data was the worst data in Shell, they'd have his attention that day.

Jess Kozman, Mubadala Petroleum

I'll take a shot at that. Yes there are aspects of data quality that you can automate. Things like completeness, consistency, persistence, that are obvious to an automated process. You can set expected threshold values in the data set and be flagged if you exceed that.

The problem we have with automating the whole process is that, the business of finding oil and gas is about looking for anomalies.

If you automate the process and take out the anomalies, you've ruined the business.

There's always going to be that element of the human interpretation part, someone who recognises there's a reason for something being an outlier. It's not wrong, it's important.

I think John [Henderson of FFA] did a good job of addressing that. It's a marriage between the data driven processes that [work well] with computer operations, married to the human capacity for pattern recognition - which is why we're at the top of the food chain.

You can't take that out entirely because that's what oil and gas interpretation is all about.

As data managers, we're trying to impose structure on a group of people who are paid to be creative nonlinear thinkers. That will always be an issue.

Andy Moore, IS subsurface manager, Santos

That drives to the old Schlumberger argument, you spend 80 per cent of your time messing with the data and 20 per cent of the time interpreting it

We've got to drive down the amount of time we spend messing around with that data.

I'm talking about the repetitive menial stuff. We've got to automate that.

In our case it is the coal based methane stuff in Queensland.

The ramp up in number of wells which are going to be drilled cannot be handled by simply ramping up your employment force, your human resources, that ain't going to happen. There is no budget and there are no people.

Clearly you've got to work smarter. That working smarter is the only way that’s going to happen.

Tony Edwards, StepChange Global

How do we make a business case? In that case you have no choice. You cannot run this the old way.

That's what we call an enabling business case - it’s not a business case about 2 per cent more production or 2 per cent more recovery, it’s something you have to do.

To answer the question ‘what do you want to do tomorrow that you can't do today - and I need to do it.’

That's where we see a business case come very quickly.

One business case we were involved in, fell in 12 weeks.

We have to articulate the business case in the right way, mostly we don't do that well.

If you can find the right driver, articulated in the right way you can make these things happen pretty rapidly, I would say.

To answer Julian’s question about if we hit $10 a barrel what would I do first, and what would I do in a year.

The one thing I wouldn't do is buy technology. Absolutely not.

It’s happened to me twice in 2 companies. I had a phone call from someone in Trinidad saying we're not going to hit our production target for the year, its July can you help.

It’s July, you’re not going to install a data and information system, you’re not going to build a room, you're not going to add much in the way of technology unless it is particularly off the shelf.

So what do you do? You do the change management that you would have done if you were going to put in all the technology.

And we found, we got about two thirds of the value from doing that. Organising people in way, getting them to talk to each other in the right way, getting the right relationship between offshore and onshore, co-ordinating the wells guys and the surface guys, adds a lot of value.

Eric Toogood, Norwegian Petroleum Directorate

We have some examples in Norway [from our] plan to make the process of reporting daily production reporting with the license partners more efficient. That has been a big challenge.

First of all we had to make a data standard based on PRODML so you can get your data round.

Putting this in the workplace has been a really been a big problem.

Typically people who come to these kinds of events, they are the subsurface guys - they are working with the seismics and the logs. The production data

environment - that's a whole new world, there’s not been a focus on data management in the same way.

I think that's a big challenge.

We have seen now that companies coming on scene on the new field - they will adopt the latest standards - but that's only going to solve a small part of the problem.

Because you have fields that have been producing for 20 years, that means someone has to go in and plug in the various components, web services working.

I am sure there's a perfectly good business case for this – but why don’t the oil companies put the business case, then we can get this implemented.

They've asked us as the authorities, why can't we legislate. But the business is up to the industry to fix themselves.

Karl Jeffery, Digital Energy Journal

I was at an e-commerce conference 2 weeks ago with an association called PIDX. I was talking to a board member who had just been around the National Oil Companies, he said National Oil Companies are employment engines. They are not interested in reducing staffing cost.

David Hattrick, Oracle

Just to answer the question from a technology point of view, I do think there are some seeds of potential of data quality, automating that process, with what’s happened in big data.

The buzz in big data at the moment is trawling through tweets and Facebook. It is particularly prevalent in businesses which are very sensitive about what is being said about their brand.

But what they are doing recently is facilitating meetings between our big data techos and the OT [operational technology] vendors, Schneiders and Honeywells.

This is the other thing that's going on now is blurring between OT [operational technology] and IT [information technology]

The intersection point where there may be something here - is about big data, key pair, NoSQL, Hadoop, these sorts of technologies.

I have heard a rumour that a big oil major is using these big data technologies in seismic interpretation. I don’t know if it’s being used in data quality.

In Perth there's an army of people at the 2 big miners there, validating data as it comes out of time series databases, before it goes anywhere near a commercial system.

There's all these issues around sensors and double polling, wells that have run for 26 hours in a day, all of those things, it’s sort of manually being done.

People have written scripts and Excel macros to normalise data.

But I do see there is a hope.

The people in Oracle, in R+D, when I first saw the material before we released these big data technologies, there are a subset of people who think there is an application to real time data, not just vast quantities of data out on the internet, or a retailer's transactions and the like.

The other in terms of pattern recognition. If you go back, probably the smartest mathematicians in the world were in Wall Street and in the City. And what they were doing was writing algorithms so traders could spot patterns and place bets.

In terms of what I mentioned yesterday, the industry [technology] adoption curve [starts with] spooks, financial services, then telcos, then the rest.

There are probably lessons to be learned from the financial services industry and some of the technologies they've used about complex event processing, business event processing and all this sort of stuff.

So yes - the oil business is a different and unique business, highly complex and highly technical in many ways, but it's not unique.

In supply chain and logistics, I think the industry is starting to realise best practise sits in transportation and discrete manufacturing for example.

So, lessons to be learned, best practises to be applied, rather than reinventing the wheel.

So I do think, there is potential in technology to solve some of these problems, but not technology for technology's sake.

Tony Edwards, StepChange Global

We've been doing some work with BAE systems on some of the approaches they've got where they look at data from very very diverse processes, from radio information, data photographs. They actually risk the quality of data that they've got, before they send it up to make decisions. There are people doing this sort of stuff.

Ugur Algan, Volantice

What exactly do we mean by data quality? We have to have a good definition of what we mean by data quality before we go off. Check it, verify it, whatever.

What does data quality mean? Is it the quality of: check that log is taken in the right way and the calibration was correct when we acquired the log?

Is it the quality of the Meta data - is it being described correctly? Is it the completeness?

Eric Toogood, Norwegian Petroleum Directorate

The answer there is yes to all these questions. You have to attack them all and make sure you have control.

Or indicate what you don't have control over, this hasn't been checked by a geologist, or something else hasn't been checked.

You're not sure about the actual position of the well or whatever it is.

If you can check the meta data automatically that shouldn't be a problem.

