The Spirit of Innovation

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Harry Brekelmans became Projects & Technology Director and a member of the Executive Committee of Royal Dutch Shell plc on October 1, 2014.

He joined Shell after graduating in 1990 with a degree in Petroleum Engineering from Delft Technical University in the Netherlands. He began his career in the research and development department of Shell’s Exploration & Production (E&P) business in the Netherlands, followed by a variety of assignments in Egypt and the UK.

Harry was appointed Internal Audit Manager for Shell E&P Europe in 2003. In 2005, he became Global Audit Manager for both the E&P and Gas & Power businesses. From 2007, he was Chief Executive Officer of Salym Petroleum Development, a Shell joint venture in Russia. In September 2009, he became Executive Vice President (EVP) for Shell Group Strategy & Planning. In mid-2011, he returned to Russia as Country Chairman and EVP for Russia and the Caspian region. He moved back to his native city, The Hague, the Netherlands, in early 2013 to take up a new role as EVP for Upstream International Operated.

Harry is a member of the executive committee of the World Business Council for Sustainable Development and a board member of the Global Leadership and Technology Exchange. Both organisations seek to connect business, government and civil society in seeking more efficient, low-carbon growth.

Harry is married to Petra and they have two children. The family enjoy travelling and sports, especially tennis and running.
What is it that turns a flash of ingenuity into a lasting legacy? Harry Brekelmans on the collaborative spirit behind 50 years of innovation in the Gulf of Mexico – from the first “semi”, to Shell’s school for industry, to stunning feats in seismic technology.

Ladies and gentlemen,

It is a pleasure to be here to mark the 50th anniversary of such an influential conference. Indeed, 50 years of OTC marks 50 years of mighty innovation. Just think of all the industry-changing concepts articulated in the more than 12,000 papers presented here since 1969. The OTC has created a space in which the offshore industry comes together to share, to learn, to innovate.

And innovation comes in many forms. It could be smarter systems, faster deployment or increased safety. It could be a problem solved in one part of the world that becomes a solution for the whole industry. At every step, the offshore industry is driven by innovation.

But what is it that makes lasting innovation? What is the spirit that turns a flash of ingenuity into an enduring legacy? It is collaboration. This is how we ensure commercial value. This is how we create a legacy to build upon. A legacy that started with the first deep-water endeavours, continues with projects that harness the latest technology, and finishes with safe decommissioning at the end of a field’s productive life.

The past: Blue Water 1

When I think of Shell’s early offshore days, I think of an unlikely contraption. I think of Blue Water 1 – the first semi-submersible drilling rig.

It was a Shell innovation that made history in deep-water exploration. One that was top secret. One that, according to legend, had our rivals circling in boats and overhead in helicopters to understand how we did it – how we had managed to make something so top-heavy and spindly remain so stable.

The year was 1962 and the location was the Gulf of Mexico. The challenge was how to go out further and drill deeper wells. Step forward Bruce Collipp, one of many Shell visionaries pushing boundaries at the time. The rig he devised launched a new era in offshore technology. Bruce worked for Shell for 33 years and won OTC’s prestigious individual achievement award in 2002.

But every daring innovation has its challenges. Blue Water 1 allowed Shell to bid for deep-water leases, but the Government would not award the leases if there were no bids from anyone else. The development of those resources needed competition. Yet no one else could operate at such depths.

We had pushed the boundaries of the possible, but to turn that innovation into something lasting, to succeed, we had to share our innovation and increase competition. We had to work together. In 1963, we ran a three-week “school” for industry here, in Houston, and shared what we had learnt in our secret projects. It covered everything from the dynamic positioning and remote operating vehicles developed on the West Coast, to subsea wellheads and the revolutionary “semi” here in the Gulf.

And once the rest of the industry had that technological base to work from, once those innovations had been adopted, we could go further and deeper together.

Of course, innovation always faces doubters. And deep water is no different. Resources are dismissed as unfindable – and then, unreachable. Until, together, we find the resources, we reach them, we make the plans work.

