Still Going

Photo: Halfdan Carstens

Anders Farestveit set up the geophysical department at Geoteam in 1965 and ran it until 1972, after which he was managing director of Geco from 1973 to 1987. In 1996, he was conferred an honorary doctor of the University of Bergen in recognition of the work he did in Geco and his contribution to Norwegian scientific and industrial research. In addition, he received a special award for geophysics from the Norwegian Petroleum Society in 1986 and has been an honorary member of the Society of Exploration Geophysicists since 1997. He was also designated "Oilman of the year" by the Society of Petroleum Engineers in 1993.

Strong – After All These Years

The resources in the North Sea created the possibilities. People and their knowledge created the technology. Anders Farestveit created Geco. For posterity, he will be the only world champion in seismic acquisition.

Halfdan Carstens

The new buzz-word in the seismic industry is *fibre-optic*. Just listen to this: "Some 30% of the world's offshore oil- and gas fields have a need for permanently monitoring the production. The answer is ocean-bottom seismic systems with fibre-optic cables." Anders Farestveit, chairman of the Norwegian marine geophysical company Wavefield Inseis, and celebrated founder of Geco, has a clear vision. That's why Wavefield Inseis purchased Optoplan, the company that developed a fibre-optic Ocean Bottom Seismic system.

Before we continue. Here's some advice to the young generation that the old-timer gave to the students at a lecture in Bergen last year: "Forget about P-waves. Think more about S-waves." Why? Because the future lies in 4C.

The stage is set. Get to know Anders Farestveit. Just a few weeks ago he celebrated his 70th birthday. And he is still hanging in there.

35 years after

Norwegian petroleum operations would not have been as they are without some personalities who have stamped their mark firmly on developments. Personalities who have had courage to start something new, ability to develop new technology , and determination to take the activity out into the world. Anders Farestveit is one of these, and in the field of geophysics he is head and shoulders over most others.

Anders Farestveit took his M.Sc. in geophysics at the then Seismological Laboratory of the University of Bergen in 1965, one of the first at that prestigious institution. The next year, Esso drilled the very first well on the Norwegian shelf (8/3-1), and the oil adventure was slowly beginning, mainly based on American technology. All commercial geological and geophysical activity in Norway had so far taken place on land and was certainly not oriented towards any form of maritime effort.

The first commercial discovery offshore Norway came in 1969. Two years later Ekofisk was producing oil from Cretaceous chalk. Some 15 years later Farestveit had built and sold Geco, one of the world's leading geophysical service companies. Almost 40 years later, the same man is planning for the future: fibre-optic cables.

"As chairman of Wavefield Inseis, I spend my time on our future strategy. The rest of the staff takes care of the daily operations."

> *"Absolutely no-one can emulate him as world champion in marine seismic*

Norwegian technological success

With Geoteam as the instrument – and Anders Farestveit in charge – the very first marine seismic assignment was carried out by a Norwegian company in 1969. The client was satisfied and encouraged the company to continue. Here lay the seed of the specialised seismic company that was set up three years later.

The rich oil and gas discoveries on the Norwegian shelf have formed the essential basis. "That Norway has a rich shelf with large structures has been important for the development of Norwegian petroleum technology. The size of the reservoirs, where every single percent gives good cash, has secured the companies a basis for investments. The Norwegian shelf has therefore been a greenhouse for new technology. At the same time, we must remember that Statoil, Norsk Hydro and Saga Petroleum (they now form one company; StatoilHydro) all played an important part in developing Norway's position," Farestveit believes.

However, it was the people and the company culture that created the values, because Geco arose exclusively out of the work input and creativity of the people. Unlike the oil companies, it exploited neither raw materials nor natural resources.

To a large extent, it was Anders Farestveit who created the seismic company, Geco. More than 30 years have now passed, and a great deal of water has run into the sea, a lot of seismic has been shot in the same sea and many takeovers and changes of ownership have occurred since then. To cut a long story short, the Geophysical Company of Norway – usually called Geco for short - was founded in 1972 as an independent Norwegian limited company with Veritas and Geoteam as owners. However, we now know it as WesternGeco, a wholly owned subsidiary of Schlumberger.

With small resources, Geco developed new technology in a complex field in which Norway had not been involved previously, and the expansive company rapidly grew into a small Norwegian industrial wonder and one of the greatest business successes in Norway in the 1970s and 1980s.

"We have a culture in Norway for developing technology. We have seen a potential for development, and it is fascinating that we see opportunities for it," says Farestveit.

