ORAL HISTORY PROGRAM

John de Wardt: World Travels and Industry – Oil and Gas Innovations

2026

PREFACE

The following oral history is the result of a recorded interview with John de Wardt conducted by Trent Jacobs on December 9, 2024. This interview is part of the AIME Oral History Program.

ABSTRACT

John de Wardt is a globally recognized consultant with 48 years of experience in the upstream oil and gas sector. With a career spanning 30+ countries and collaborations with over 80 global clients, John has established himself as a leading expert in well construction and systems optimization. Growing up in North Yorkshire, England, volunteering on a narrow-gauge steam railway in Wales, de Wardt was immediately drawn to mechanical engineering. After graduating from the University of Newcastle upon Tyne, de Wardt threw himself wholeheartedly into a career with Shell, which took him to The Hague in the Netherlands and the North Sea, Houston, USA, Bangkok, Thailand, and Miri, Sarawak. His career progressed through international drilling contractor Forasol / Foramer, then global service company Halliburton. Later, de Wardt started his consultancy, which brought him a life of travel, excitement, and unique challenges. Now, known as a leading expert in lean manufacturing, borehole drilling, and more, de Wardt is a Fellow of the Institution of Mechanical Engineers, a Distinguished Member of the Society of Petroleum Engineers, and a frequent lecturer at SPE forums, workshops, and symposiums with no plans to retire anytime soon.

Readers are asked to bear in mind that they are reading a transcript of the spoken word, rather than written prose. The following transcript has been reviewed, edited, and approved by the narrator.

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00:00:11 Introduction

Jacobs:

Good afternoon, everyone. It's my honor to be joining you today, along with John de Wardt, a globally recognized consultant with 48 years of experience in upstream oil and gas. John has earned a reputation as a leading expert in well construction and systems optimization, and a career that has taken him to 36 countries to work with [over] 80 global clients. John has led industry initiatives such as lean drilling, he's authored 46 technical papers, and played a pivotal role in advancing drilling systems automation.

My name is Trent Jacobs, Managing Editor of the *Journal of Petroleum Technology,* and this recording is part of AIME's Oral History Capture Program. John, thanks so much for joining us today.

de Wardt:

Thank you for having me. I look forward to this.

00:00:53 Growing Up Engineering and Narrow-Gauge Steam Railway

Jacobs:

Right, well, me too. Let's start at the beginning, John. Tell us where you grew up and a little bit about how you spent your childhood.

de Wardt:

So, I grew up in North Yorkshire in North East England. I went to school in Staffordshire in the Midlands. And then I spent a lot of my summers in North Wales in the mountains there, working on a narrow-gauge steam railway. We started out working on their telegraph operations. I was a young kid helping my dad, and then advanced into working on a rebuilding project for two miles of track that had been flooded by a pump storage power scheme.

We ended up doing things like drilling, rock drilling, blasting, rock removal, running skips down temporary track, and then ending up driving what we call “dumpers” in England. So, three-gear dumpers, small dump trucks with a tipper on the front, and running up and down rocky roads, taking fill from where it was being excavated to putting it back in to level the track bed out. So, that was a lot of fun back in those days.

Jacobs:

That's really a great memory, I love it. What did your parents do for a living?

de Wardt:

So, my dad was an electrical engineer from Imperial College originally. He joined the post office in the telecommunications department. He started out there, and then he changed to the chemical industry,

and that's when we moved from south of London up to North Yorkshire. My mother, most of her life, was a homemaker. She was a volunteer in certain organizations, but actually, she started out life as a calculator. I think they called them “computers.” So, she worked in an office with some friends, some of whom I got to know, and they were doing calculations all day long. I could never get her to tell me what the calculations were for. It was something secret in some form or other.

Jacobs:

A little mystery. So, who or what influenced you to become an engineer?

de Wardt:

I would say my father.

Jacobs:

All right, and how so? What did he do in that regard?

de Wardt:

So, when I was young, he was a plant engineer up in Billingham. It was Imperial Chemical Industries. He was a plant engineer in the heavy oil works. And I remember when they had shutdowns to refurbish the plant, change out catalysts, do all sorts of things like that, he would go in on the weekends. So, he'd go in Saturday mornings and Sunday mornings to go talk to the guys who were spending their weekend working, go check on things, see if there were any questions that needed answering, and he'd take me with him.

So, back in the day, we'd go into the chemical plant. It was shut down, but we'd go walking around and see all these activities. And this one plant, this heavy oil plant, had an immense crane that used to lift up vessels. Their methodology was to lift a vessel offline—a huge, tall, heavy vessel, and replace it with a clean one to keep the process going, and then they would decoke that vessel off to the side. So, I remember going with him up to the top of this crane and going into the control room and meeting the crane operator. It was a lot of fun. It was always exciting on weekends when he had a plant shutdown.

Jacobs:

So, you got some hands-on experience there, it sounds like.

00:04:34 From Meccano to Mechanical Engineering – Inspirations for Higher Education

Jacobs:

Well, what about school? What university did you go to for higher education?

de Wardt:

So, I was at the University of Newcastle upon Tyne, where I studied mechanical engineering.

Jacobs:

Okay, and then, what made you choose that school? Why did you go there?

de Wardt:

So, I had a number of choices. In the English system, you come out of school having done A-level exams, and you've done those, and you get graded, and then you have a number of universities that say whether we'd like to have you or not. Newcastle was one that offered me the opportunity to go there, and I very much liked their methodology of teaching because they were very much applications-oriented and not heavily on the maths side. Maths was not my strong point, so more applications [oriented] suited me perfectly, and that worked out very well.

Jacobs:

Okay, so you told us a little bit about how you knew you wanted to become an engineer, but why did you choose the field of mechanical engineering specifically?

de Wardt:

I guess it's because I grew up making working machines with a toy, a system called Meccano, which is my favorite toy.

Jacobs:

Okay, so Meccano. Tell me a little more about that. What is that?

de Wardt:

So, I think in the States, it's the equivalent to an Erector Set. And what happened was that one Christmas, my dad gave me a Christmas present when I was very young, a huge box. He~~'d~~ formed this wooden box that was six inches deep, a few feet each way, and it had partitions in it. And it was absolutely jam-packed full of Meccano. So, there were gears, wheels, axles, clockwork motors, girders, flat plates, all sorts of stuff, and thousands of nuts and bolts. And he gave it to me, and fortunately, he had a colleague at work who sold it to him because his son had gone off to university. So, I started out at a young age with a collection that another child had built up over many years, and I just started building things. I built all sorts of stuff. I built cranes that were as tall as me, gantry cranes, balancing the load so they worked. I built inclines with little rail tracks, and I had a steam engine to power that, so I was chugging away with methylated spirits burning under a steam engine. I built things like long, low loaders behind a tractor unit, and designed them and built them so that you could articulate both ends of the low loader. So, some of these things I made up, but some of them I got out of magazines that were part of the kit that showed you how to build or what you could build with it.

Jacobs:

I guess that's good experience for starting to work on drilling rigs and all the other things. Going back to university a little bit, did you have any professors who mentored you, left a lasting impact on you?

de Wardt:

Well, I suppose one professor who was the professor of my focus in the last year. I focused on what's now called industrial engineering. So, it was manufacturing and production, and that was the focus in my last year. I shifted towards that in the second year. And this professor was really good. He taught us business case studies, he taught us manufacturing methods, and I really enjoyed it and got on well with him.