Coming back to the initial question, we're not going to see $10 oil, so where does the drive come from. It's not going to happen on its own.

Karl Jeffery, Digital Energy Journal

I had a shocking experience with data quality on Tuesday, I had an idea of walking to my hotel using a Google Map, it was in a different place to where it was on the Google Map. But that's like big data. It's not manually checked. Do you use the big data way to get data accuracy, or lots of manual work to get data accuracy? We'd probably all go for the Google method, rather than the Ordnance Survey type manual method?

Eric Toogood, Norwegian Petroleum Directorate

I don't know about mapping. I imagine one of the challenges is to know the limitation of your data

Andy Moore, IS subsurface manager, Santos

Martin made a comment about business rules - data quality is defined by the business process.

Part of [the problem with] sacking Jess, if you use that analogy, is getting out of his head what he knows.

You've got to capture the business rules and get that into a system that can then use those rules to validate data.

The industry is not incentivised to divulge its knowledge and share it with the system. It is counter intuitive from a career point of view. But that's never the less what's going to happen.

Julian Pickering, Digital Oilfield Solutions (chair)

One of the things to recognise is that life is based on uncertainty. I don't mean that in a joking way. We hold fast to certain pieces of information that we believe are absolutely correct, but we don't know they are correct at all, we've heard them or we suspect them.

Frankly we live in an uncertain world - but the important thing is to recognise the uncertainty - that's when the real problem comes.

You read something that's 27.836543, you wonder if it's good to the 4^{th} decimal place. Digital systems imply a level of accuracy that is way beyond what they actually are.

To some extent, there is something about making the data accuracy fit for purpose, so you can do decision making based on that.

The key thing is knowing where this value is good to +/- 20 per cent, 50 per cent, 500 per cent, whatever it may be. So you make your decisions with unbounded uncertainty based on the quality of your data.

Andy Moore, IS subsurface manager, Santos

Why don't we use uncertainty principles in subsurface interpretation - this is p90, p10?

John Redfern, Digital Earth

Perfect data is never worth it, because you can never get perfect data. Google maps is 99 per cent correct, that's good enough. It's not worth paying a thousand of bucks to get absolutely perfect data

David Hattrick, Oracle

As Apple is correcting serious errors in their mapping, they are mobilising the millions of Apple users around the world to correct their map data, saying tell us what's wrong, we'll fix it.

This anti-spam - when you respond to a website - this many hands make light work – CAPTHA, that's fascinating.

Every time you're matching, you're actually helping this facility that's basically translating all of these ancient manuscripts. It's mind boggling what's going on here.

There's the power of social networking, the power of the network effect, being able to mobile millions of people to do a job they don't know what they are doing. So there's lateral ways of coming at some of these problems.

Eric Toogood, Norwegian Petroleum Directorate

We have one example from NPD where we have a lot of internal databases populated in different ways, at the aggregated level.

When we decided to start publishing this on our website, so that companies can download this stuff, the quality went up straight away, because there's a feedback loop.

You're exposing your data - you get good feedback, you can correct things.

But there's still another step to do, which is to automate the data rather than punch it in, so you have systems which are talking to each other from day 1. That needs a complete redesign of the process. That's one way going forward.

Samit Sengupta, Geologix

On the ground there's another problem, much lower level, we come across quite a bit, is understanding the data itself.

And if there were data dictionaries which were standardised in the industry and easily accessible, then that job would be easier.

Some years ago, there was talk of having that as a web service, where you have the entire data dictionary available.

So you know, is there’s a measuremenent, what is the source of the measurement? What are the transforms for the measurement?

Just a simple thing, like if you go and drill in Russia, their gamma ray logs are exactly opposite of what’s in the Western world.

Now you can imagine the impact if you didn't know that, you’d perforate the wrong areas, or you’d look for oil in the wrong areas.

Having a good data dictionary is a way of solving a lot of the operating problems.

Andy Moore, IS subsurface manager, Santos

Isn’t PPDM working on a data dictionary?

Jess Kozman, Mubadala Petroleum

They are incorporating some existing naming standards, data dictionaries, mnemonics, and things like that. There are those multiple flavours from different service providers and different data providers.

It goes to the discussion we've been having about metadata. You have to be able to deliver something along with the data about the risk associated with it. The potential ambiguity. It is all part of what we need to be able to deliver, with the data, to achieve this goal of being able to use it faster.

Part of the lessons learned from the last few years - we've spent probably too much time on the mechanics of delivering the data - but not thinking about what does the end user need to know about the data to be able to use it faster.

Julian Pickering, Digital Oilfield Solutions (chair)

The data quality argument is important but it is also a bit of a rat hole to some extent.

I want to get back to the fundamentals today, which is about getting digital oilfield and data tools out there faster.

Let’s think in those terms. Unless we can make a clear case that data quality is a hindrance to adoption of the digital oilfield, and I’m not sure we can easily do that, then I would like us to think about getting some of these processes in place.

Stephen Allen, senior consultant, Wipro Technologies, Oman

When you are implementing a different way of working - then the traditional mantra is, it is to do with people.

So normally what you try to and do is get as many people as you can, get everybody onboard, with what you're trying to achieve.

That never works perfectly.

An alternative method is you seek out a champion, you work with the champion, to demonstrate that it can work. That never works perfectly either.

So those two options of implementing something. So just inviting the panel to discuss those pros and cons, or any other options there may be.

Tony Edwards, StepChange Global

We look at this in terms of maturity, the same way Jess was talking about yesterday.

We look at it in terms of maturing processes and organisation.

Typically we see a lot of people doing a lot of the change management too early.

You need to do communications, and get people involved, you need to do workshops to see what's coming

But actually what do you do when you get this data and you get this fancy room and you get this video? You kind of do what you did yesterday on day 1. And slowly you change what's going on.

We see very many people thinking, that day, or 3 months after that day, is the end of the project.

Actually we see day 1 as the start of the project. We don't see it as a project. We don't think it has an end, it carries on.

And so we mentor, monitor, coach, facilitate, and we carry on, on a very long tail. We will still be coaching 18 months, 2 years or 3 years. It may be a few hours a month.

John Redfern, Digital Earth

You see this with every technological change. People do the same thing they did before.

The first thing that happened when we had computers is people printed a lot more than they did before.

When it comes to adopting new technology, Windows is popular because it is like a desktop.

Digital logs are way better than raster logs, but in North America, raster logs came in and they were great, because it's just like cutting and pasting paper together.

One of the ways to do it, is to use a paradigm that's the same as before, but recognise it takes many years for the actual impact of the change people's ways of working.

David Hattrick, Oracle

Going back to the conversation we had beforehand.

Reality is a lot of operations run on Excel spread sheets, but there’s Excel hell.

I suspect the future is an Excel interface, but that's all that's there, is the presentation layer looks like Excel, but there's all this data quality, data management, data integrity, all these automated disciplinary perspectives on the data sitting behind.

