

## CUSTOMER STORY

Repsol Leads with Innovation  
through Partnership to Help  
Support €1 Billion Digital  
Transformation Goal

“Our mission here at Repsol is to be a global energy company that is committed to a sustainable world. Because of that mission, Repsol has created an amazing culture of innovation. As employees, we are encouraged to test and try new ideas that will make us better for our customers, our shareholders, our staff, and the world at large. It is this culture of innovation that led to the successful implementation of Azure NetApp Files for our cloud digital transformation initiative. Azure NetApp Files literally saved our cloud project.”

**Juan Pedro Bretti Mandarano**

Digital Transformation, Senior Engineer, Repsol

**About Repsol**

Repsol S.A. is an energy company based in Madrid, Spain. With over 25,000 employees in 35 countries, it carries out upstream and downstream activities around the world. Repsol operates as an energy company, including exploration and production, refining, distribution and marketing,

petrochemicals, power generation, electricity distribution and trading. Repsol is constantly pushing the envelope of what an energy company should look like. For example, many people are surprised to learn that Repsol operates a car sharing company. It was something

that started simply as an idea. How could Repsol become more ecologically friendly, beyond meeting (and exceeding) their CO<sub>2</sub> requirements; what else could they do that would be good for the planet and good for the community? While Repsol is known for creating energy, they wanted to do more.



Over **25,000** employees in **35** countries.



Average net production: **715** thousand barrels of oil equivalent per day.



Distribution of petrochemical products and lubricants in over **90** countries.



Service stations: **4,800** in Spain, Portugal, Peru, Italy, and Mexico.



**Seven** industrial facilities in Spain, Portugal, and Peru, with a refining capacity of more than **1** million barrels per day.



**10M** clients base with direct contact.



Responsible mobility: **1,700** electric vehicle charging stations and **732** autogas supply points.



We have incorporated low-emissions power generation assets, with a total installed capacity of **2,952** MW and planned projects worth an additional **1,083** MW.



CO<sub>2</sub> emissions reduced by **4.9** million metric tons between 2006 and 2018.



### Digital Transformation with Cloud Technology

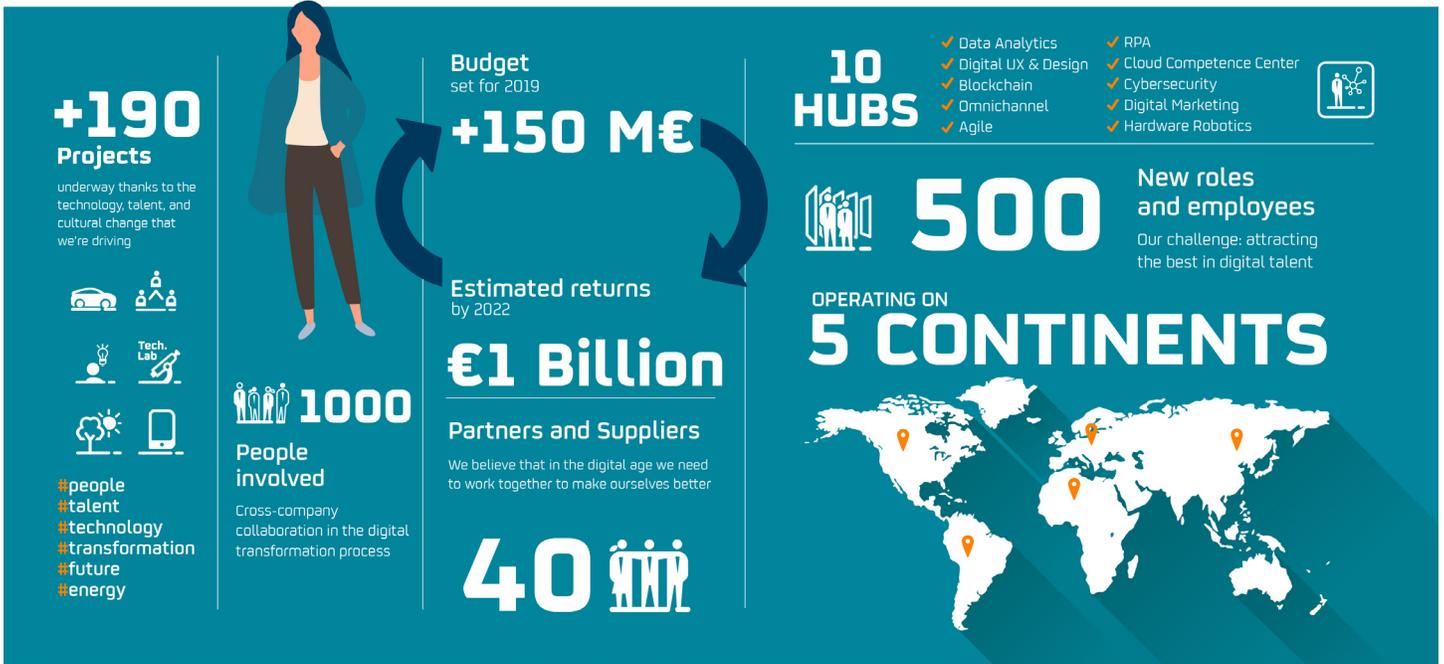
Beginning in 2016, Repsol defined a cloud strategy with the goal of modernizing services and optimizing IT costs on their path to digitally transforming the company.