He was also a career professor. So, when I went to him, we had to go and talk with him about your career. He always wanted people to put multiple opportunities into their basket. I decided to go to the oil industry, and I focused totally on that. He told everybody, well, John's not doing it my way because he wants to go to this one industry instead of pursuing multiple industries. But on the other hand, he is pursuing so many opportunities in that industry, I'll let him get away with it.

Jacobs:

What about classmates who influenced your studies? Do you have any memories there?

de Wardt:

Some were interesting guys. But one thing I did was we had the Stevenson Society, which was our mechanical engineering student society, and I was, for some time, the secretary of that. We had a guy who was the president, I think we called him. And we used to organize trips. We went to a mine that went three miles out under the North Sea. So, we went down in the cage, traveled on the railroad through the mine. That was really interesting. We went to other manufacturing plants. So, we used to do these trips. Then, of course, there was the brewery trip, which you did because you wanted to see the brewing process, but there was always the enjoyment at the end of the brewing process.

00:09:59 An Amazing Experience – My Thick Sandwich Degree and the Path to Shell

Jacobs:

That perfectly leads me into my next question for you, which is about internships. Did you have any experiences with internships that really shaped you?

de Wardt:

Yes, I did, a significant one. So, when I started in school, in elementary school, my mother somehow pushed me into the school a year earlier. My birth date was on the cusp of the transition from being in one year or the next year. I guess she wanted me out of the house. But somehow, she convinced the school authorities to take me in the year before I was supposed to go.

Then, when I went away to boarding school, I did the common entrance exam, and I showed up at boarding school, and they put me up a year with a few other students as well, because they said we'd done so well. So, [when] I ended up graduating from what you traditionally call high school, I was only 16, and most of my peers were 18. I turned 17 shortly afterwards. And my dad said to me, look, you're so young. Why don't you try and get an industrial sponsorship? So, you go and do what's called a “thick sandwich.” So, it's one year before university, three years at university, one year after. He said, this

would benefit you, and it would then mean you'd be a bit older when you go to university. So, I applied for that. I applied to different places, and I secured one of these sponsorships with ICI (Imperial Chemical Industries), the chemical company.

It was fantastic because the first 20 weeks—the first year I spent with them—the first 20 weeks was their apprenticeship course. They had this super school that they built on this big location with multiple plants on it. I did welding, fitting, machining, filing metal, making [a] straight edge, and all sorts of things in those 20 weeks. We got a lot of safety training as well. Then, the [rest of the year, I spent two weeks in different locations. So, I worked in a paraxylene plant, actually on maintenance and then on operations. I worked doing NDT, non-destructive testing, with the group doing that. I got sent out to a foundry. I got sent out to a pump manufacturer. I worked in a machine shop where I had to report back to the manager of the machine shop on a study of how his shop was running and how things worked. I also worked in the power station that they had there, and I remember they were stripping a 32-megawatt steam turbine. That was an amazing thing to see.

So, all that experience I had on hand when I went away to university, which really helped me a lot, because talking about machines and studying machines in mechanical engineering, I'd had hands-on experience with a lot of it.

Jacobs:

Yeah, that's great. You clearly had your hands full. So, what comes next? How did you get your foot in the door after that? What was your first professional job in the industry?

de Wardt:

So basically, I decided when I was at university that I wanted to join the oil industry, and in the drilling part of the oil industry, and I researched it a lot. I went down to the library a hell of a lot and sat there going through all the information I could find on it. Then, I decided that I would start applying to companies. With ICI, I could have gone back, but I went there in the summer. So, in the summer vacation, I did the next six months. So, I'd done one and a half years of my thick sandwich industrial sponsorship, and I could have gone back for the last six months, but they said to me, John, it's up to you. If you want to come, you can do it. If you don't, if you want to go to the oil industry, as you've been discussing, head off. Please, we'll pat you on the back and send you on your way. So, I focused on the oil industry.

Esso came to a career day at university, and I went and talked to them in detail. They liked what I was talking about and what I'd like to do, but they said, you need to apply to Shell. We'll recommend you to Shell because Shell is our partner, our operating partner in the North Sea. So, they did. Then, I went off to Shell, and I had my interviews in The Hague, the Netherlands. I was interviewed by, I recall, about five different people, and one of them was the head of drilling engineering. When I talked to him and explained what I'd researched about drilling and drilling engineering and my interest in it, he said to me, we're going to make you an offer. I remember going back to the airport, we used to take the KLM (Koninklijke Luchtvaart Maatschappij N.V.) bus from the railway station in The Hague. Going back to the airport, there's all these other students who'd had interviews as well on the bus, and they're all questioning whether they might get an offer or not, and I just kept my mouth shut because I figured, hey, I've landed this one. Then BP (British Petroleum) was also interested in me, and they gave me an offer as well, but I chose to go with Shell.

Jacobs:

I have to ask you, how much of the decision was the chance to travel abroad or live outside of home?

de Wardt:

So, an interesting question. When I was interviewed by Shell with these four or five different people, I mean, it was HR, it was petroleum engineering, of course, the drilling engineering, so different people, and they all talked about living overseas. They all talked about their experiences in Africa, they all talked about the Far East experience. Back in those days, it was Venezuela as well. And they all started asking questions about how would you handle this situation in this foreign country? How would you handle that kind of situation, which made it very interesting. When I talked with BP, their focus was very much on going to the North Sea. They had a big operation there. That was a big focus. That's where they wanted to train their drilling engineers, and so, for me, I was more interested, quite frankly, [in] leaving the UK. I was a little bit disheartened in the work ethic in offices in the UK from my experience there. I found the oil industry and drilling to be much more exciting, and I wanted to get into that and go overseas. So yes, it was a great step joining Shell.

00:16:38 Doing the Dirty Work – Life on a Rig in the Netherlands

Jacobs:

All right, so you set the stage for us quite well. What did you do when you got to Shell? Talk about the position. What were your job duties like?

de Wardt:

So, Shell had a great program back then. I think they still do, but I know it from then; they took you out of university, whatever degree you had, and they put you through, if I recall, about five months of training. So, they had their training center. It was like getting another degree. So, we went through programs. We did reservoir engineering, we did drilling, we did petrophysics, we did reservoir geology, we did completions, designing gas lift systems, we did economics, we did mud, [and] I can't remember what else, but it was a complete course of study before you got sent out to an operating company to get your starting engineering role.

Also, I got a hold of Shell, and I could have sat around for my full vacation before going on their courses, but I thought, I don't want to do that. I want to go on a drilling rig before I go on the course because of my experience of going into the industry before going to university, and recognizing I knew what a centrifugal pump was, and the other students sitting in the lecture hall asked me, what is that, and I could explain it to them. So, I asked them [Shell] if I could go work on a rig, and they said yeah, you can go work on a rig as a floorman in the Netherlands. So, I went to work on this rig up in Coevorden—I think it was about eight weeks total—as a floorman or as a roughneck. We were drilling a deviated well, 30 degrees inclination, under the town of Emmen. We were using high-pressure pumps. We were using extended nozzle bits. It was really quite interesting.

Jacobs:

Yes, so tell me a little bit more about that. This is the 1970s, and your real first introduction is going to be working on the rig floor. So, what was it like? What was the learning curve like? How much did you love it?

de Wardt:

Well, there were, I think, three or four of us in total as trainees on the rig crew. The other guys were all heading to be drillers, and I was the only drilling engineer, because I'd specifically asked for this. And yeah, I mean, you clean out the pill tank, and everybody soaks you in water while you do it. And somebody says, can you go and ask the company man for the key to the V-door? All of these things went on. I remember one day that people came from the office, engineers and managers, and with four of us on this rig, sometimes we were a little idle. You know, if it was just drilling, what were we going to be doing? So, we weren't looking too active. When they left, he hauled us in his office, sat us down, and said, next time they come from the office, look like you're doing something. I don't care what you're doing, get a hammer, hammer something. So, when they came from the office next time, we all had a hammer.