It’s not Excel - it just looks like Excel

John Redfern, Digital Earth

The easy thing is to write ore code. The difficult thing to do is change neurons and people's brains.

Tony Edwards, StepChange Global

One of the things we see, if you look at the array of digital oilfield across different companies, I was at a workshop 8 weeks ago and one company stood up and said this is all about technology and processes, you’ve got to have the right processes, which drives the interfaces between different disciplines.

The other company said, this is all about relationships - how we work and how we make decisions.

It’s extremely co-dependent.

And both of these can work, depending on which company you’re in.

Personally I think there's a bias towards one working better than the other.

Many companies they fool themselves into thinking that they adhere to processes and because they write a better process, that's the way it works, and actually it is relationship based.

David Hattrick, Oracle

I think there's a bias to a Western hierarchical way of doing things.

The fact of life is Japan has industrialised in 25 years, mindboggling.

But that is a culture where change percolates up from the bottom.

Toyota's total quality control system, the industrialisation of Japan.

[from] the time I spent in Japan - it occurs to me this bottom up way of happening, and how it still takes the same amount of time. But when the change has happened, it is real change.

As opposed to the Western CEO who wakes up, sends an e-mail edict.

I'm philosophising here, I do believe there are lessons to be learned. I suspect digital oilfield would happen quicker if it was bottom up.

John Redfern, Digital Earth

People who are bottom up are young.

I'm still old enough - I used a slide rule in high school.

The people who are younger, all of this is natural.

One of the things we have to think about, if we want this done quicker, is all the paradigms that people are they used to working with. So anything that's based on a cellphone, for example, or the interfaces and ways of working, social networking, that's some of the ways that are going to glue together your company.

Tony Edwards, StepChange Global

We need a survey of young engineers at the 2008 Intelligent Energy [conference] – we surveyed 1500 young engineers in the Society of Petroleum Engineers.

The thing that came back - is 22, 23, 24 year olds said, 'we can collaborate - we know how to do this.'

The 30 year olds were basically in the same position as the older guys. Literally we were beating it out of them in the first 5 years, we were saying, you will work the way we work.

John Redfern, Digital Earth

My kids never used e-mail until they went to work, now they are using e-mail. That was old school for them.

Tony Edwards, StepChange Global

The classic example I often use: our generation, if we want to go out to a bar on a Friday night, we have a plan.

Kids go out now and start texting each other, where are you, I'm here, this place is good let's go there. They synchronise the way they work. They don't have plan, they don't co-ordinate. They synchronise the way they work. They don't have a plan.

There's a big body of literature in the defence industry around synchronised working.

John Redfern, Digital Earth

We all rely on mobile technologies now. I had a guy I was meeting, he didn't have a phone that worked there. It was impolite almost. It put a burden on me. I had to call, get the guy, go out and page him in the lobby, it was ridiculous.

David Hattrick, Oracle

The other thing, neurologist I believe approved, is this next generation is capable of parallel processing far better than we are, they can multitask, so they can be doing several things at one time.

John Redfern, Digital Earth

They can't concentrate on one, that is the downside.

Ugur Algan, Volantice

I think they can either multitask or they can tie several tasks together unsuccessfully.

But the original question was, how can we speed up implementation, do we go by a route of having a sponsor, or do we go by a route of having buy-in.

My personal experience is, this is going to sound cynical, but we never tried to put ourselves in users' shoes and say [from their perspective] "what's in it for me."

We say what's in it for the company, or the community, but what's in it for me. That question doesn't get asked.

[They say] "WITSML would be good, but yeah you are asking me to do all this extra work because [it helps downstream]. I don't care."

John Redfern, Digital Earth

Especially if it eliminates your job.

Ugur Algan, Volantice

Either be in control and say "you have to do it or else" or you have to incentivise people in some way, pay them or give them a bonus.

Tony Edwards, StepChange Global

Fundamentally we think of business cases in 3 buckets now. Qualitative, which is the traditional one; quantitative, which is what's in it for me; and enabling, and we put 3 of them together. We see that the business case rarely flies on the top one, I would say it never flies on its own. If you don't answer 'what's in it for me' you're in a lot of trouble.

You [end up wanting] mechanical engineers to do something on behalf of production engineers, who win. So the production engineers win, but you're asking a different discipline to do something. Unless you can align that and make it work it becomes very difficult.

There's a number of ways of doing that. There's organisational alignment approach or government alignment approach, your incentivisation.

If you incentivise people in the same way to have the same outcome, you've got a better chance of winning.

You can also then align the organisation -you've got a better chance.

We had a classic case in one major, we did an integrated asset model, [including] upstream offshore and downstream terminal

The organisation was split into 2 performance units with 2 performance unit leaders, and they came together at the asset manager. So nobody owned the model. Nobody utilised anything out of the model. It was actually an organisational issue.

Until they said, this is not two performance units, this is one performance unit with one manager. Then it worked fine.

There was no incentive for the upstream guys to own it when the impact was downstream and vice versa.

Julian Pickering, Digital Oilfield Solutions (chair)

I agree with that completely, Tony. One of the things to build on there is the traditional business models in oil and gas are too restrictive. They don't include all the parameters that are relevant.

They don't include personal factors, satisfaction of employees and things like that.

If you think about a question, perhaps 5 or 10 years ago, you put together a proposition that several hundred people were going to camp out on a wet London street for 48 hours so they could be the first to pay £700 for a mobile phone.

How absurd would that be? We'd never paid more than £25 for British Telecom to come and stick a phone on your desk, and now people are doing that. I know it isn't quite as expensive in the US. We're talking £700+ in the UK.

David Hattrick, Oracle

There may be a model in that, (joking) Apple probably pays half the people to do that. Maybe a quick way to digital oilfield is to bribe everybody?

Julian Pickering, Digital Oilfield Solutions (chair)

Let's treat it with an element of seriousness. Somehow Apple have convinced the people that it's worth doing that.

We're still trivialising that. From our perspective there's something funny, we think these youngsters are just silly kids who want to be seen with a mobile phone. It's not actually. We need to treat it with seriousness.

Apple has created a market that didn't exist. Apple has created a value to these young people in being seen first with these mobile phones. That's the reason they're doing it.

They're not doing it because an Apple iPhone is superior technically to a Samsung Galaxy or whatever it may be.

It's got an element in that business model which says I want to be seen with the iPhone.

That's where our business models [in oil and gas] are inadequate - we're not building in that aspect of personal satisfaction.

So if someone for example, has a load of children and they want to work at home and so on, they're likely to be far more productive by doing that. If

you give them the technology to do that, you might find their personal performance is transformational. You need to look at the whole picture, not just a part of it, not just the output costs, not the input costs vs the output costs. That is a poor quality model.

Companies like Apple have been successful because they've looked at the complete picture rather than just a portion of it.

