

The background of the top half of the page is a photograph of an offshore oil platform. The platform is a complex of yellow metal structures, including pipes, ladders, and support legs, situated in the middle of a calm blue sea. In the background, there are several white smokestacks and a red and white communication tower against a blue sky with light clouds.

## CASE STUDY

# ASSET LIFETIME EXTENDED WITH 15 YEARS AND 10% COSTS SAVED FOR OFFSHORE FACILITY

A global energy company that carries out activities across 30+ countries worldwide intended to extend the lifetime of one of their actively producing offshore facilities. The company produces oil and gas, downstream and upstream. They asked MaxGrip's experts to help with performing the assessment of extending the lifetime of an Asian offshore site in order to safeguard uninterrupted high asset performance.

## CHALLENGE: COST-EFFECTIVE LIFETIME EXTENSION

As the producing oil field was expected to be active for some time but the offshore facility was nearing its original design life, the major oil company was compelled to take action. From a cost-benefit perspective, replacing the offshore platform was not the most beneficial as it is not cost-effective enough. The company chose the less costly option of extending the lifetime of this offshore asset. MaxGrip was asked to identify and prioritize the best life extension actions to ensure that the facility can continue to operate safely and reliably beyond the original design life. In addition, we looked at modifications to improve the facility's technical integrity, uptime and production processes.

## SUMMARY

### CHALLENGE

As the producing oil field was expected to be active for some time but the offshore facility was nearing its original design life, the company wanted to extend the lifetime of this offshore asset.

### APPROACH

Integrated holistic asset life extension assessment, incl:

- Data collection
- Review and verification
- Hazards and critical barriers gap analysis
- Condition, risk and life extension assessment
- Cost-benefit analysis (CBA)
- Asset life extension deployment program

### RESULTS

- 10% cost reduction
- Asset lifetime extended with 15 years
- Safeguarded integrity of structural and pipeline assets
- Extend to other facilities

## APPROACH: HOLISTIC ASSET LIFE EXTENSION ASSESSMENT

MaxGrip has introduced an integrated holistic approach to ensure that the offshore facility can be extended for a period of time without compromising health, safety and environmental aspects:

### 1. Data collection

It starts with data collection from various life-cycle stage including: design data, fabrication & installation data, operation & production data, strengthening/ modification/ repair data, reliability & integrity related data, inspection/ maintenance data.

### 2. Review and verification

We performed a document review and data availability check. This also involved a verification session with the client’s technical workforce against data collected and performing at-site.

### 3. Hazards & critical barriers gap analysis

The identification of hazards and critical barriers is essential because they negatively affect the safety and performance of the assets. A gap analysis is performed in which the identified hazards and barriers are set against Safety Critical Equipment (SCE) and regulatory requirements.

### 4. Condition and risk assessment

The condition of the assets is assessed based on all historical inspection and maintenance records available. A risk assessment is then done in this stage, measured against current asset condition and asset performance.

### 5. Asset life extension assessment

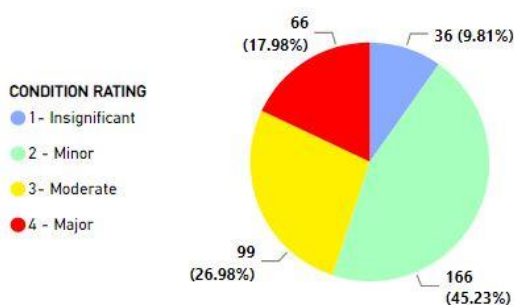
In this stage, MaxGrip experts evaluate the suitability of the asset to extend its planned life beyond its original design and also assess the ageing indicators related to the current asset performance.

### 6. Cost-benefit Analysis (CBA)

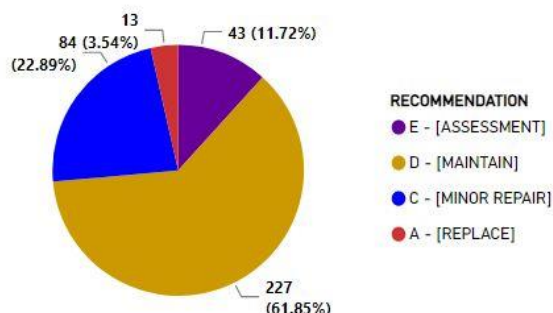
The assessment is measured against business goals and KPIs. We deliver a business case that is based on the defined life extension scenario at the beginning of the project. This will determine the viability of the asset lifetime extension goals.

### 7. Asset life extension program

If the business case has a positive outcome, we also develop the long-term asset life extension program based on the outcomes of the assessment.



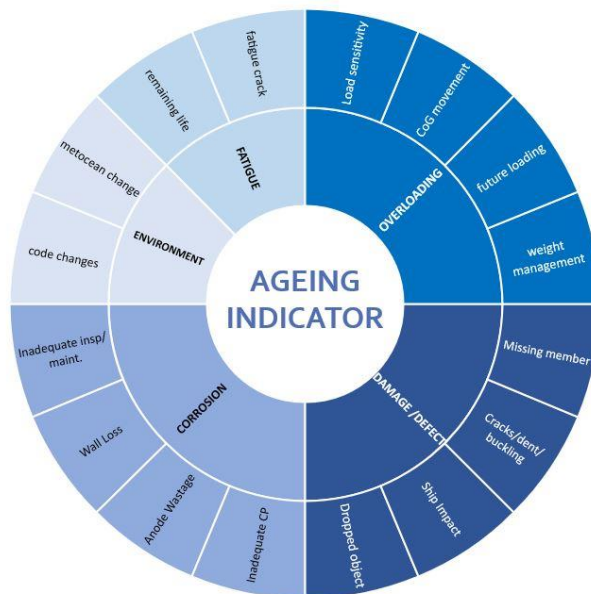
Findings from the condition assessment



## RESULTS: 10% COST SAVINGS AND 15 YEAR ASSET LIFE EXTENSION

Through our thorough assessment, we were able to demonstrate that the oil and gas operator can extend the asset life of this specific offshore site with fifteen years. We provided an integrated operational improvement program that safeguards the life of the offshore facility in the long term. This included the improved technical integrity of structural assets and pipeline assets. In addition, we realized 10% cost savings by minimizing unplanned shutdowns and reducing the time to repair, to maintain and to inspect.

We showed our practice leadership and technical capability with a detailed assessment, justified business case and complementary implementation plan. We have been given the trust to extend the asset life extension study to other facilities, with more platforms and various disciplines.



## ABOUT MAXGRIP

MaxGrip consultants enable organizations in asset-intensive industries to achieve continuous improvements on their asset performance, also using the power of Digital Transformation. MaxGrip embraces Industry 4.0 with an APM and maintenance track record of over twenty years in industries like Oil & Gas, Food & Beverages, FMCG and Utilities & Infrastructure. We operate on all continents and have a global presence with three main offices in the Netherlands (HQ), USA and Malaysia.

## GET IN TOUCH



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