



# Make a difference to your company

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Good morning and thank you all for coming. It is such a fantastic feeling being here today and facing you, the future of our oil and gas industry.

When the Society of Petroleum Engineers asked if I would speak to the Next Wave here at OTC, I was tremendously honoured – and not a little bit daunted.

I've been a member of SPE for my entire career and have attended OTC many times. I've been in the seats where you are, listening to the speakers up here – many of them some of the biggest and most influential names in our industry.

So being asked to speak at OTC? Well, for me, an engineering professional who has loved her career in this fantastic industry, that was like a novice singer being asked to open for Beyonce!

It's been really difficult to decide what to speak about, but ultimately that gets determined by your audience. Who are they and what are they expecting to hear from you?

The "Next Wave" means you are mostly early in your professional careers or at school. So I think I have a pretty good idea of what you would like to hear. And why is that? Because I've been hearing from you for some time.

But before I get to that, the first thing I want to tell you is "congratulations."

In choosing an energy career, you have chosen well.

It's no secret the US and world economies have been sluggish since 2008, and while growth has been returning gradually, the process has been slow and uneven.

There's a big exception to that, however, and that's the energy industry. That is especially true here in the US, which has been experiencing a remarkable energy renaissance.

Thanks to shale oil and the deepwater, US oil production last year reached its highest level in a quarter of a century. This country now accounts for 10 percent of global crude oil production.

And that's good for people who want to work in our industry. The US Census Bureau reported in March that oil and gas was the fastest-growing sector of the US economy.

BP is a big part of that story, by the way. At nearly \$50 billion over the last five years, we are America's largest energy investor. We employ 20,000 people directly, and around 240,000 other US jobs are tied to our business activities.

We've made three major discoveries in the Gulf of Mexico in the last decade, and we have more rigs – 11 – operating there than ever before.



You also have demographics in your favor.

Across the energy industry, BP and its competitors are contending with what many are calling “the great crew change.”

The Baby Boomers hired in the 1970s and early 1980s are retiring. At BP, nearly a quarter of our roughly 2,500 leadership-level employees worldwide are age 55 or older.

Add in those aged 41 or older, and the number climbs to nearly 90 percent of the total.

I don't have the numbers for our peers in the industry, but, rest assured, I believe they look very similar.

So across the sector, we are looking to raise up a new generation of leaders. Your timing couldn't be better.

And the question on most of your minds is, “How do I get to be one of those leaders?”

I know that's the question on your minds because many of you have been asking me.

Perhaps it's because I like to believe am still – relatively – young. (Although my third-grader doubtless considers me impossibly old.) Maybe it's because I have made my way as a woman in an industry with a masculine reputation. But for whatever reason, young people tend to seek me out and ask how they can be successful in the energy industry.

And before I can formulate an answer, that question is usually followed up by more questions:

“What courses should I take?”

“What areas should I focus on?”

“Should I specialize, or should I try for the management track?”

Now I admire people who want to be successful. Ambition is the fuel of success. As that great philosopher Jay Leno once observed, “Ambition beats genius 99 percent of the time.”

But those well-meaning questions got me thinking about the whole notion of “success.” Before you set the course of your life, you ought to take some time and define what it is you are trying to achieve.

What does success mean to you?

Does it mean making a lot of money?

There's certainly nothing wrong with making money. The industry can afford us a very good lifestyle. But then I believe some people are so poor that the only thing they have is money.

That was brought home to me by a newspaper story I read only a few months ago. It was about a New York City man who lived a hermit-like existence in a residential hotel that was about to be torn down. The developers wanted to buy him out so they could demolish the hotel to make way for an apartment building.



But this fellow turned out to be not your everyday hermit. Not only was he a medical doctor, but he had a PhD. in physics from Cornell University. His father had been wealthy, and when he died, he left his brilliant son enough money that he didn't have to work for the rest of his life.

So he didn't. Giving up an extraordinarily bright career, he moved into that tiny hotel room, and rarely left.

For the next three decades.

And even though he stated freely that he didn't need the money, the hermit wanted more. Eventually, he settled with the developers for a reported \$17 million. He then moved to another hotel nearby, where he lived in seclusion until his death in 2011. In his will, he left most of his money to his brother.

That guy had plenty of money, but I don't think any of us would call him a "success." With his education and his resources, he could have done incredible things for the world – perhaps even have won a Nobel Prize.