David Hattrick, Oracle

I question that its status though that motivates these people. Apple is very clever at expanding the use case with the new device.

It's not technology for technology sake. A high resolution camera, greater memory, greater functionality that comes.

By the way the same thing happened when Microsoft used to launch the latest version of windows back in the 90s. People used to queue up for Windows 95, 97.

Because the promise of that next release of the OS provided greater functionality.

Sure there was a degree of "I've got the latest."

But I think it is this creeping increase in functionality of the device that is driving that.

So marrying that back to digital oilfield and the adoption rate, and taking it to your point there's got to be something in it for someone.

The DOF release and the iteration thereof has got to improve the end user experience, as well as obviously benefit the organisation, it has to.

Tony Edwards, StepChange Global

We did some work with Boston University and MIT on capability modelling

They've got an argument for why Apple is successful, basically they changed the capability stack and they occupy and own a certain number of layers. They are able to issue new capabilities extremely quickly.

We think in terms of the adoption for digital oilfield, we've got to deliver a capability to do something.

Up to 3 years ago, I was sat on the other side of the fence at an oil company.

I would get a great technology company would come up to me, with a great piece of software, or a piece of technology, and you'd think, yeah that's great, I can see how that's going to add value.

But what was going through my head was, OK you can do technology that's pretty straightforward. But who am I going to get to do the people change? Who am I going to get to do the process change? How am I going to organise the alignment? Is the asset too busy or not? Nobody sells the capability, nobody delivers the capability.

John Redfern, Digital Earth

The thing that people are missing, with Apple, is that they are things that anyone can operate. In fact, people who are less technically savvy have an even easier time.

When I look at most oil and gas applications, they are ugly, they are the result of 20 years of feature additions and complications, more bells and whistles.

If they came back with something simpler and more streamlined, with the real changes that were needed, then it would be quicker adoption.

Julian Pickering, Digital Oilfield Solutions (chair)

I can see I've used the wrong parallel model. I'm going to change it then, to one you won't feel quite so comfortable with.

Why do some women feel it's important to pay several hundred pounds for Jimmy Choo shoes? Is that so they can walk more efficiently? It's not.

John Redfern, Digital Earth

It's because it's expensive.

Julian Pickering, Digital Oilfield Solutions (chair)

No, it's not because it's expensive. Because, let's not kid ourselves, every decision we make is based on value. This idea that some decisions are made on ..

Karl Jeffery, Digital Energy Journal

Tracey, do you mind joining the panel, it is getting too male and logical here.

John Redfern, Digital Earth

Some purchase decisions are not about value they are about signalling.

Julian Pickering, Digital Oilfield Solutions (chair)

My argument there is, they may be about signalling but signalling has a value associated with it. So to some extent the woman is prepared to .. I'll let you agree or deny this in a minute Tracey.

John Redfern, Digital Earth

It's not just women, guys like sports cars

Tracey Dancy, Dancy Dynamics

That is a whole another issue.

Julian Pickering, Digital Oilfield Solutions (chair)

Now at least I've got you away from the Apple iPhone discussion.

John Redfern, Digital Earth

It is the same argument as signalling. One of the most interesting studies ever seen, they took pictures of guys in front of ugly cars and very expensive cars, and they polled women.

The guys in front of expensive cars were more attractive, empirically proven to the women.

Julian Pickering, Digital Oilfield Solutions (chair)

I agree, they have made a decision that is of value to them. It comes down to value at the end of the day. The reason we show off, the reason we dress smartly and all the rest of it, is a value statement.
It is not disconnected with value.

Martin Henderson, senior geoscience data analyst, Santos

I think it is more about what the person feels – it's the what's in it for me.

Andy Moore, IS subsurface manager, Santos

How do you get that back to the digital oilfield?

Julian Pickering, Digital Oilfield Solutions (chair)

What I'm saying, in digital oilfield terms, if we can truly articulate the value, that is more than the amount it costs rather the amount it produces, you're into a model there whereby our sales pitch will be much easier.

John Redfern, Digital Earth

Will it help us get a date on Friday night? "I work in Digital Oilfield."

Andy Moore, IS subsurface manager, Santos

What you're actually saying though is how you make it sexy, that's the question you're asking. We've decided the 'what's in it for me' is a very important piece of the digital oilfield proposition. So how do you make it sexy, so people want to do it, and more importantly young people want to do it. That solves another problem in our industry.

Samit Sengupta, Geologix

There's an issue with the gap between the average age of geologists in the UK I think is 55 and then the industry never replenished.

Eric Toogood, Norwegian Petroleum Directorate

If you stick with the discussion around iPhones, that’s old technology - and it’s based on standards.

You can ring anywhere in the world today. You can use internet technology to phone, it means that is a technology that is working.

And someone comes along and makes a really nice plug of being easy to use Then you get people hooked on it.

Jess Kozman, Mubadala Petroleum

You’re already may be seeing part of that value case as an incentive for the oil companies, in that part of the justification I've heard for bringing new technology in, is that it makes you an operator and an employer of choice.

If you’re seen to be using the latest technology, the latest applications, whatever. You’re already kind of seeing that.

There's part of that already going into the digital oilfield, with the data management systems. People will be more likely to come and work for you, you're more likely to attract the talent that will keep your operation going, if you’re using something that’s sexy and new.

Tony Edwards, StepChange Global

We had a great example, we opened a drilling real time operations centre in Aberdeen a few years back, and the drilling manager came into the office on a Saturday because there was something going on, he brought his little 10 year old boy in, the little 10 year old boy was blown away by the giant screens and all these wiggly lines. The dad was quite proud saying this is what we’ve done.

The little boy had a go on the mouse and had a drive around the screens and everything. 15 minutes later he turned around to his dad and said, where's the second level.

David Hattrick, Oracle

An epiphany I had a couple of years go, and this is about making the interface to digital oilfield compelling, is there’s this massive and growing disparity between internal IT and the internet.

I call an airline company.

I was working on some bookings. A ridiculous situation where I'm sitting on the internet, I can both the frequent flyer, the 2 systems basically.

The person inside the airline company can only see one system and has to transfer me. That’s point number one.

Someone asked yesterday around the security question - how many people have done internet banking.

This other epiphany occurred to me when I was booking a holiday online. Here I am, crossing airline reservations systems, hotel systems, rent a car systems.

I haven't been trained to use any of those green screens that are sitting behind all that.

I', just dealing with this intuitive interface where I say, I want to get from A to B and I've got that much to spend, I want to stop here and I want to stay there. Bang comes the result.

That comes back to what I said before. What's making all of that happen - is standards, the standards that built the internet?

What's making that happen is an n-tier architectures where the presentation layer is being separated from the logic, from the discrete systems.

There's a lot of very complex IT under the bonnet, but it's irrelevant to the end user.

That to me has got to say something about how the interface, the architecture, how the entire digital oilfield has got to come together.