But the real breakthrough came when one of the guys was very astute. He was a Brit who'd moved to the Netherlands in another industry, married a Dutch lady, [and] learned Dutch, so he could speak with the crew a lot and communicate well with them. One day, they got clay balls, and the driller was starting to reciprocate the drill string to try and get rid of this clay ball, which was up in the bell nipple, and he was also trying to reestablish circulation. And this guy said to me, John, come. He grabbed me, we grabbed two spades, we went up, we walked up the steps, we walked along the catwalk underneath. It was a U914C derrick, so it was a full derrick; it wasn't a mast. It had a huge substructure. We went up there, up to the bell nipple, and here's this clay ball sitting around the drill string. We started digging. I think we must have been digging for an hour. My shoulders nearly fell off, you know?

Anyway, we're digging away, and finally, the fluid comes through, the mud. It goes absolutely everywhere, because it's spurting out where the clay ball had opened up and broken up a bit. Fortunately, I had my head up between two big girders so I could breathe air, and I grabbed this guy, pulled him by his shoulder, so he was up there. We're both up there, gasping for air with this mud flowing over us. I mean, shoulder down, we were just covered in flowing mud. And after a while, the circulation got reestablished. It got started going back down the flow line, and everything started to quiet down, and suddenly, there was a tap on my shoulder. I turned around, and there was one of the rig crew, one for me, one for him, and they pointed to us, get out of here, go take a shower. After that, we were in. Then, they took us on the rig floor. Within eight weeks, I was also handling the tongs on running pipe. So, get involved, go do the dirty job, and you'll get taken on board.

Jacobs:

I think I know the answer to this next question, but was it difficult for you to transition into this role?

de Wardt:

No, not at all. I loved it from the get-go. I just, yes, I loved it. So, from there, I went to NAM (Nederlandse Aardolie Maatschappij) in the Netherlands. I worked as a rig engineer, then I worked in the office as an engineer. I just loved it all the way through.

00:22:26 My Systematic Error Model and First Major Drilling Project with Shell

Jacobs:

Okay, so love at first sight, but what about your first major project? Tell us a little bit about that. What was it like?

de Wardt:

My first stint was working as a well-site engineer on land, actually drilling deviated wells, which was quite tremendous back then. And then, I went offshore drilling exploration wells from a jackup. And one day I got a phone call from the boss in the office, and he said, bring everything you've got back home, you have a new job. So, I brought all my stuff back and went to the office. He said, you're now running this project to re-survey the Groningen gas field. So, it was a big re-survey program, basically because the old surveys had significant errors that meant you couldn't successfully drill a relief well. And doing that, I got connected up with Chris Wolff, and the two of us started working on studying borehole survey errors. That's when we created our systematic error model, doing the surveying, resurveying the Groningen gas field, using free gyro surveys, modifying the way we ran them by working with the service company to make sure we were maximizing the accuracy we could get from those devices, and then learning and understanding how they worked. Then Chris, his attribute was he was a measurement guy, and he was very good on magnetics. So, he worked with me, and I worked with him, and we did lots of measurements on magnetics and got quite horrified by the magnetic errors that were occurring while people were drilling.

Then, one of the other fantastic things that happened was I got a call doing all this research work, basically in the borehole surveying and finding improvements to it. I got a call to go down to The Hague, meet in the head office with a guy from North America who had an MWD (Measurement While Drilling) tool that they were interested to test, and that's when I went to dinner in the late 70s with Marvin Gearhart. That was unbelievable. So, Shell in The Hague, the top dog. He said, yep, we're going to test your tool. We'll test it. It was in a well in Coevorden in the Netherlands. It was on a Shell or NAM—as the company is called in the Netherlands—it was on one of their rigs. Marvin shipped his tool over and sent over his engineer, Munroe Knight. So, Munroe and I went to the rig site, went in, said hello to the company man, who I knew, Henk; he was a really good guy. And we talked to him, introduced him, and Munroe said, I've got to go unpack my tool and put it all together and get it ready to run, and Henk said, wait here, John.

When Munroe left, Henk turned to me, and he said, John, I got a call. I said, what do you mean, you got a call? You can do anything you want. I said, okay. I go out, help Munroe, Munroe sets it up. The tool gets lifted up, gets run in the well, it starts pulsing, Munroe's getting all his data, things are looking good, and then Munroe had this really long face. And I looked at him and said, what's up? He said it stopped pulsing. I said, okay. He said, yeah, but we'll have to wait for a bit trip to get it out. Then, by the time I've repaired it, they would have already gone back in, so we'll have to wait again. I said, I'll go ask Henk to pull it out. He said, what? I said, yeah, he got a call. Off I go to Henk. Henk says, no problem, pull it out. So, they pulled it out. They laid it out on the catwalk. He said, how long will it take? Munroe said, I don't know, a few hours. Henk said, okay, we'll wait. Two hours later, Munroe had it working again. Henk picked it up, ran it in the well, and it was a really successful test. So, back then, you could have a lot of fun doing testing, especially when the company man got the call.

00:26:26 Rein Escher, Brian Ward, Marvin Gearhart, and Other Fantastic Mentors

Jacobs:

Speaking of some of those names that you were mentioning, do you have any other influences or mentors around this time in your life?

de Wardt:

Yes, for sure. There was a senior drilling engineer, Rein Escher. He's a pretty famous guy. He was down in the Shell Central Office, and he really put his arm around the work that I was doing with Chris Wolff. He really gave us a lot of senior guidance, especially when we started to get involved with the launch of Gyrodata. So, Chris and I were doing the technical evaluation of Gyrodata's proposal to take the cruise missile gyro from Incosym and turn it into an aerospace graded technology for borehole surveying. So, when we went to visit them, Ryan was our mentor, coming along with us, getting us to feed him information so he could take the big decision, which in the end, he and the other managers took the decision to put a million dollars into Gyrodata, which helped launch their company.

At the same time, Ruben Feenstra. Ruben was the head of drilling research down in the Shell Labs in Rijswijk. He's very famous for PDC (polycrystalline diamond compacts) bits. But he gave a presentation when he retired, and I was invited to it. And he said that he felt that the teaming of myself and Chris Wolff was one of the greatest research efforts he'd seen because of the way we worked together.

Then, later in Sarawak, working for Brian Ward, who was the operations manager, Brian really stood out. Everybody, everybody, really enjoyed working for him. He wasn't an easy pushover. He knew where to poke, where the holes were. He knew where to tap on the things that needed fixing, but everybody had a huge amount of respect for him. And he saw what I did in operations contracts out in Sarawak. So, he actually brought me to The Hague under him when he kicked off Shell's Drilling in the 90s, and I did the contract strategy for Drilling in the 90s.

Then, as I moved on, when I was vice president of Halliburton, I was working with Brown and Root (Industrial Services) people who were bringing the project management piece into our team. And one of them was Larry Marriott. Larry Marriott was the senior engineer from Brown and Root, also a real entrepreneur. He had a side business as an entrepreneur. He retired early and developed an amazing business, shipping stuff with FedEx for craft products, and he did extremely well. But I remember Larry. He was a great guy to help us go and talk to the C team, and he said, you've got to remember, he said, you can be right, you can be dead right, but you might be dead and right.