“Every cloud company wanted to partner with us,” said Juan Pedro Bretti Mandarano, Digital Transformation, Senior Engineer, Repsol. “Ultimately, we decided to partner with Microsoft. Microsoft’s culture is similar to ours and they have a vision for the future of cloud technology, coupled with a strong sense of corporate responsibility that parallels our own thinking.”

### High Performance Compute in the Cloud

Repsol and Microsoft worked together to plan which applications to move to Azure. They had successfully migrated several workloads when their R&D department at the Repsol Technology Laboratory in Madrid saw the opportunity to replace their on-premises high-performance compute (HPC) solutions for reservoir modeling with the Azure cloud.

“Moving Oil & Gas modeling applications into Azure would be something very new for our industry,” continued Juan Pedro. “In fact, we weren’t aware of anyone else who had successfully done this yet. The need for low latency and high performance for these applications had effectively locked them on-premises. Being one of the first to market would require both investment and risk. But risk is part of our DNA — it is how and why we have grown so successfully.”



### Measuring the Impact for the Future

But Repsol does not take risk without strategy. "One of the ways we reduce risk is that we measure the impact, not the cost," added Juan Pedro. "Our Oil & Gas modeling initiative was one of 150 distinct digital transformation projects. We know not all of these projects will be successful, but we also know that for the ones that do succeed, we will see a return of €1 Billion FCF by 2022. The impact will be realized in more revenues, reduced costs, greater convenience, and simpler methods of working."

### It Was the Storage That Was Killing Us

While there is never a mandate of "you have to make this work" at Repsol, the desire to make the HPC environment work in Azure was shared across the team. "With HPC you have several elements. You have compute, graphics, storage, and the network. When we first moved our application over, it was too slow to ever be implemented into production," said Juan Pedro.

The Microsoft team presented several options, and Repsol tried all of them, but none of them worked to the level of performance needed. "Because the software was not smart enough to tell us what was impacting the performance challenges, we isolated each of the four key elements — compute, graphics, storage, network — and quickly discovered it was the storage that was killing us. Even though we were using the fastest storage options from Microsoft at the time, there was no way we would be able to move this application into Azure without something changing."



### Adding NetApp to the Partnership

As in most things, timing is everything. As Repsol began their digital transformation initiative in Spain, across the ocean in Seattle, Microsoft and NetApp had started to build a new service in Azure that would fundamentally change the cloud for enterprise applications. The name? Azure NetApp Files.

“I received a call one day from my colleague at Microsoft Madrid. He was excited and said, ‘I have something new for us to try.’” Juan Pedro went on to

explain that as soon as he understood how Azure NetApp Files worked — that it is a high-availability infrastructure built on NetApp technologies directly inside the Azure data center — he was optimistic.

“We know about NetApp here at Repsol. We’re a NetApp customer and trust their innovation. We also enjoy working with NetApp because we think the same way. Like us (and like Microsoft), NetApp brings a test-and-exploration culture. Once we decided to try Azure NetApp Files, we assigned a dedicated Microsoft resource who worked directly with the product engineering team at NetApp.”

The key would be to eliminate the latency between storage and compute. While it sounds simple on paper, Juan Pedro explained that there were many moving parts to get right. “Ultimately, it was the right time, the right people, the right passion, and the right project,” he continued. “There was tremendous excitement across the teams because we knew that Azure NetApp Files was going to save this project.”



### Faster in the Cloud than On-Premises

During one of the initial tests, a report that normally takes 30 days to run completed in 24 hours. “Our engineer checked the status and simply assumed that the application had stopped working overnight. It never occurred to him that with Azure NetApp Files the speed was so fast, the simulation was finished,” laughed Juan Pedro. “That was our big ‘ah-ha’ moment when we knew we had cracked this thing.”

### Into the Future

“Going forward, we plan to ‘lift and shift’ many more HPC applications into Azure NetApp Files. We will also provide global access to our remote scientists everywhere in the world. Today, many of our team members have to travel to extremely remote, rugged locations, carrying very heavy and expensive computer equipment that can support the multi-petabytes of data they need to access. With Azure NetApp Files, we can give them access on virtually any kind of device. It is faster, more collaborative, and more secure.”

Repsol continues to invest in their partnership with Microsoft and NetApp. “We have several ideas for new features, and NetApp and Microsoft are really open to hearing from us,” concluded Juan Pedro. “To us, that is the essence of partnership and the key to more innovation and success for all of us in the future.”

Discover [Azure NetApp Files](#) for yourself.