I'd say it's got to look a lot more like the internet model than it does like the enterprise IT model.

Eric Toogood, Norwegian Petroleum Directorate

We use regularly one airline in Norway, that's an old company, it has lots of associated companies, lots of different databases, and it doesn't work very well.

We have a new cheap budget airline 10 years old, they've got a brilliant system because they've done everything from scratch and it's working very well.

How do we clean up our act in the oil industry?

If you go back to the discussion before lunch about data governance master data management.

I've been to a couple of events when the only people there are people from banking and insurance industries, there's nobody there from oil and gas.

We have to get our act together and go into this to meet our needs, so we can start thinking the same way.

Tony Edwards, StepChange Global

One thing I'd like to comment on, in terms of taking learning from other places, a lot of these things are transactional, highly repeatable.

A lot of the value that we see in operations is about managing upset conditions. Managing events, managing the unusual stuff that doesn't happen all the time.

We should absolutely automate the processes that are automatable, and transfer data and information from one system to another, but the stuff that still needs engineering input..

There are 2 holy grails - how do we get all the data talking to each other, to go from coal bed methane all the way to a ship that arrives in Singapore. That's a holy grail of data management and integration at a huge scale.

The other one - if I pull hard on this well today how does it affect my reservoir recovery on 10 years' time, is the other one.

There's big mega processes, not process workflows, processes, that take a huge amount of engineering input, huge amount of experiential input. Just organising the people in the right way so they understand each other's world, they have this total asset awareness from end to end, makes a huge amount of difference.

We can't get to this holy grail of getting all of this stuff stitched together, but we might be able to get that part stitched together, that part stitched together, the right part in the right room, and get 3 projectors in the right room.

There's almost 2 modules here. The manufacturing, transactional model that comes out of banking, to do this automatable stuff.

The other model we use a lot is the defence model, how do you get people working on very large time scales with very very diverse systems, where you just can't knit it together in the way you want. You have to make it work the way people work. You have to get them to organise themselves to work in a different way. So I think we're often confusing 2 things.

Julian Pickering, Digital Oilfield Solutions (chair)

We've seen that happen in fact in our own house to some extent.

If you compare the role of a refinery or chemical plant operator today, to the same role 10 years ago, it is very very differnet. The automation systems are doing the mundane, handling the bottom tier of information management.

The refinery operator of today is a very skilled person. He's no longer the person walking around with a notebook writing numbers in a book or anything like that. He's actually involved in the strategic operation of the plant. So how to get more out of it, how to make sure safety is paramount. So it is happening. We shouldn't talk as though its not happening in our industry, it is.

The same is true on a lot of offshore platforms as well, we've got far more skilled people now doing those jobs than we used to have, and far less of them than some years ago. So it is happening. Digital oilfield really should accelerate that process.

But there is a word of caution -automation needs to be thought about very clearly. Automation for the sake of automation is a bad thing.

Automation is capable of doing routine tasks very clearly. Those high level tasks, strategic decision making, predicting problems that are actually not happening yet, we call that artistry in a way.

We do have a lot of artistry in drilling, subsurface and so on. It's a polite way of talking about experience really. That sort of thing is quite difficult to automate. Maybe we can in a few years.

Andy Moore, IS subsurface manager, Santos

Management by exception is what you are saying. It's the same scenario as auto picking seismic. You set the algorithm going, it chugs along, when you

get to a fault it says I don't know where to go, up down left right and it stops and asks a question and says hey come and help me.

That’s exactly the kind of thing I’m talking about. We need to automate the mundane, the easy, but we need to stop and engage the skilled professional at the places they need to be engaged, and we'll only get better at that by doing it.

Tracey Dancy, Dancy Dynamics

I did an interesting interview with the exploration manager of an oil company, the whole thing was based on, he said I can look at all the seismic I like but I know it’s there. He said, there’s so much intuition, you can’t automate that. For someone who has been working in that area for a very long time.

John Redfern, Digital Earth

There's studies saying intuition isn't as good as they think it is.

Tracey Dancy, Dancy Dynamics

It depends if you’re male or female of course!

Jess Kozman, Mubadala Petroleum

Is there a role for technology in capturing that kind of knowledge, intuition and experience, whatever you want to call it?

I get the feeling we've done a poor job of doing that.

Tony Edwards, StepChange Global

There was some work being done by MIT a few years ago, basically what they were looking at is the Amazon business model, you buy a book on this and then it suggests more books like that.

What they’ve looked at is, there's a whole bunch of algorithms out there which try to push you towards repeat buys. But those kind of plateau out between 10 and 20 per cent rebuy.

What one company did, it said OK, you bought a pair of black trousers, you don’t want another pair of black trousers, you want a white shirt or a hat or a black pair of shoes.

They went and interviewed buyers from Bloomingdales and said how do you put an Autumn collection together for clothes. How do you go to one manufacturer who manufacturers jackets, one manufacturer who manufacturers trousers, and put a collection together.

They interviewed them and they codified all of this up. They got the rebuy rate up to 17 per cent.

But literally they went in and captured all the knowledge of the senior experts.

They were saying they could potentially do this with rotating equipment engineers.

John Redfern, Digital Earth

I want the system that says - you like that bypassed pay, try these ones over here.

Tony Edwards, StepChange Global

You find the frustrations with Amazon where you get the same suggestions over and over again.

Julian Pickering, Digital Oilfield Solutions (chair)

One thing to think about is, we've moved to this kind of digital age in upstream oil and gas and we're now moaning about information overload.

Automation can make your life far more complicated.

In the Middle East where I'm working at the moment someone thought it was a great idea to put an automated lift (elevator) system in place.

The whole idea was, you have a limited number of lifts, you have to service 44 floors, so by having a clever system you can make sure you are maximising the throughput of people up onto their work floors.

That's great from about 630 to 730, but a pain the rest of the day. You can find yourself wanting to travel from the 40th floor to the 39th floor via the zeroth floor, because the automated system is still streamlining itself for the wrong conditions.

You have to be really careful about that. Just putting automation in for the sake of it isn't going to make our life easier.

Eric Toogood, Norwegian Petroleum Directorate

If someone was there to refine the model then it would improve.

If someone says, I bought this toy for my grandson, I won’t be interested in buying anything like that for a while.

John Redfern, Digital Earth

You need a feedback loop, a button on the elevator which says “wrong.”

Julian Pickering, Digital Oilfield Solutions (chair)

You can get so many 'if' buttons that it becomes unworkable, that’s the only problem. That’s why we need to think first steps. To accelerate digital oilfield adoption you need to pick the low hanging fruit that we know is going to work.

Andy Moore, IS subsurface manager, Santos

Lets' assume automation isn't the answer, so we therefore have to work quicker.

We know the conditions are $10, or let's say $50 oil, it doesn't matter. Conditions are "no budget, not head count increases."