Then, I guess, you can add Marvin Gearhart to the list because I got to know him more when I was working in the States in the early 80s, going up to his office, talking to him about stuff, meeting Serge Scherbatskoy, who was a really interesting guy, developing a lot of his [Marvin's] logging tools. I always had chats with him when we went to drilling conferences, always spent a lot of time together. Then, when I went out on my own, I called him to ask for his advice, and he said, John, get in your car, come up here and stay at my house for a few days. So, I did. I went and stayed with him and his family. They treated me fantastically. And every now and then, Marvin would take me into his office, we'd sit down, and we'd chat for a couple of hours, and he gave me a lot of good insights. He told me a lot of his experiences. A fantastic guy, very friendly, very down to earth, and a fantastic card magician.

00:30:21 My Complete Work History – A Quick Recap

Jacobs:

John, do you have any other positions that you held after this?

de Wardt:

So, basically, my history was starting out with Shell as a drilling engineer. In the Netherlands, the company is "Nederlandse Aardolie Maatschappij," which is a Shell Exxon joint venture company. I started out there as a well-site engineer on land rigs and offshore rigs, then this project engineer, then an operations engineer supervising rig operations for a couple of rigs, writing the drilling programs, reporting all of that stuff. Then, I went to Houston as a staff drilling engineer, which was a really interesting one-off position. Back in those days, Shell Oil, the US arm of Shell, of Royal Dutch Shell, was owned by 31% minority shareholders. So, Shell had to actually be very fair in trading information to and from Shell Oil, so it didn't get sued by the minority shareholders. They also had another company, which was 100% owned, called Scallop Corporation, and Scallop Corporation was a big part of the procurement arm of Shell International. They bought rigs, they bought land rigs for Nigeria, they owned half of a SEDCO 700 series rig. They built or installed fueling systems in airports, they had a petroleum trading, and then they had this special office with Frank Keightley running it permanently, a global drilling engineer from Shell, and he was running it permanently. Then, he used to get young engineers like me come on two-year assignments. It was fantastic because we were following new technologies. We followed the new MWD tools as they all came into being. I was burning up wellheads to try and find fire-resistant wellheads because of the Bay Marchand blowout. Exciting times.

Then, I ended up being a drilling performance engineer in Thailand, where we increased our drilling performance quite significantly on the land drilling there. Then, I moved to Sarawak, started out as a drilling performance engineer, and then moved into contracts management. That was a very positive shift for me. And I was doing drilling and production contracts and got those all sorted out. And then, the maintenance contracts were an utter mess. So, they told me, you take over the maintenance contracts, because they were also merging production and maintenance together. So, I got these guys together, and I shut them down, and I had these huge whiteboards. I shut them down. They said, you can't do that. I said, yeah, now tell me what contracts you've got and what their status is. And halfway through the week of brainstorming all this stuff, they said, woah, we got a real problem. I said, yeah, exactly. But we tidied it all up once we understood where the mess was.

Then, I moved to The Hague as head of operations contracts. That's when Brian Ward brought me there to come and really focus on developing incentive contracts, more modified contracts for the drilling in the 90s initiative. And in '91, I moved to Forasol/Foramer as deputy managing director, and my role was supervising operations and technology. So, at the time, the guys actually went through a program with other companies and European funding and built a slim hole rig that drilled to 3,000 meters with high-torque drill pipe and fit on two tennis courts. So, really interesting stuff. And we did a lot of incentive drilling. There was the famous Lekhwair turnkey drilling. And then in the Far East, we did the lead drilling contractor role. And we halved the time of drilling these wells for Shell offshore there, and actually made a significant bonus.

Then, I joined Halliburton as the well construction vice president, where we developed this program to take them into what is now called IPM. And at the time, the business went down, and they said, no,

we're not going to do it now. So, they shelved that project, having given it C-suite approval, but they said, no, it's not going to be done now. And of course, you see the fruits of those things coming out today.

In 1994, I set up as an independent consultant. So, I founded my own company, stayed on my own instead of building a large group, and focused on specialties that I could bring, like Lean Drilling™, strategic planning, gap analysis, very much focused upstream, particularly towards wells.

00:35:12 Fantastic Adventures Abroad – 37 Countries, 5 Continents, and a Police Escort into Town

Jacobs:

Okay, you've listed a few of the different locations that your career has taken you, but share with us a few of the other places, some of your favorite countries, that you've traveled to because of work.

de Wardt: [00:34:46]

So, I lived in six countries, of course, the UK, but then I lived in the Netherlands. Following that, it was the US, and then moved to Thailand, living in Bangkok, and then to Malaysia, living in Miri, so that's really between the beach and the jungle. And then, back to The Hague again in the Netherlands, and then on to France, so Paris. Then, after that, I was back in the United States. And then, I've worked in another 31 countries on various assignments. So, that's five different continents, I think. All sorts of places.

Jacobs:

Let me ask you this. What has it been like living all over the world, working all over the world? Just reflect on that for me.

de Wardt:

I mean, in a word, fantastic. I just love it, and my late wife did as well, and my kids did. Our kids were born; one was born in Thailand, the other was born in Malaysia. But wherever we lived, we really went to go and enjoy where we were and what we could do. I also liked going to new countries. So, it's a pleasure to arrive in a new country. Just recently, I was in South America, and I flew from the main capital city to a remote location where the oil fields were dated pre-war. Unbelievable stuff, and it was very remote inasmuch as the industry was not really present there to try and get suppliers to come there to do stuff. There wasn't sufficient business. So, it's a really challenging environment. The people were very pleasant, and a lot of them are extremely willing to learn. If you can go to these places and share some knowledge and insights with them that make their working life better, you can see a big smile come to their face.

And then, of course, there's the other countries where, yeah, the client hires a policeman with an AK-47 to escort you into town. And as long as you know that, and as long as you understand the protocols of how to handle that and behave with it, you're fine. I was in Angola during the war, and that was quite an experience. It's following the protocols, it's looking over your shoulder, it's just understanding the situation and knowing how to handle it. And yeah, even Angola during the war was—well, the rebels came in the base two weeks after we'd been there. So yeah, they were pretty darn close. But yeah, if

you do everything right, you can be okay, and you can see all these different places.

Jacobs:

Some good timing there in Angola.

00:38:20 Lean Manufacturing – The Concept That Hooked Me

Jacobs:

Let me ask you, John, about your research and your work focus. You've alluded to it a couple of times here, but tell us about your real years-long passion, things that you've been really working on and campaigning for within the industry.

de Wardt:

So, my big passion's really been lean manufacturing, which comes from the Toyota production system. So, I would put that top of the list of all the other things. I've done a lot of research into that.

Jacobs:

Alright, so share with us how you got into that. What hooked you? And what is it? Just for those that aren't super familiar with lean manufacturing concepts.

de Wardt:

So, when I joined Forasol, it was the chairman who actually gave me a copy of the book, *The Machine That Changed the World*. I read it, and I found it absolutely fascinating. Basically, the book, *The Machine That Changed the World*, came out in the early 90s, late 80s, and it was a book that was published around a report by the Massachusetts Institute of Technology that they'd spent $5 million globally studying what they called the most advanced industry in the world, the automobile industry. They went through the US, they went through Europe, and they went into Japan, and when they got to Japan, they found these manufacturers who they did what they said they do more with less. They produced higher-quality vehicles with less effort expended internally and in their suppliers. So less, basically, man-hours in production. So, doing more with less. And one of the people from MIT said they are “lean.” So, the word “lean” has come from his comment and then got used in the book. But lean manufacturing really is the Toyota production system.