> *"Industry should learn from the universities and introduce a 'sabbatical year*

Upturn – and then downturn

From 1977 to 1985, turnover rocketed from 71 million NOK to 1.6 billion NOK and in a matter of 12-13 years from its start Geco

Photo: Halfdan Carstens

Anders Farestveit is presently engaged full-time as chairman of the Norwegian marine geophysical company Wavefield Inseis that can boast of 5 modern 3D-vessels that have the capacity to tow up to 16 streamers. In spite of his 70 years, he is not prepared to sit down and watch the industry moving forward without him.

had become the next largest seismic company in the world. The accumulated operating profit was just under 1 billion NOK. Few, if any, Norwegian companies can boast of such a trend. The growth was largely debt financed, and even though the company was an undisputed technological success, the financial reserves were too small and, combined with having become one of the world's largest seismic companies; this meant it could easily be hit by fluctuations in the world market.

"We were technological leaders in the world at that time, but were in a line of business where it was important to have solid capital at the base. This could most easily be achieved by drawing in an external investor, and the high oil prices at the beginning of the 1980's meant there was no lack of companies with sufficient capital and a desire to invest. One of these, Schlumberger, had been interested in us for a long time. They first approached us as early as 1982 and made several advances later."

The crisis in 1986, when the oil price briefly dropped below ten dollars a barrel, and the markets for oil-related services were virtually obliterated, was instrumental in Geco finally entering into negotiations and signing an agreement with the keenest suitor in the middle of 1986. The international giant, Schlumberger, acquired 50 % of the shares through a substantial infusion of capital. Farestveit sums up the situation: "Based on the profit and loss statement and the balance sheet, we weren't forced to sell out. We were never in a crisis situation, but to have muscles we needed several hundred millions in the till. I think Schlumberger made a good buy."

Schlumberger wanted control, so a change in the management was made. "I'd done my bit by then, so it was natural to pass the helm to someone else," he says today. "You shouldn't stay at the top of a company for more than ten years anyway. Industry should learn from the universities and introduce a 'sabbatical year' so that people at the top can get new energy. Then you won't run the risk of them becoming exhausted," he adds, thus giving us an idea to pass on.

"Anders Farestveit was right from the start the trendsetter and driving force"

A bundle of energy

Energy is not something Anders Farestveit lacks. He is renowned and notorious for long working days and nights, making high demands on both himself and his co-workers. It is said he even made good use of the time spent on his many jogs by simultaneously reading documents. But despite an ascetic lifestyle without tobacco and with little alcohol, he was unable to avoid being struck down by a heart attack while still young. The pressure on his body was just too much. The energy consumption was too high.

"Geco's development is closely linked to Anders Farestveit as a person. Right from the start, he was the trendsetter and driving force. His personality set its mark on the organisation and the culture in the company that was built up. He combined technological prowess and creativity and he himself hatched out the ideas for many of the technical solutions that formed the basis of the success," says one of his former colleagues.

He who is so fortunate to be granted a bit of his costly time cannot help but notice that interest is something that characterises him. Interest for development and interest for technology. Some would call it charm and charisma (perhaps not so odd then that the world's first commercial station for interpreting seismic data, developed by Geco, was named Charisma).

"Anders Farestveit is a winner type and at the top of his class in his fields. Absolutely no-one can emulate him as world champion in marine seismic," the same ex-colleague says.

Geco was an entrepreneurial company, and Farestveit was and is an entrepreneur. Because of this, there are many characterisations of him. Most are positive, others may be negatively loaded. But that's the way it is. Those who are keen to get something done, who are energetic, don't gain friends

Wavefield Inseis

Wavefield Inseis is a Norwegian marine geophysical company providing proprietary data acquisition services and offers a portfolio of non-exclusive multi client data to the global exploration community. The range of products includes long offset 2D, high capacity 3D, 4D, Multi-azimuth and Wide-azimuth data acquired with highly specified vessels and the latest seismic equipment, including the OPTOWAVE™ multi-component ocean bottom cable (4C OBC) system for permanent seismic 4D monitoring. We are also in the process of launching a new concept for EM acquisition and data analysis. The main offices are in Bergen and Oslo, Norway; other locations include London, Houston and Perth, with activities in the Americas, Europe, Africa, the Middle East and Asia.

everywhere. Nevertheless, there are some characteristic aspects of this man which everyone has to agree with, he is a visionary, interested, has a strong instinct for competition, is an able salesman, a good negotiator and has boyish charm. In addition, of course, to his ability in his field – geophysics.