More data volumes, same volume of people. How do we do that more quickly?

Surely you've got to drop stuff; you've got to chuck stuff out.
You've got to focus on exactly what you need to do and ignore the stuff you don't need to do.

There will be a cost associated with that, but that's the cost of doing business.

You're in that 80-20 thing. You'll do 80 per cent of the stuff quickly and get it right, the 20 per cent you get wrong, you'll just have to ignore because you won't be able to afford to deal with it.

So maybe it requires that we change the way we work altogether, perhaps that's what the issue is.

Maybe we need to think differently. The example being the use of medical imaging technology in seismic, that's the kind of shift that we'll have to undertake. So the digital oilfield is a great way to start. But different applications, different ways of using it, is probably required.

Eric Toogood, Norwegian Petroleum Directorate

If you look at the medical industry, probably what happens in hospitals is, the people, the surgeons who have a problem to solve, ie find where the tumour is, they will be working with the IT people to solve a problem.

So you have a multidisciplinary team to tackle the problem. There's probably where we need to go in the oil industry as well. So you have the IT, the technies, next to the people who are actually doing the processes. And then finding out what's a better way of actually doing this.

Ugur Algan, Volantice

OK I think we have to crawl or possibly walk before we consider flying at all.

This morning the first presentation was about how to move the same data from the beginning of the chain to the end of the chain, I have to jump through 15 hoops. That is still the problem we need to solve before we contemplate more automation. If you can't increase the number of people, you can't increase the number of hours, the only way you can do the same work is through automation.

But what can we automate? How can we automate? We have to have goals. We have to say, OK, if you see the problem like this, I know how to solve it. Move it from the realm of unsolved problems to the realm of solved problems.

But if you have a problem like this, 'everything', that's where we go wrong. The decision makers get good consultants whispering in their ears about how we can automate everything. No we can't. We can't automate everything.

John Redfern, Digital Earth

At the same time if you're just doing very modest incremental things - some way there's no way of doing that to the actual big transformation change. You may be getting some little element of it more efficient, but you may want to change completely.

Eric Toogood, Norwegian Petroleum Directorate

Initially we started with this $10 a barrel scenario. But there's surely a much more compelling case, the fact that you want to get your oil onstream quicker because you have a high oil price, you want to get it to market as quickly as possible.

You want to make sure you're not drilling your well in the wrong area.

That represents a really enormous amount of money if you do it incorrectly.

Tony Edwards, StepChange Global

We have been working with some projects teams in Norway on exactly this point. We can demonstrate that we can do projects faster, we can deliver them with less capex, with significant less opex.

Back to your point - what's in it for me? The project director, the personal risk of him doing it the new way compared to the old way where he's going to make good money, he’s just doing it the old way. Regardless of the fact that there’s $500m CAPEX saving.

Andy Moore, IS subsurface manager, Santos

Just pick on the point that Eric made, 2 minutes ago you were talking about interdisciplinary teams, effectively.

If we get back to this idea of someone focussing on 80 per cent of the data and ignoring the other 20 per cent because they haven’t got time or money to do it.

Surely if we get everybody talking together, you’ll be able to fast track through the minds of many, down to the issues.

Perhaps the one thing we can do is get more people looking at the problem in different ways to actually separate the wheat from the chaff very much more quickly and easily than working in silos. Perhaps that’s the right way forward.

Tony Edwards, StepChange Global

I totally agree. That's what we learned when we did this in Trinidad. Exactly that. You get the right people sitting next to each other and connect them to the right people in the field. You get a huge amount of learning.

John Redfern, Digital Earth

It gets done quicker too because geologists don’t want to make a career out of data management.

Eric Toogood, Norwegian Petroleum Directorate

That's how the Japanese had such a success with their car industry.

They copied techniques developed in the US but were never implemented there They started talking to the guys on the shop floor who were screwing the things together, how can we improve that. They all had a stake in the solution.

Tony Edwards, StepChange Global

I think the other thing is the lessons learned from that point. There are a couple of companies with respect to digital oilfield who take this view. They say this is about who we are, it’s what we do, the way we work. You can copy our technology, you can take our processes, but you can't replicate it because you’re not us.

And you shouldn't replicate it, you should do what’s good for you.

Those companies are the ones we see doing the best in that space.

Those who turn around and say, my process is my process it’s about my bespoke technology, are the ones who seem to be doing less well.

Eric Toogood, Norwegian Petroleum Directorate

We had a discussion about Jimmy Choo shoes. The basic thing is we are human beings and we behave culturally.

One of the reasons we do things reasonably well in Norway is that we are a small company we are really laid back. We don't work in hierarchies.

That's always the problem in big organisations, it’s getting the message across because there are so many people.

David Hattrick, Oracle

You've got to make it whole lot of small organisations.

That was one of the phenomenal models I think of the HP way, whenever a division got bigger than 1000 people, Dave and Bill used to spin it out.

But actually I think there’s 3 ways if we’re talking IT practises.

There's the old way, the new way and no way

What I mean by this is: In many ways, IT is a cottage industry - and it’s sort of ridiculous, that enterprise by enterprise has reinvented the wheel.

Now the industry has done very nicely out of this. But now Cloud has come along - it looks a lot to me like Bureau from the 1970s but back to the future:

I really question why a lot of things are really done in house any more.

This really activity vs productivity.

If you've got these scarce resources and you need to be attaching these resources to geophysicists and engineers.

What are they doing running email systems, what are they doing keeping the ERP lights on. All this stuff just needs to go out to the cloud!

The way I put it: there is the oldest profession in history, my prediction is the shortest profession in history is going to be the internal IT guy.

Not the internal IM guy, the internal IT guy.

The guy that's doing low level, manual tasks to keep systems up, that really just - if they've got to stick around, move them out, quarantine them, and bring in new systems.

John Redfern, Digital Earth

That’s not only better for the company, it’s better for the guy doing it - he's got a career path, rather than sitting there in a dead end.

Julian Pickering, Digital Oilfield Solutions (chair)

I have a personal theory that says that the busiest people have the most time, generally because they are the best organised.

One of the problems in our industry is we talk very glibly about saving time, its quicker to do this and all the rest of it, but it’s kind of talking in the third party, we’re not talking about ourselves. It’s going to save someone else some time, or these people are going to be quicker. What about us, how efficient are we.

Again this is a people issue.

How many people here would be willing to stand up to their boss and say I’ve done everything i think I came in to do, it’s 2 o'clock I think I’ll go home, is that OK?

No, because we created this smokescreen of how busy we are. We say “I'm up to here, I can't, I’ve got no time I’ll stay in the office until 8 o’clock because I might be noticed by someone else and that will get me up the ladder” We're not actually ourselves working efficiently. We need to change the culture of the organisation where we work efficiently

John Redfern, Digital Earth

We spend half our life in school talking about how we're not really studying but we're really secretly burning the midnight oil. And then we start working, and we're not working as hard but we’re always bragging about how hard we're working.