So, if you want to go back a step, you go back into the Toyota production system to understand what that is. But for me, I went back further. And so, over a couple of years, I studied this. I studied it as I started out in my own business, and I got back into Taiichi Ohno. Taiichi Ohno was the production manager in Toyota in the 1950s, and he was the guy who had the huge problem; he couldn't compete with the American manufacturers because he didn't have enough money. So, he had to become much smarter at the way he manufactured, and he did all sorts of things. So, I prefer to understand what, why, and how he did things because that ends up delivering the Toyota production system, and “lean” is a word that came out of this MIT study to describe the Toyota production system. So, I think it's become a really interesting and fascinating thing for me.

Then, what I did in the mid-90s was I developed my own program called Lean Drilling™, which I trademarked back in ‘95, and I've applied successfully around the world. I started with the basics, what are the foundational aspects of what Taiichi Ohno did that I could apply to drilling, having been an oil company operator, having been a drilling contractor, working on incentive kind of contracts, having worked within a service company? And that was the insight I brought to my clients in the industry.

00:42:18 A Relief Well in Sarawak and Other Exciting Technical Challenges

Jacobs:

Okay, well, we touched on some accomplishments. Let's talk about some of your challenges. What would you see or say is your biggest technical challenge that you've had to face and overcome in your career?

de Wardt:

Well, I think working with Chris Wolff and identifying and essentially rectifying borehole survey errors, which were unseen by the then-current industry model. The Walstrom model prevailed from the 1950s, and it was a random error model. Basically, you could think about somebody who's had a few too many drinks going home. He goes a little left, a little right, a little left, a little right—he gets home. But then the guy with one short leg, he's got a systematic problem, and he keeps going off on a curve, and he never gets home because he's just curving off in one direction. And so, what we found was that the significant errors were not random; they were actually systematic. And these systematic errors had a significantly detrimental effect on calculating the borehole position uncertainty. Then, subsequently, we launched this, and we published it as an SPE paper. It became known as the Wolff and de Wardt systematic error model. And then, industry organizations like ISCWSA (Industry Steering Committee on Wellbore Survey Accuracy) have taken this a lot, lot further with groups of experts developing these models and the expertise in order to continue to reduce the uncertainty.

The other big one I had, which I really enjoyed, was the unfortunate event of drilling a relief well. I flew into Sarawak when I transferred there, and two weeks later, I went to the office, started working, and two weeks later, there was this major blowout. It was a shallow gas blowout, 18 5/8” casing. It took the rig down. The rig came off the jackup, went in the water, disappeared to the seabed, and wiped out a lot of the structure, and then covered it in mud. I think it was about three feet deep. And it died, it stopped blowing, but we had to drill a relief well. So, then I got involved in it, and my focal point was to guide the relief well. So, doing a lot of analysis on the surveys to give updates to the directional driller on where I believed that they were, and then to establish that. A guy, Adrian Kemp, came out from Rijswijk and worked with me, so credit him working on that as well.

But yeah, we had all sorts of ways of analyzing the surveys. And we drilled the relief well. We missed the blowout well by six feet. And we could see the magnetic signature of the drill string on the MWD tool. And then, it was confirmed with Professor Kukes's homing in tool. Then we pulled back, and then we sidetracked that six feet, and the report said that the bits stopped turning. The string torqued up, and boom. Then, we pumped, I think it was 30,000 barrels of mud into this cave, which was down there. But my other role in that was also working with a structural engineer. And we needed to drill three wells from this jackup, offset from the blowout jackup, and we may have to leave one or two of the wells still there, particularly an observation well. So, the three wells, one was an observation well to go straight down and measure the pressures in the formation to understand the hydrostatic situation subsurface. The second was the relief well to fill the blowout cavity full of mud. And the third was to drill the

replacement well. And he and I designed and built a free-standing three-legged platform in a hundred feet of water in 10 days. And we built it with the Jackup rig, and we flew certified welders off a nearby crane barge we had working with the blowout rig, and we flew them over so that all the welds done on this structure were certified welds. It was a fully certified platform, and we made a deal with the drilling contractor, SEDCO, that we could just cut the Texas deck free and drop it on this structure as the deck of the structure. And we got them to give us their drawings, and we had already started building right away a replacement Texas deck in case we had to leave theirs behind as part of this freestanding structure. And then, we built a structure to sit on the slot of the jackup rig, and then put a snubbing unit on top of that, and then snubbed in from the surface so we could go down and confirm that the well was fully killed before abandoning it properly.

00:47:30 Inside Jokes and a River Battle in Austria – A New Life With SPE

Jacobs:

Well, that last one definitely sounds like an exciting technical challenge. What are some of your other highlights of your contributions to the industry? I know you have a lot to offer here, but what's at the top of your list?

de Wardt:

Well, I would say multiple SPE forums and workshops. I forget, I've done a significant number. I think my forums are up seven or eight. And they're always very exciting things to go to. And then, the Wolff and de Wardt systematic borehole survey error model. That's a landmark as far as I know. Shell's Drilling in the 90s contracts. I published on that. I wrote a new standard contract for Shell, which was a much more level and balanced contract than we had in the past, and then the structures for incentivizing the suppliers in the delivery of their services. Applying lean manufacturing into drilling and completion operations is my own proprietary program. So, I did that 20 years before other people started talking about lean and drilling. So yeah, I consider myself way ahead on that curve, and that my clients set benchmark performances across the globe.

I've been a lead player in SPE-DSATS, Drilling Systems Automation Technical Section, over many years, [and] program chairman setting up the symposiums. I'm still working with that on these committees, helping them out. And I have become a director emeritus of DSATS. So, I still stay involved in that. And then, as a program manager, I set up an industry initiative—initially with two other founders, but they both stepped aside, and I ended up running it—to deliver a drilling systems automation roadmap. And we delivered that. We published it publicly in 2019 after a number of years of work, as a 325-page book. And it was contributed to by 50 people globally, virtually through different work groups led by individuals on our team. So, that was a major accomplishment. A lot of people, from what I understand, are using that as a go-by to understand what is happening and where drilling systems automation will go.

But on the lighter side of SPE forums, they're always a lot of fun. The fun part is just dialoging with all these people and being with them at meals as well as in the room during the events. But then, usually we have an afternoon that's an afternoon off, and then work on that evening. So, there's an activity that's organized. And we were in Seefeld in Austria once, and the lady from SPE, she'd organized a rafting trip—Val Johnston Jones, a very famous lady for these events. She'd organized a rafting trip. We'd go down to the River Inn, which is a deep river. It's turquoise because it's water from glaciers. It's cold. They'd give us suits to put on, thermal suits, and then we jump in the river in order to get the water

inside the suit and then get warm. So, we're all ready to go. I think there were about 40 of us. They had these huge black rubber rafts, like military things. So, we get in these and off we go down the river. Hey, life's good.