Fifty years ago, we did not have the technology to see what might lie under our very noses. Subsea basins do not give up their geological secrets easily.

But neither Bruce Collipp, nor his colleagues, nor the industry ever gave up. They kept working together. That is the deep-water way.

The present: the Mars field

To see this in practice, let me take you to a more recent time: 1989. The year we discovered the Mars field. “The Mars field became a tremendous testing ground. One in which we could advance our ability to see through and around salt deposits”
Even though it was the largest discovery in the Gulf for 25 years, the basin was obscured by salt structures — frustrating exploration and hampering development. But over time, our vision would gain clarity and detail thanks to rapid development and innovation in seismic technology.

The Mars field became a tremendous testing ground. One in which we could advance our ability to see through and around salt. From the early phases, when amplitude “bright spots” played such a key role in identifying potential reservoirs, to the latest developments that render 4D views — three spatial dimensions, one temporal one.

At each stage in this journey, we developed better ways of acquiring and processing data. At each stage, we refined our drilling and field-development plans. At each stage, we extended the resources of the Mars basin.

And none of these advancements, nor the development of the original Mars field would have been realised without partnership, without working closely with our suppliers, without collaboration.

Together with our partner BP, and our key suppliers then — Sonat (now Transocean), H&P, McDermott, Belleli, Aker Gulf Marine and Heerema — we started producing from the Mars platform in 1996.

And what kind of rig did we use to drill some of those first development wells? A semi-submersible, of course.

With Mars, it is not just the shape of Blue Water 1 that lives on, but its spirit too. As we innovate, we learn from others. We adapt new ways of working. We adopt new technologies. And it is this spirit — this drive — that propels the industry forward.

The teams who worked on Mars, refer to it as a career-defining field — a lifetime’s work.

When Robert Patterson, our head of engineering, retired last month, I looked around the room during his send-off and saw more than a thousand years of deep-water experience. A large part of that experience was devoted to developing the Mars basin.

In 2014, Olympus, a second platform, extended the productive life of the basin to 2050 and beyond.

This re-development — Mars B, as we call it — spurred further collaboration both within our own business, and outside it.

Our key suppliers for this second round of development included TechnipFMC, Kiewit, SBM, Samsung Heavy Industries and Oceaneering.

It was a huge move for us, working in deep water under very difficult conditions, and it allowed us to overcome many challenges.

The developments, the teamwork and the spectacular ingenuity I have described have got us this far, but what lies ahead?

It is fair to say that the industry is moving away from big, bespoke projects and towards a future that is all about detail. A future that is about being more scrupulous with the scoping and execution of projects. But a future that will still require innovation and collaboration.

Just consider the Vito project.

The future: Vito

Last week, we announced our financial investment decision to proceed with Vito.

It is a potential new production hub in the Gulf, and I can tell you that Eirik Sorgard and his team collaborated internally and externally to optimise the supply chain, to drill standardised wells and to build tried-and-tested designs more efficiently. Indeed, their work has resulted in a cost reduction of 70% against initial estimates, for the wells, and the subsea and topside facilities.

The Shell baton has passed from Bruce Collipp, to Robert Patterson, to Eirik and the engineers of tomorrow.

By learning from previous projects, by replicating our successes, by adding new technology, we have become more efficient, better, safer — fit for a future of great change.
The way ahead
And make no mistake. The future is one of very great change. The world’s energy system is shifting. So now, more than ever, we will need the spirit of Blue Water 1, of Mars and of Vito. We will need the spirit of OTC.

The world needs much innovation and collaboration as it seeks to meet growing energy demand with fewer greenhouse gas emissions. This is a challenge far too big for any of us to meet on our own. But if we continue to innovate together, if we collaborate as we have in the past, I believe we can have an impact.

Like Bruce Collipp and Robert Patterson, like Eirik Sorgard and the Vito team. The future we are working toward today, can one day become our proud legacy.

And this brings me back to where I started: onshore, here, with you.

Let us celebrate 50 years of innovation and collaboration, but let us also look forward to many more decades to come.

Thank you.