Julian Pickering, Digital Oilfield Solutions (chair)

People are impressed, or people think they are impressed because someone is snowed under, and that doesn't necessarily equate to efficient working at all. Theirs is something about looking at the way we work.

John Redfern, Digital Earth

In fact, my very first job in an oil company – the only 2 bits of advice my boss gave me after the first month, he said:

One, put some money in your lunch budget, because I've been lunching a guy every day, every month, for the last 10 years and if you can do your job without doing it they're going to be asking what I was doing.

Two, Put some files on your desk - it's too clean - they'll assume you're not doing any work," you've got to pay that came.

John Redfern, Digital Earth

People say "it will save time," I find that's culturally specific too. When I first came to China, I spent the first year trying to sell software to the electronics industry. We had all these American use cases that say, 'you'll save so many man hours per month' and they don't care.

Also the cost difference, because the guy said, OK, it will save a few man hours. For the price of this software I can hire a full time engineer and he makes my coffee.

Tony Edwards, StepChange Global

Certainly when we look at digital oilfield business cases, it is hardly worth calculating the cost savings.

John Redfern, Digital Earth

It's nice to say, you're doing it for 1 reason, but as well it pays for itself.

Tony Edwards, StepChange Global

We tend to flip it the other way around I would say. But it rarely flies on cost. It flies on time - but usually its time saved on a rig - or drill time.

Julian Pickering, Digital Oilfield Solutions (chair)

Let's do a quick stop check on where we are. Fundamentally we're talking about getting DOF technology implemented quicker. It would be nice at the end of this period to actually have some output that quantifies that. So just going around the table on how you perceive this discussion so far.

What would you say from what you've discussed so far was the most pertinent thing to getting technology out of the door more quickly?

Samit Sengupta, Geologix

Well I thought what came up was, it's an implementation issue. Its changing peoples' mindset, it is not so much to do with the technology. There may be barriers associated with the process, but people and changing their mindset is probably the biggest barrier.

And to me, rather, the other bit that came out, which was very significant I thought, was the fact that if we don't pay enough. Changing mindset, it needs some kind of empathy about the people.

We are too - dictatorial in our industry. Perhaps its HR policies and so on. Changes to that might enable a change of mindset.

Eric Toogood, Norwegian Petroleum Directorate

Yes one of the conclusions we should draw from the discussion, this is an organisation issue really. You need somebody looking with a bird's eye perspective.

Other people are doing their best, they come in the office early and stay late, think they are doing a good job, but there's a sort of disconnect with the value chain.

The guys who are counting the beans at the end of the chain need to come back and see if things can be done more efficiently.

You need HR people in to say OK, perhaps we need to adopt a new way of working, and how would you implement that.

Tony Edwards, StepChange Global

I'd fully agree, absolutely this is about people and organisation change. The process change can be done relatively easy, the technology can be implemented and so on. That's not really the issue.

The defence industry has this idea of capability delivery, which is technology plus process change associated with it, plus people change, roles change, organisational change. They say as far to say you cannot do it without organisational change.

The other thing they say which is quite interesting, I wrote a paper with a guy called mike popper from BAE systems a couple of years back on this: He says if you want a new capability - you have to change the way you buy it - if you go through the route of standard procurement processes to get something new, you will get the old thing. That is a significant barrier to uptake. We are coming across this. Front end design, detailed design with the same contractors with the same practises and same mentality, you get the same outcome.

They have a view what they call digital battlefield and network enabled capability where they say - phase 1 was technology process enabled, and phase 2 was all about organisational change and governance, that means supply chain management and contractural change.

John Redfern, Digital Earth

It is all about getting people to change. But what I find is, individuals change pretty easily - what doesn't change is organisations or societies. The bigger the unit the slower the change. The more hierarchical the slower the change.

And part of the reasons the industry is the way it is, is because there's a lot of big NOCs, a lot of big companies they are asset focussed, the don't bubble up from the ground.

I think one of the things that can enable change a lot - is to have an industry which is more dynamic, has more independent profit centres, that's more fragmented.

Such as you get in a place like Canada, in a 4 block by 10 block radius you've got a thousand different oil companies, they slowly grow up, they get hived off, acquired.

And about 8,000 service companies.
When you have that amount of fragmentation, people aren't sitting there with a big cushion underneath them - they are scraping every penny, they are starting new companies from scratch.

One of the ways change can happen is if the monoliths are broken up, as the industry matures, people are given more ways of this Arab Spring.

Tony Edwards, StepChange Global

Scale is definitely a disadvantage in this game. You see someone like Santos who started digital oilfield 6 years behind the big boys - they can potentially finish 6-10 years ahead of the big boys.

Also the hierarchy thing, getting to talk to David Knox in Santos is relatively easy compared to getting to talk to the CEO of Exxon, Shell or BP.

Eric Toogood, Norwegian Petroleum Directorate

If you add on to that discussion, if you want to make the playing field attractive for the small guys: that means you have to [say] if the big guys aren't developing the small deposits, those have to be relinquished.

John Redfern, Digital Earth

This all started back in the early 70s, all the big oil companies were sitting on 30 year leases, we said drill or release it,

Open data also very important, standards, and all these things add to fragmentation.

Eric Toogood, Norwegian Petroleum Directorate

Just to finish off. One of the things the NPD has been doing has been to make sure we have enough data to make all these kinds of decisions.

Jess Kozman, Mubadala Petroleum

I think, what I've got out of this, I'm usually a big metrics guy - I want to be part of the quantitative business case.

What I've heard is to get this moving faster, we need to do more thinking about the end users, their feelings, their egos, their 'what's in it for me,' the qualitative part of that business case, to get the end users motivated.

We've got to continuously realise that we are an enabling service (whether we are in IT or IT management), for the guys that are finding oil and getting it out of the ground.

David Hattrick, Oracle

To be consistent with some of the examples I've used, stand back and look at what's been the biggest phenomena in the world in the last 30 years, it's the internet. How did that happen as quickly as it did?
Apply everything about the internet. The bottom up, open standards, empowerment of the end user, intuitive use thereof, collaboration capabilities, all of the things, and just apply that model to digital oilfield.

Ugur Algan, Volantice

This will sound a bit boring, but I think if you want get digital oilfield faster, you have to be first be able to provide reliable access to reliable data consistently.

I have a slight experience. I sit in places where I had 25 engineers, young guys, they are in charge of hundreds of wells and they are supposed to make intervention decisions. They sit around a table and they show PowerPoint to each other.

Where is the data? It is in about 16 different systems. How do I get it? Not very easily. These basic things have not been solved- until we solve these things, I don't think we can [move forward]

Julian Pickering, Digital Oilfield Solutions (chair)

Well before we all disappear of - I'll ask the question again, because in fact we've articulated the problems, and we haven't articulated the solutions.