Then, our guide in our raft said, okay, we're coming up to some rapids. They're deep rapids, but the water's going up and down. We're going to get out, we're going to flip the raft, we're going to go through the rapids underneath the raft. Okay. So, we get out, we flip the raft, we get underneath, and we go through the rapids. And then he says, okay, back out. We get back out, and he does a head count. We're missing someone. Then we go, who's missing? Marvin. Marvin Gearhart was missing. Then, we heard his voice in the distance. He was still under the raft, so we got him out. And then, we flipped it back over, got back in the raft, and going down the river. Then, an almighty battle started between the three rafts. And we were trying initially to pull people out of the other raft into the river. And I don't know, I remember my arms were black and blue at the top, and they felt stretched by a couple of inches. During this horrendous battle, Ford Brett jumped out of his raft, hit the floor of our raft, pulled the air plug out, and it started deflating. So, we had to fight him to get him out of our raft back in his own raft, dive to the floor, put the plug back in, and by that time, our raft was U-shaped. We were sitting in the middle of it, and both ends were stuck up in the air, because we'd lost the buoyancy in the middle. It was so funny. So, we end up at the end of the raft trip, we get out, and we all have a good laugh. We get in the bus, we go back. Val Johnston Jones is waiting for us at the hotel. We come in, she said, so how was it? We said, those guides, they're absolutely crazy. And she said, they already called me. They told me you're the craziest crew or craziest group of guests they've ever had on the river. You've got to have fun at these forums.

Jacobs:

Yes, we don't do field trips quite like that anymore, I think. Well, outside of river rafting excursions, do you recall, do you have any other memorable experiences working with colleagues that you want to share?

de Wardt:

Yes, I think one that was really significant—so, I was still a young guy back then when I went to the States in 1980, working in Houston, as I said, under ~~the~~ Scallop Corporation. I was assigned to go and look at this new 15,000 PSI system, which was being manufactured to be sent out to put on a SEDCO 700 series rig in the North Sea, which was a new rig. And there, I met Earl Shanks from SEDCO. Earl's a fantastic character, knows his stuff. So, we were doing choke manifold testing. And as we tested it, I looked at the manufacturer and said, you're testing it with fresh water. He said, yeah. I said, you can't do that. I said, this thing in operation is going to be full of mud. So, you need to get some mud and test it with mud. Oh. They did that, and the torque, well, more than doubled. They sheared off the drives on the spindles. They could not open the valves. They were gate valves with seats on both sides. What happened, the development manager figured out what happened when it was water, and they only got downstream sealing. When it was mud, they got upstream and downstream ceiling, which doubled the torque. So, the solution they had to implement was to change to hydraulic actuators on 15,000 PSI valves in the choke manifold, which is what they did. So, this, to my knowledge, was the first one that had hydraulic actuators. So then, Earl was very persuasive. He needed it fixed, and he needed it in England. So, he got the manufacturer to hire a 747 to charter out of Houston to England and put the choke manifold on that to get it there on time. It was a fantastic experience because his boss was Dillard Hammett. Dillard Hammett was up at SEDCO in Dallas, and Dillard had a background in the SEDCO 445, which was that

joint venture with Shell. Fantastic stories from those guys. So, we'd call up Dillard. So, his surname is Hammett, and when we told him bad news, and bad news, and bad news, every time we told him bad news, he'd say, dammit. So, we started calling him Dillard Dammit.

Then, we got involved with Duke Zinkgraf as well at the same time, and Duke was the Baylor thruster guy. So, he was the thruster knowledge person back in SEDCO in those days. It was a really interesting time to see that. What also happened was, I flagged to Augusto Carmona da Mota, who a lot of people probably know, back in Shell in Aberdeen, and said, I bet you've got a problem with 10,000 PSI valves, and he said, well, we got a choke manifold out there on a rig. I'll send a drilling engineer out there, a young guy, to go check. The guy came back and said that manifold has cheater bars all over it because they can't operate the valves by hand. They have to have cheetah bars. So, the issue was already happening at 10,000 PSI, but nobody had really stopped to address it and say, do we need hydraulics, or do we get away with cheetah bars?

00:56:39 My Honors, Awards, and Greatest Impacts on Industry

Jacobs:

Okay, John. What about some awards or honors that you've received over your career? Which ones would you like to share with us on that?

de Wardt:

Well, I think the Institution [of] Mechanical Engineers, which I joined first, many years ago in the UK. I became, through the system of that experience, as my industrial sponsorship, and then through my experience with the drilling industry, I became a chartered engineer. So, that's rather like a PE, so it's a normal course of action. But then, one day back around 2013, I think it was, I got a communication from the Institution. A lady there got a hold of me and said, we think you should apply to be a fellow. Well, okay. And then she said, I'm going to put you in touch with someone who is a Fellow who can discuss with you what you've accomplished and see how it fits. So, we had this discussion, and he said, yes, go ahead and apply. And it's a very rigorous process. You really have to establish multifaceted accomplishments in a strict format and then go for an interview. I went down to Houston and had two Institution [of] Mechanical Engineers Fellows interview me. And then, they report back, and then it goes to the board of the Institution to get voted on, and I became a fellow. And I'm actually very, very proud of that. I think it's a rigorous accomplishment to achieve.

Then, the Society of Petroleum Engineers, I became a distinguished member in, I think, 2018, if I remember correctly. So, I was elected to become a distinguished member, which I'm proud of. Again, there's a lot of industry accomplishments and society accomplishments required in order to cross the hurdle to get that. And then DSATS voted me in as a Director Emeritus after I'd done my stints in various roles there. So, I still retain a relationship with the team there and act very much as an advisor to give them insights and ideas, and lessons from the past.

Jacobs:

Deservedly so. You definitely have had a huge impact on where DSATS is today. Speaking of achievements, and when you think about big industry milestones, which are the ones that you look at and you say, I've had a hand in that? So, where has the industry felt your impact the most?

de Wardt:

Well, shale development, I've had some hand in that, but of course, it's very much driven by the people across the US in the drilling business. But shale development is huge. What Mitchell accomplished, and the availability of resources, and the speed at which the drilling is accomplished is absolutely amazing. It has transformed the oil industry. So, that's a big one. Top drives. I think top drives were a huge breakthrough, and they suffered the problem that the original top drives from Bowen. I think there were about a dozen of them that went to the Middle East and were run. They leaked. They leaked mud. So, people put them down and didn't use them. And I remember being in The Hague in Shell's central office, and George Boyadjieff came with Beni Reinhold from VARCO, and they explained what they wanted to do and how they were going to do it, such that they would overcome those problems. And I think through George's design, or his leadership of the design process, to solve the problems—take locomotive drives which are horizontal, and put them vertical, and make them work with mud flowing through them—and then Benny's business acumen, they sold it to the industry, and it was a success. So, that became a turning point for top drives. And of course, everybody knows top drives are the way to go, not a kelly. MWD, you go back to my experience with Marvin. Back in ‘19—I'm going to say that was '78. But also, before him was the Teleco tool, which was Elf Aquitaine and Raymond Industries got together and created a company called Teleco. If anybody gets a chance to look inside a Teleco tool, you have to do it. It is an unbelievable piece of mechanisms. Looks like clockwork. How they built that so that it survived in drilling is amazing. Of course, they had big maintenance costs to keep the uptime, but that was a breakthrough. And then we know that's got to solid state now. So MWD is just so common, the ability to transmit data, and then LWD (Logging While Drilling), so bringing up a whole lot more information that's extremely valuable for drilling.