But for whatever reason, he abandoned any effort at becoming a success. In the end, all he had was money.

So limiting your horizons to simply making money may be a big mistake. You need something else to get you out of bed every morning.

In the energy field, no less than anywhere else, I think the key to success, in whatever form you seek it, is to set your ambition on how to make a difference.

I look for inspiration to the people who did things no one else had done before.

People like the late Marvin Mangus, who worked for ARCO, one of BP's heritage companies. His determination and perseverance through many harsh seasons led to the discovery of Prudhoe Bay on the North Slope of Alaska –the largest oil field in North America.

Or Conrad Schlumberger, who came up with the idea of electrical well-logging – which remains integral to how all of us operate today.

And then there's a man we lost just last December and far too soon – Michael Economides.

I didn't know him well. But you couldn't help but marvel at his dizzying array of energy knowledge and the sheer breadth of his career as an engineer and an academic. As a petroleum engineer, he pioneered hydraulic fracturing techniques that are considered standard procedure today.

The list could go on and on. Those are the people who made a difference in our business. They invented the tools and the techniques that benefitted not only their colleagues and the companies they worked for – but the entire sector and the world.

That's what they are remembered for. Not what courses they took or what jobs they had. And the next generation of Conrad Schlumbergers, Michael Economideses and Marvin Magnuses are in this room today. And you are one of them.



If you walk in the door every day saying, “How will I make a difference to my company? How will I make a difference to the industry?” You will succeed by default. It will differentiate you. Your company will notice it. And you will be rewarded for it.

So today, I want to speak with you about how you can set about making a difference.

I’ll cite some of my personal experiences and observations, not as a matter of ego, but simply because they are my experiences and observations. But I also think that my 16 years in the industry has given me some experience from learning from my personal heroes about the making of industry leaders. So I hope you’ll find what I have to say to be of some value.

The first thing I would urge you to do is choose your employer with care.

That might seem a bit odd. After all, doesn’t the employer choose you? Well, yes – but you have to decide where you wish to apply.

I knew early on that I wanted to be in the energy industry. In part, because my father worked in the energy industry and it seemed fascinating and useful at the same time. Besides, being from Aberdeen, the alternative was fishing!

So I attended the University of Aberdeen and graduated with an engineering degree. I then went to work for several energy service companies. It was interesting work and I enjoyed it. But I was focusing on technology and thought that I had more to offer a larger company.

Having my daughter gave me the opportunity to step back and take a look at what I was doing and where I wanted to do it. So I left my job and took a year off.

I was sought out by a major energy company, which made me an extremely attractive proposal. Not only were they offering me more money and more responsibility than in my previous job, they even offered me a guaranteed child care place for my daughter.

And I said “no.”

Not because it isn’t a fine company. It is. And not because the offer was inadequate. It wasn’t. But I had already decided the place I wanted to work. And that place was BP.

During my time in the service industry, I had the opportunity to work with virtually all of the major energy companies. I saw up close and personal how they all operated and how they treated their people. And when it came to BP, I liked what I saw.

BP views technology not simply as an “add-on” or a “nice to have,” but as an essential component of its strategy. It is a key to enhancing safe and reliable operations, as well as differentiating itself from our peer companies. For someone like me, who has been fascinated by technology from an early age, this was a major attraction.

But the most sophisticated technology does nothing but process, manipulate and distribute information and goods. It can’t produce knowledge. Knowledge has to be gained the old-fashioned way: human brainpower. And that was another attraction.

BP didn’t seem to make any distinctions between how it dealt with its contractors, its consultants and its own employees. Everyone seemed to be on the same team – working together to achieve the best result. I hadn’t seen that everywhere I worked or looked.



So I wanted BP. The issue was, did BP want me?

When I turned down the first offer, I didn't have an offer from BP. So I was taking a chance.

Basically, I just cold-called BP and told them of my interest. Fortunately, the feeling was mutual. I took the job, even though the one BP offered me didn't pay as well as the one I had turned down.

I tell this story to illustrate the importance of knowing what you want and not allowing a seemingly glittering prize to deter you from going after it. Sometimes, opportunity falls into our laps. But when it does, we might not recognize it as such. In my experience, you usually need to make the opportunity happen. I know many people I mentor who have chosen another path, and are struggling.

