

BP Chemicals, Indonesia

Productivity & Efficiency Optimization Project



“The AMIGOS Project was successful, and I can confirm that Renoir exceeded our expectations. Overall we are extremely pleased with the outcome in all areas. The Renoir team have fitted in very well at AMI, forming strong professional and personal relationships. I was most impressed by how they worked with AMI as an equal partner, which enabled the project to be such a success”

Frank Robertson
President & Director

Key Results

In project cumulative benefits of USD 3M

Annualised benefits exceeded USD 4M across all areas

Project ROI of 5:1

Improved planning accuracy of 98%

Output increased by 2%

20% reduction in total inventory value

In-project achievement of behavioural change targets

PT AMI was established in September 1997 with a tripartite joint venture between Amoco (now BP), Mitsui Chemical Inc. and Mitsui & Co. Ltd. producing PTA (purified terephthalic acid). Today, the company is owned by BP and is a leading PTA supplier to the South East Asian polyester industry. The plant runs with a total capacity of 480,000 tonnes per annum.

PTA is used primarily to produce polyethylene terephthalate (“polyester”), a versatile polymer used in a variety of applications. Polyester is used to manufacture textile fibre (clothing and home furnishing), industrial fibre (tyre and general rubber reinforcement) bottles (food, soft drinks and mineral water) and films (recording medium for audio and video tapes and as film in medical X-ray equipment).

ANALYSIS

The PTA market entered a period of over supply with multiple new units having started production from 2011 onwards and with most being built in China. To be successful in this environment it remains essential that manufactures are more productive and efficient.

Renoir was engaged to help BP Chemicals optimise Maintenance, Spare Part Storehouse and Production operations, areas which are crucial to ensuring the plant continues to perform at optimum levels.

The AMIGOS project – using the previous company name of AMI – was based around three core pillars of improvement:

- Cost Reduction – optimisation of spare parts inventory and reduction in contractor costs.
- Maintenance Focus – increase in planning accuracy, optimisation of manpower utilisation and increase speed (velocity) of execution.
- Operational Excellence – improved throughput from reduced production losses and increased plant reliability.

PROJECT APPROACH

The scope of the project revolved around 3 key areas of work across the company; Storehouse, Maintenance and Production.

Storehouse:

Initial data analysis of historical stock movement In SAP showed a ‘buy-to-consume’ trend. As purchase value was very similar to consumption value year on year, core inventory volumes become stagnant and Write-Off was used as the mechanism for reducing total inventory value. Two physical stock counts were completed to identify the current stock profile, which showed total inventory value and stock at hand quantities reported in SAP were not accurate. The gaps in the current control mechanisms had led to an unhealthy spare parts stock profile, with too much stock for items not needed and too little stock for items that are needed. This created the inherent risk of Plant reliability issues and increased cost from expedited spare parts.

In order to reconcile the differences between physical and SAP reported stock levels, it was crucial to get transparency over all inventory items. Once this was done, a write-up, write-off and replenishment program was set up with the Finance team to ensure the right stock levels were in the right place.

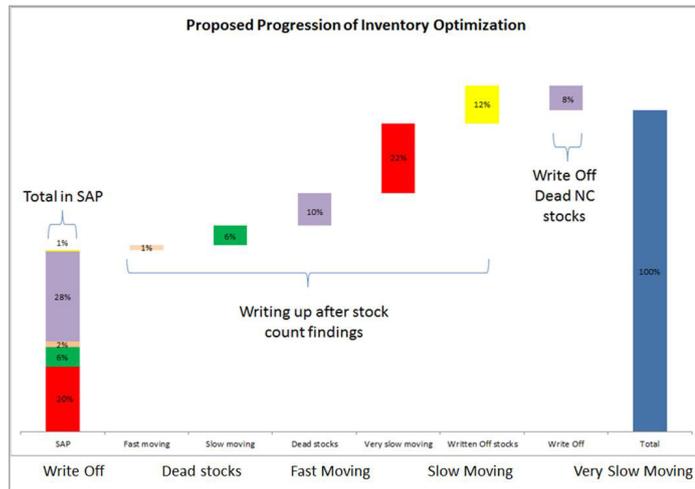
World Leaders in Sustainable Change

© Renoir Consulting Limited. This document remains the property of Renoir Consulting Limited and must not be copied or distributed in hardcopy or electronic form without the prior written approval of Renoir Consulting Limited.