I think aerospace survey tools—so the adoption of the aerospace graded sensors inside survey tools—has had a huge impact. And then, we've now gone to more solid states, so MEMS (micro-electromechanical systems). Deep water development. I've had some involvement in that and drilling performance in the Gulf of Mexico, and again setting a record with it against quite some adversity with pressure regression and tar. So, that was very interesting, and I think everybody must recognize deep water development has brought in some major equipment and major accomplishments. I put the other one on the list, which is the industry's successful focus on safety and operations. I learned safety back in the 70s, early 70s, with ICI. They'd push it into us. So, they'd show us pictures of guys who had long hair, who got caught in a machine, and the guy's dead, lying on the floor, because the top of his head got ripped off. They'd show us that stuff back in the early 70s. Shock therapy. But then I remember in Shell, Shell brought in a rule that if you had a death in your operating company, the managing director had 30 days. He had to show up in The Hague, and he had to stand in front of the committee of managing directors and explain what the hell happened and what he's doing about it, and that really sharpened everybody's attention. So, I think the industry has been very successful. You look at IADC data, and it's all very positive. So yeah, great accomplishment.

01:03:18 Life, Love, and Family as an Expat

Jacobs:

Well, I know we touched on this one a little bit earlier, but I wanted to explore how your work and your travels, living abroad for so many years, how did that affect your family life, and how did your family support you in that role?

de Wardt:

So, I think, as expat life, my late wife and I and my kids, we loved it. We absolutely loved it. When we lived in Thailand, my late wife and I would travel all over Thailand. We learned Thai. We had a teacher come three nights a week to teach us one-on-one. And we'd take a train sometimes out of the train station in Bangkok and go overnight train to Chiang Mai, spend the weekend in Chiang Mai, Sunday night, take the overnight train back, 6 a.m. back in Bangkok, go home, have a shower, go to work. So that was a lot of fun. And we traveled all over Thailand, basically. The interesting thing there was my wife was in our apartment one day, and she got a phone call. A professor from Chemical Engineering Department at Chulalongkorn University said he'd like her to come down and talk to them about petroleum engineering. She was a drilling engineer with Shell Oil in the US, so she said, okay, I'll come and do that. And she went down and had what she considered was a very nice conversation about petroleum engineering, and they took her for lunch, and it was a nice chat. She came home. Two weeks later, she got a phone call. You've got the job. She said, what job? And they said, you're our expert on petroleum engineering, setting up a petroleum engineering course. She said, okay. So, she spent a year setting up a petroleum engineering course at Chulalongkorn University, which is very well established now, well-funded by Chevron in Thailand. I think the chairman or the managing director of Chevron in Thailand is from that course from the early days.

Our son was born in Thailand, and our daughter was born in Sarawak. In Sarawak, we go to the beach, go up the river, go into the jungle, just living the life out there. And I think we always said you can find something really good in every where you live, and I think a lot of expats do that. They know how to fit in, live the life, find the positive things, and go and enjoy them, and don't get run down by any negative things. When I was doing my consulting, my kids were still at home; they're all gone now, growing up. And my wife was around, then I was away many days on the road. And I think that people talk about the work-life balance, and I would say for sure, I was a lot more work than family life. So, a lot of responsibility on her bringing up the kids, but living in the mountains of Colorado, it was an easy environment to do that. The other thing, like I said, my wife was a drilling engineer with Shell Oil when I met her. And I think that background made her a great companion in supporting my career because she understood what I was doing and how I liked doing it. And I could tell her about it because she could relate to it. It wasn't like I had a business that she didn't understand at all. So, that was a big plus.

01:06:54 The Real Benefits of Professional Societies

Jacobs:

Okay, well, those are great memories, and what a great legacy that you and your wife have shared together. Let me ask you when you first heard about the AIME and also the SPE. How did these societies come into your orbit, and how did your involvement grow over the years to where it is now, to why we're talking today?

de Wardt:

Yeah, I know I joined SPE in 1977, but I was trying to rattle my brain as to what kicked me to do that, but I'm not sure. It was maybe just I was a member of the Institution of Mechanical Engineers and asked around, is there a society for us? That was one year after I joined the industry. And then, I published my first paper with Chris Wolff in 1980. So, I got off to an early start in publishing. So far, I've authored, I

think, about 46 papers and significant articles. A lot of the papers, of course, are in SPE OnePetro. And then, I've led 21 SPE industry forums, workshops, and symposiums, as well as been a committee member and session chair on the SPE/IADC (International Association of Drilling Contractors) International Drilling Conference for 17 years. I got invited on board by IADC back in the mid-90s, early 90s, and I did three years with them, and back then, the rule was you could only do three years, and you had to flip off. And then, they contacted me and said, you're on for another three years because SPE will invite you on. So, I stayed on for six years, and then my time was up, and you "expired out," as I kind of call it. Then, sometime in the early 2000s, SPE came back to me and said, we'd like you to come back on to the conference committee. So, I did. I did another 11 years; the rule for being only three years seemed to have disappeared.

But in that time, I brought on some new blood, new people, particularly younger people. And I would mentor them into the role of being on the committee, doing the evaluations, and being a co-chair, and things like that. And after the 17 years were up, I told everybody, hey, I'm going to retire, relinquish my role here, because I want to make room for younger people. I don't think I should sit around getting more and more silver hair, being on this committee. And then, I was a distinguished lecturer for SPE back in 1995-96, where I did a tour in the US. And then in 2021, which of course was an interesting time because of COVID, we started out thinking we were going to go, then it would have been a global tour. Half of it got converted to virtual, and then the second half got converted to virtual. So, it was the year of virtual lectures. As I said, I was elected a Distinguished Member of SPE in 2017. And then, I've held officer and board roles with DSATS. And I'm on the SPE Drilling and Director Advisory Committee as well. So, for two incumbents, David Reid first, and also for Jeff Moss, actually. I should say three incumbents. So first, Jeff Moss, then David Reid, and now Robin MacMillan. Yeah, so I've been on that advisory committee for quite a few years.

Jacobs:

Okay, and so, tell me how membership has benefited you. How has it helped your career along? And generally, what do you think societies like the SPE and AIME do for professionals?

de Wardt:

So, I feel my volunteering activities in SPE, as well as my willingness to speak up and to dialogue and debate with people in public forum, has established industry recognition of my capabilities. So, I find that I have a public brand, I guess, out there within the industry. And it's through being part of SPE, also IADC—I can't neglect that as well. I think that society is a two-way street; you give, and you get. And they are great places to share for the benefits of the whole industry and to learn from the dialogue with other industry experts. You go to a conference, you listen to a paper, you ask a question, and then you get into a dialogue with other people who are interested in that same topic or the ideas you've put out there or whatever else. And there's a lot to learn, but I see it as a two-way street; you've got to give, you've got to get. It's when you volunteer on a committee, you've got to give some time, it's sweat equity time. And unfortunately, one or two people like the title and don't give. It's unfortunate for the other people who are doing all the giving.

Jacobs:

I imagine this is very similar to what you would say to a young person or a recent graduate who was on the fence or thinking about deciding to join a society.

de Wardt:

Yeah, I'd say active membership in the SPE is a career-building experience. It most definitely is. I think some of the major service companies, I know one, I was told by an employee, he really wanted to get a publication done and be on a paper, and he contributed to one I worked on. But for him, the goal was to get a published SPE paper because he required it in his career with his service company in order to cross a certain threshold in promotion. So, I think there is a representation of how a company actually recognizes the benefit of you participating in publishing stuff. So yeah, I think, really short form, it's a career-building experience.