This is also one explanation of Geco's success. He himself has entirely different explanations for why Norway could take up competition with American experts and American technology while still a novice in offshore technology. "There's no doubt that our marine traditions were valuable for the development we've been part of. We got people into our organisation who had the right belief. We were self-motivating and constantly tackled the challenges," he says.

"Farestveit was and is an entrepreneur

The future is fibre-optic

Geco is no longer a Norwegian company. The technology has been purchased and further developed with foreign capital, but is nevertheless still largely based on Norwegian skills. Several hundred Norwegian engineers are based in Norway successfully developing marine seismic. The Norwegian hegemony developed in Geco's golden days continues.

The same goes for Anders Farestveit. The pressure is off, but the interest remains. He has ideas, knowledge, visions and energy to contribute, and many people make use of these talents – fortunately. That is why he also has thoughts about the future.

"4C seismic will be important in oil and gas exploration to define stratigraphical traps and handle special geological conditions. However, 4C/4D is also important for production and for monitoring reservoirs. If the prices come down to an appropriate level, we will be able to lay permanent systems and regular shooting will be possible at a reasonable cost."

A key element in this context is the fibre-optic cables that Wavefield Inseis is now developing and about to deploy on two fields in the North Sea: Ekofisk and Snorre.

"The first test on Ekofisk covers only a small area. But if the response is good, we hope that we can get the contract to lay cables over the entire field within 2010. The same goes for Snorre operated by StatoilHydro who has also partly funded the research and development of the system."

Farestveit advocates the strength of fibre-optic cables in 4D acquisition with a persuasiveness that has become his trademark. "These systems lay 1-2m below the seafloor throughout the life of the field. They are permanent, the position of the receivers remain the same, meaning that there is no drift. That, of course, also means better quality of the seismic data. The other advantage is the longevity. The cables will not deteriorate as time passes by. While electrical cables will be damaged within approximately 5 years, fibre-optic cables can stay there forever. The only thing you need to repeat the survey is a shooting vessel. Reduced cost – possibly by a factor of five – is the result."

"Exercise gives a greater capacity for work

Anders Farestveit was also employed as an adviser during the development of the new technology that was initially called seabed logging (now better known as CSEM or EM; Geo ExPro No 4, 2007), which is supposed to enable hydrocarbons to be proven prior to drilling. For three years, he was a director of Electromagnetic Geoservices (EMGS), the company behind this technology.

"At present, the technology suffers from some limitations, but I believe it will not be long before we can collect data at depths in excess of 2500 m and in more shallow water than 500 m," he also said 5 years ago. Those that have followed the development in this industry will know that he was spot on.

"The development we have seen in marine geophysics will mean that in the near future we will see the acquisition of seismic data changing from the way we do it now. EM and 4C seismic will provide valuable additional information about the hydrocarbon potential of geological structures that have been mapped and become an integral part of the data basis before drilling takes place."

"The use of Wide- and Multi-Azimuth will certainly also increase for exploration. I believe there may be more 4D than exploration 3D in the future," Farestveit says.

"His job has given him an outlet for his enormous, insatiable appetite to create

Not just work

"Anders puts in more hours than any of us," says one of his present colleagues.

Even though he has passed 70 and has put in considerably more working hours than most of us, Anders Farestveit has absolutely no plans of becoming a pensioner. He is just not the type for that. Work is well on the way to being his hobby and he would never have achieved the goals he has always placed ahead of himself if he had looked forward to long, lazy days. Instead, his job has given him an outlet for his enormous, insatiable appetite to create.

The saying "still going strong" still fits him better than most others.

However, obviously, time is spent on other things too. The garden at his house – where his wife (!) leads the way - is, he thinks, one of the best on Nesøya after the two of them have put in many hours. A little time is also left for travelling abroad. But more than anything else, Anders Farestveit is keen on keeping fit and maintains that this is his chief interest, leaving aside his work. "I exercise 3 or 4 times a week. In summer, I walk quickly or run slowly, and in winter it is fine to ski."

"Exercise gives a greater capacity for work, and I would maintain that Geco wouldn't have been built up if I hadn't been in good shape."

Perhaps many of us who are fond of the "stressless" can learn from this.

This interview was first published in the Norwegian magazine GEO in 2003 and has been updated for this edition of GEO ExPro.

Fibre-optic sensors

"Although most fibre-optic sensors for the oil and gas industry have been made for in-well sensing, there is growing interest in fibre-optic monitoring systems for subsea and sea-bottom applications. These include ocean-bottom seismic cable (OBC) systems. Once installed on the seafloor a sensor system will remain there as long as oil and gas is produced from that field, providing seismic data on demand."

Hilde Nakstad, Optoplan