If I was your boss you wouldn't get a tremendously good value proposition out of what you've just done. I'm not surprised, because that's we tend to, we tend to come back by saying what the problems are.

We've got changing mind-sets, not enough empathy, not enough capability People changes and so on

Let's go down the table and say "what are you going to do about it."

The purpose of what we're talking about today is how we are going to get tools implemented faster. How are we going to get these tools implemented faster?

Ugur Algan, Volantice

Set realistic goals, and deliver on them.

David Hattrick, Oracle

I guess I'll keep going on the vision and how to get there.

Julian Pickering, Digital Oilfield Solutions (chair)

Hang on, that's too vague

John Redfern, Digital Earth

Oracle's going to buy a really trendy company that does this.

Julian Pickering, Digital Oilfield Solutions (chair)

I'm going to buy you a beer, it could be anything from a thimble to 2 pints. How would you go about that? What are you going to do to deliver this vision?

David Hattrick, Oracle

Well that's my job, is working with oil and gas companies to help them get there. I do this every day of my life.

Julian Pickering, Digital Oilfield Solutions (chair)

A vision could be great, a vision could be, by 2015 we'll have digital oilfield everywhere. Great. So what. There's got to be a delivery mechanism. What's the delivery mechanism?

David Hattrick, Oracle

The delivery mechanism is the company I worked for. As you heard yesterday, we're working on solutions to solve the very complex data management problems, we're working on solutions to solve data quality problems.

I'm out there selling practical solutions that to be honest with you are quite ahead of the market. Because of all of the issues we've put on the table today, the disciplines, lack of empowerment in IT to solve these problems.

That's my job, is to take solutions to the industry for DOF. And that's how I do it, is by promoting these solutions to add value.

They are all in sync and they are all addressing these fundamental issues, basic issues that need to be solved.

Julian Pickering, Digital Oilfield Solutions (chair)

Your answer then really, your solution to how to get technology out there faster, is for customers to buy your technology more quickly.

David Hattrick, Oracle

No I am not saying that.

Julian Pickering, Digital Oilfield Solutions (chair)

I'm not trying to be obstructive with you, what I'm saying is that, probably the answer is yes, you're building products and the key thing is you need customers to be engaged more effectively. I'm looking for a solution, that's what I'm saying.

David Hattrick, Oracle

Yes, I won't be put in a position where i'm exploiting the situation, because the reality is, we develop these solutions on open standards.

That's one of the fundamental things the industry needs to grasp. You need to collectively endorse and work to standards, like Energistics, like PPDM, embrace SOA etc. etc.

We're not unique, there's a 2 edge sword to promoting open systems.

Jess Kozman, Mubadala Petroleum

I'm going to go back to my office in Singapore, I'm going to find the youngest guy on my geotechnical team and ask him what he hates about the most about the interfaces that he's' working on today. And I'm going to find a way to get around those barriers.

Tracey Dancy, Dancy Dynamics

I take umbrage with what Julian said that all you've done is sit there and point out the issues again and not come up with any solutions.

There may be people who don't think there's anything wrong.

But if you spoke to them as individuals and said 'what would you personally like to do better.' [You might get a different answer]/

As people we work in siloes - it's not just about data in siloes - people are in siloes.

Until people say, "I haven't shared it because I don't want to be the person who's complaining about the way things are dong in this organisation. It's because we don't' ask them.

If we are open about asking them and being prepared to listen to their response, I think actually there are some solutions there.

John Redfern, Digital Earth

Sorry we're always beating up you (Oracle) but Halliburton and Schlumberger aren't here.

I'm not at Oracle so I can't offer a complete comprehensive solution.

I'm not in a silo, I flip from silo to silo.

Some of the products we're looking at, some of the startups we're starting, are based on precisely the stuff we are talking about.

We have a mobile platform we're launching, again it's in Calgary, because there's lots of fragmentation and people looking for solutions, it is all cellphone based - physical asset management.

It is all designed so it is easy to use as a social network. You either scan the QR code on the asset, you find it on look on the map.

I'm trying to find something that's easy to adopt, low cost.
And away you go.

I'm doing my own little bit to try to find some way of doing it.

Tony Edwards, StepChange Global

I would say, a Norwegian friend of mine says very regularly "steer with pride."

I actually think some of this has been looked at already in other sectors, particularly defence sector and manufacturing sectors.

We've got to take, not take one model,

We can selectively take from differnet models.

There are people who've done much of this already.

We advise clients in this space

We think this is so broad, and so big; it's about how you run your business. No one company can do that, the only company that can do that is the company themselves, it's the oil company.

Eric Toogood, Norwegian Petroleum Directorate

We want a more efficient way to handle seismic field data.

We've gone about this by discussing the issue in the oil industry.

We have to see if there's' a proof of concept there, be prepared to tread on some toes. If it doesn't work we'll say we have to look at this again.

We can always legislate - but we won't legislate unless we feel that's a sensible thing to do, because that's the wrong way.

The other example is the implementation of production reporting using the PRODML variant. We've just taken a stepwise approach, we realise this is a complicated issue, we're not going to fix the world once, we're working with

Statoil on one particular field, doing this one step at a time. When this works we can go out and really show this in the other producing field.

Samit Sengupta, Geologix

The question is what am I going to do about it.

The answer is what I've already done about it: firstly to create a software product which was compliant with the digital oilfield before the digital oilfield was invented.

Then say we need the DOF standards - being the first client application to adopt this sort of standard back in 2002.

And then realise the standard is not getting deployed, so start training on standards. So that's kind of our small contribution.

Julian Pickering, Digital Oilfield Solutions (chair)

OK that's great. I believe you've come up with some solutions.

Just to read those back:

Setting realistic goals and delivering on them

- Embracing open standards, which came out in more than one way, via training and so on
- Understanding what motivates young people and thinking about how DOF can learn from that. And things are very different there. My daughter when she does her homework, has got Facebook up above her desk. If she can't do question 4 then the changes are, one of her collaborative colleagues can.
- When I did my homework it was in isolation.
- Sharing experiences – I think that's' a cultural issue - and also incentivising people to share experiences is a key thing. We all tend to hang on to the information that we think keeps us special. That's a real challenge in collaborative working.
- Physical asset management using mobile technology was a nice example.
- Steer with pride - is a rather engaging statement
- Learning from other sectors - recognising probably a lot of what we are challenged with may have been addressed already in other industries and to learn from that.
- Recognising that the oil companies are business integrators - they are fundamentally the ultimate client to all of us
- More efficient way of handling seismic field data, and that's been done through proof of concept and recognising that legislative approach is not necessarily the best way
- The petroleum directorate is doing production reports using open standards, PRODML was mentioned

- And finally but not by any means least, creating software products which actually promote DOF and make people’s lives easier

That's the output from the last hour and a half. Thank you for your time - i hope you found it an interesting discussion. I wish you are save onward journeys