01:12:57 Career Highlights, Regrets, and Looking Ahead to the Bright Future of Industry

Jacobs:

And speaking of young people, when you look at your career, and you look at the state of affairs today, what do you think is the message that young people should be hearing about joining the ranks of the upstream industry in particular? What would you say to those young folks who may not know where they're going in their future but have the capabilities to join the energy industry?

de Wardt:

I think the foundation is to show the excitement of the technology applications we have in our industry and the level of responsibility given to young professionals. I guess I do see it in some other quarters, but for sure it's there. I think that young people today get excited about technology, being involved in something new and leading-edge, and they also like to be given responsibility. And I think they have a great capability to take it. I meet a lot of them while working with my clients, and I find they're ready and able to get on board. And they're willing to learn. They want to learn more. And the other thing is to explain to young people that oil and gas is a necessary mix in the energy transition as a powerful component of energy affordability, reliability, and sustainability. And I think as well, if you look at drilling engineers, the well construction business is starting to get a foothold, of course, in geothermal. How big that will grow, I don't think we know. But the doors are opening there. And then in CCUS (carbon capture, utilization, and storage). And again, how big will it grow? There are some interesting projects on the horizon. So, if you look at the drilling side of the industry or well construction and even the subsurface knowledge that goes with that, there are these green areas, totally green areas, where it can be applied. Think beyond that, people need to understand that oil and gas are a feedstock of many products that cannot be easily replaced. So, these people simply stopping oil wearing their synthetic clothing is a total non-starter and seriously an ignorant view of a feedstock that the world relies on.

Jacobs:

Yes, no, we see some of that in the new data that's coming out these days, where transport demand may be dropping, but petrochemical demand is not necessarily; it might be rising in some cases. And so, I wanted to say that we're about to wrap up our time here together. But before we do, I wanted to know, from your perspective, what has made working in oil and gas so meaningful? How has it fulfilled you? And, just generally, what do you consider your favorite part about what you've been working on all these years?

de Wardt:

Well, I think it's clear that oil and gas have lifted many people out of poverty. And this energy source has led to economic growth and a rise in living standards. And I feel I've contributed to it by bringing more oil and gas economically and responsibly to the global population. If you start to look at the future production profiles around the globe, an interesting part of that is OECD (Organisation for Economic Co-operation and Development) countries are lowering the amount of oil they are consuming, for sure. But non-OECD countries are increasing because those people are trying to access this energy-dense resource to lift themselves out of poverty, and also to give themselves a cleaner environment because they're burning dung, they're burning wood inside a building instead of maybe having propane in a bottle like we cook at home here.

I enjoy bringing knowledge and insights to remote, particularly indigenously manned operations through the planning and execution, resulting in their significant improvement in performance. And I find that people get great satisfaction from improving their reputation. So, when I go into a country, go into an operation, I'm dealing with the locals, the indigenous people. It's not full of expats and experts, and I'm able to share something with them that enables them to perform better. They feel so much prouder. Their reputations go up, and these people have a smile on their face. Yeah, it's wonderful to see their pride in applying what they can learn from me.

Jacobs:

Do you have any regrets that you talk about or think about in terms of career moves, or where your career is taking you? Anything that you would have tried to change or do differently if you had the chance?

de Wardt:

No, I've thought about that a few times because I did some different steps on the way, and what if I hadn't done that step or done that step? But no, I've reconciled it with myself. I sit back and look, and I say, I am where I am today because of what I did in the past. And so, I'm happy with that. think the one thing I could have improved is the work-life balance, if I'm truly honest. And I was traveling extensively. I used to go away for five weeks at a time. I went to Norway for five weeks for a trip with multiple clients, and one day I got home, I said to my wife, that's too much. I don't mind doing it, but it's wrong for the family. So, I actually built a limit: three weeks. But still, three weeks, three weeks, three weeks, it's a lot of time away. People talk a lot more today about work-life balance. And when I was out busily hunting work myself, I could have focused a little more on that for sure.

Jacobs:

Yeah, it's a relatively new phrase. We didn't have high-speed internet connections until relatively recently. Even the pandemic kind of helped us make doing all these remote meetings more acceptable. There have been a lot of changes over these years. Now, I'm going to ask you something to kind of simplify things. Can you sum up your career in about two or three words? I know that's pretty difficult, but what would you say to that?

de Wardt:

I would choose “prolific,” “exciting,” “challenging,” and I would add one more, and it's “ongoing.” I am not retiring. I love what I do. It makes me feel great. I live on my own, so it keeps me busy. The virtual world is my oyster, so yeah, I love it. “Prolific,” “exciting,” “challenging.”

01:20:09 Carpe Diem – Advice for Future Engineers and Exciting Days at the Racetrack

Jacobs:

I think you definitely are allowed four words on that one. So again, as we wind down to a close today, what advice would you have for somebody who was looking to follow in footsteps like yours, who wants to be a leader, who wants to be a really good engineer, who builds their reputation across this industry? What would you say to that person?

de Wardt:

Well, before I answer the question with the answer to what you're asking, I think the thing I would observe is that young people I work with today are very well educated. I'm a senior advisor to McKinsey, and I work with a lot of young people in their teams that I go to collaborate with, and I bring the upstream oil and gas insight to them. They're extremely fast learners. They can listen to something, and they get it. They're extremely energetic. They will work, they'll work the hours needed. I don't want to see them working too many hours, but they'll work the hours needed. They are working. They're not sitting around chit-chatting, whatever else. They're active. They're so exciting to work with. I really enjoy it, and the younger drilling engineer generation is exciting to work with. So, my kind of words of advice would be, get up, voice your opinions, listen to others, and march forward. So, wrap it up as carpe diem.

Jacobs:

Yes, those are good words to live by. Is there anything else that you'd like to say before we wrap up? Was there something that we left out of this conversation that you feel is important to cover?

de Wardt:

My love of motor racing. From a spectator seat. I haven't had the guts to get in a fast car. I've driven on the track, on track days with BMW and with Audi, when you have an instructor doing lead follow. So, I've done a lot of high-speed driving on race tracks, but not out there racing against other people. My son is a performance driver. That's his career. So, he's extremely capable. But yeah, I moved to Wisconsin a year ago. I live eight minutes from Road America, probably one of the most famous race tracks in North America. I'm a season pass holder, and I know I spent roughly 50 days there this year watching races. I go to the stands in turn five because it's a fantastic corner. We can look over the back at turn 14 coming up to the main straight, and then we have a Jumbotron right in front of us. So, we've got the whole race going on, and when I say “us,” these are other enthusiasts I have met and befriended at the top right-hand end of the bleachers at turn five. We are a little club up there. And it's fantastic, because we go there, we're all so interested in the race, we're discussing who's doing what, how they're performing in qualification, where they are in the race. One of the guys prints out all the information on drivers, teams, and cars, and we discuss it. At the end of the day, my mind is so relaxed because I focus totally on what's happening with all this racing, and nothing else comes in my mind. And I find that extremely relaxing. So yeah, it's wonderful and mind-clearing. And in 2025, I'll hit another 50 days at the racetrack watching.

Jacobs:

Yes, and you found a whole new love for another version of top drive, or you've given new meaning to that term there. So, with that, I think you've really shared with us a wonderful look into your life. And I really appreciate you doing that. Your life's work is fascinating. It's very inspirational, to be sure. And so, I just want to thank you for sharing all of that with us today. It's been a privilege to share this time with you and everybody else who's watching this on behalf of myself and AIME. I sincerely thank you for offering your insights and for what a truly remarkable journey your career has been. With that, I'll say goodbye to everybody.

de Wardt:

Yes, thank you, Trent. I really appreciate you interviewing me on this. It's been a fun interview. Great job. Thank you very much.

Jacobs:

Absolutely, John.