

Transforming cloud operations and DevOps on Azure platform

For a British Oil and Gas Multinational Company



Client description

The client is a British multinational oil and gas company headquartered in London, England. It is one of the world's seven oil and gas "supermajors." It is a vertically integrated company operating in all areas of the oil and gas industry, including exploration and production, refining, distribution and marketing, power generation, and trading. The client also has renewable energy interests in biofuels, wind power, smart grid, and solar technology.



Business challenges

With the growing need for automation and related efficiency, the client embarked on a journey to develop long-term CloudOps efficiency enhancement through DevOps Automation. However, they were facing several challenges.

- Managing more than 300 DevOps pipelines on the Azure platform with the help of multiple vendors
- Provisioning IaaS / PaaS and Apps on cloud platform (mainly on Azure) for different customer divisions based on specific division's needs and privileges
- Streamlining and monitoring governance processes (especially the deployment process) across multiple vendors
- Getting a unified view of various DevOps processes, projects, and pipelines status
- Managing multiple variables and PS Modules in Azure automation account
- Keeping Wiki Portal up to date with frequently changing ARM templates
- Tracking of changes - Who, What, When, Where, and Why

Our solution

HCL partnered with the client to create a long-term CloudOps efficiency enhancement program through Azure DevOps automation. HCL provided a holistic approach to firm up the deployment process by following these steps:

- 1 Analyzed existing pipelines
- 2 Designed and created a prototype of an improved approach to consolidate multiple pipelines
- 3 Identified critical manual tasks across DevOps processes and provided automation solutions for each task - reducing errors, reducing maintenance, and speeding up the deployment process. We assessed all the manual tasks, identified three critical manual activities, and automated such activities for better maintenance and to accommodate changes quickly. The three activities were:
 1. Azure Automation Account - Update All PowerShell Modules to latest version and update Single PowerShell Module to a specific version
 2. Update ARM templates in Wiki (Archetypes)
 3. Update variables in the Azure automation account
- 4 Extended existing Azure DevOps pipelines to include quality check gates and approval process specific to each division
- 5 Assessed client's current DevOps maturity through our in-house EAze framework
- 6 Assessed all pipelines and provided a recommendation key DevOps metrics be captured across environments/pipelines to have better DevOps governance
- 7 Implemented custom DevOps dashboards showcasing all the metrics that we recommended across pipelines and environment

Technologies Used: Azure App Service, Azure DevOps, Azure SQL DB, Power BI, Visual Studio Market place

Business impact

- Significant improvement from a maintenance perspective as the number of pipelines came down from 300+ to 30+
- In line with Microsoft's recommendation to move away from classic pipelines
- Pipelines are easily portable to a different environment now, as the pipelines are maintained as code
- Enhanced automated provisioning pertaining to division-specific customization
- Unified dashboard with status of different features/pipelines in one screen
- Faster and clear traceability of changes across environments