THE RENOIR GROUP

Renoir Consulting is a world leader in sustainable, implemented change. Founded in 1994, Renoir has offices located in North and South America, UK, Europe, Turkey, Middle East, Southern Africa, India, Pakistan, China, South East Asia and Australasia. With over 300 fully employed and highly trained consultants, their work across a wide range of industry sectors gives them a broader perspective of the issues facing your business, allowing them to be sensitive to your unique challenges, culture and specific business issues. This cross-pollination ensures truly effective, rapid and sustainable solutions.

Visit Renoir at www.renoirgroup.com for more information and a complete list of regional contacts or send us an e-mail at: renoir.office@renoirgroup.com



Once inventory levels had been reconciled, a new storehouse management control system was put in place to ensure the inventory health profile could be optimised. With correct Min/Max levels in place, Excess stock was identified and purchases blocked in SAP to the value of USD 2.1 million. This cost avoidance will

continue until the correct reorder point is reached and a PO is triggered.

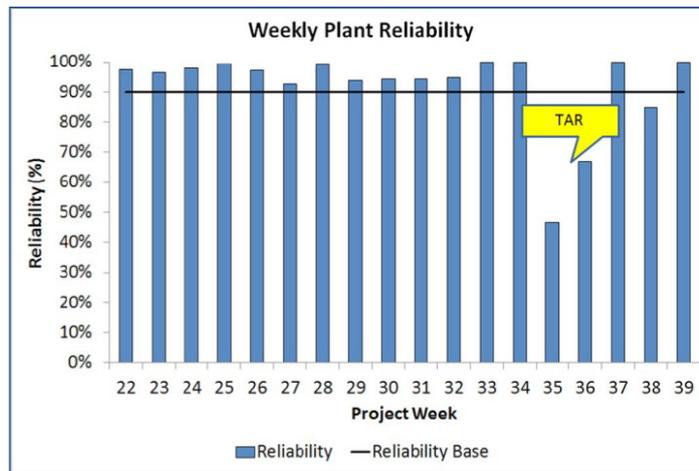
Maintenance:

At the start of the project, BP Chemicals Management was concerned about Maintenance within their Indonesian affiliate. Cost overruns and the poor ratio of corrective to preventive and predictive (58% vs 42%) meant overall the maintenance area was felt to be "out of control".

To improve Maintenance Efficiency, a new planning and productivity system was put in place, increasing job transparency for planners and enabling supervisors to spend more time in the Plant completing Management By Walking Around (MBWA). The new planning and execution process has been supported by relevant and cascaded down new operational KPI's.

The improvements in daily Maintenance work were then transferred into Turn Around (TAR) preparation and execution. Focus was put on managing the critical path, measuring velocity of individual work orders and organising materials, equipment and manpower for individual jobs.

The dramatic improvements in maintenance have resulted in plant reliability increasing from 90% to over 96%.



Production:

Improvements in Maintenance and Storehouse have provided the Production team with a more reliable platform from which to run the plant. However, improved transparency and control over daily Plant operations have resulted in more throughput from absolute MT gains.

Since project Implementation started, the average monthly production profile shows that Availability and Performance losses have reduced against the Base. This is because gross production volume has consistently achieved almost 100% of Available Load Production, a big improvement when compared to the Base of 96%. This improved consistency shows that the Plant is consciously being managed in a more controlled manner, which is resulting in an improved operating performance.

World Leaders in Sustainable Change

© Renoir Consulting Limited. This document remains the property of Renoir Consulting Limited and must not be copied or distributed in hardcopy or electronic form without the prior written approval of Renoir Consulting Limited.