But once you have the opportunity, you need to do something with it. You need to make a difference.

In my case, that involved co-creating a new tool – a very small tool actually, but one that significantly improved the operation of BP's Clair Field in the North Sea.

The issue was wells weren't coming on line fast enough.. And we were over budget.

I was working on the completions side at the time. The organization was focusing on ways we could drill more efficiently. But some of my colleagues and I thought we could achieve the same result by increasing production from the same number of wells.

So I put together a little project identifying 10 different technologies that I thought might help address the productivity issue. One of those was clearing the well of mud and other obstructions more efficiently. We knew from well-logging that this was an issue.

There were lots of different ways we could have done that, but they all involved using more manpower or taking up more space on the platform. Both, of course, are at a premium, especially offshore. So those approaches weren't ideal.

Automation was the obvious way to go. So I approached a number of the service companies for ideas, but few were interested. Many of them saw it as a niche issue. The ones that were interested thought it might take as long as three years to develop a solution.

But there were some small technology companies that were eager for the challenge. Working with some really incredible design engineers, we came up with a tool that might just do the trick.

I was leading the project, but I want to emphasize that it was very much a team effort.

The Reliability team had to be involved to ensure that it worked the first time. When a new piece of technology fails the first time, you rarely get a second chance.

The new tool also had a complex start-up procedure, so we needed the buy-in of the offshore teams. It took a lot to convincing to get them to put something else down the hole – especially when the drilling wasn't going very well to begin with.

But it worked, I'm glad to say. The team saw a big improvement in well productivity almost immediately. And best of all, the entire project went from concept to field test in just nine months.

So BP's openness to technology and its team spirit came together to achieve a very positive result.



For me, the takeaway from that experience wasn't only the new technology, impressive as it is. Instead, it's the relationships that we formed. I made friends with people that I am confident will be friends for life. I lean on them to help me do my job today. And for me, that is a sign of a significant success. Together, we made a difference.

But enough about me. Let's talk about you.

I'm incredibly optimistic about all of you – the next generation I see coming into the business. Unlike me and my peers, you were raised in the digital age. Computers and electronics are an everyday part of your lives and always have been. You think differently than we do because you are wired differently.

Not long ago, I had to do a conference with a number of my colleagues in various places around the world. We started by setting up a videoconference, which would involve booking video-equipped conference rooms around the world, with all the technical support and expense that entails.

Then someone suggested we simply do the conference using the Lync video software on our laptops while sitting at our desks. We did, at no cost and with no support needed. I'm sure that for most of you, that would have seemed the logical thing to do from the start!

So don't fall into the trap of thinking all the problems have been solved and all the challenges have been overcome. Not by a long shot.

I'm responsible for reporting on some of our top wells that we currently drill to our executive, which together will probably produce between hundreds of millions in revenue. Every week, I have to get in touch with 16 different people, in different parts of the world, and gather that information. I then have to assemble it into an email for reporting.

Now there's got to be an easier, quicker way of doing that. I am sure that my third grader could probably figure it out. After all, I have an app on my mobile that can tell me if my Saturday morning yoga class has been cancelled or rescheduled.

It's a small challenge, I admit, but it's one I wouldn't mind some of you taking on.

And meeting the small challenges is essential for meeting the big ones.

BP estimates that world energy demand is likely to grow as much as 41 percent over the next 20 years. That's the equivalent of adding another US and another China to current requirements.

But in order to meet that growing demand, a strong energy sector backed by cutting edge technology is vital. These technological advances will not only increase production, but also help make our industry safer and stronger. It will also help us better manage the environmental and social impacts of our operations and projects.

Your generation has the potential to bring these technologies on board.

And that's something that's fantastic to be a part of.

I started this talk reflecting on the definition of success.

Success means helping your company and helping your colleagues succeed.



When you stand on an offshore platform, looking out at the setting sun, with a crew of great people around you, knowing you've all done a great day's work that no one else could have done or had done before – that's what success means.

At least to me.

So how many of you sitting out there are doing the equivalent of thinking about moving from wooden rigs to steel ones? From onshore exploration to offshore? Or moving from fixed offshore platforms to jack-up rigs to semi-submersibles?

I'm sure that at least some of you are. And you are the ones who will make the difference. Think about how you can make a difference every day.

Thank you very much.