

## Reverse Supply Chain Solution for Process Industries

Our Reverse Supply Chain solution, Alchemy™ offers customers an opportunity to intelligently redeploy and re-use materials and optimise inventory management within their overall supply chain.

Our flexible processes and attention to detail create solutions that help clients reduce costs, increase returns, and drive overall revenue. Our solution is competitive, sustainable, and scalable in virtually any environment or geography.

Our focus is to improve your Reverse Supply Chain processes, increase overall efficiencies, reduce operational costs, and improve revenue streams while ensuring compliance with environmental and audit regulations such as SOX. The achievement of these goals provides companies with significant competitive advantages.

### Cost Implications

The overall cost of product and scrap material returns to manufacturers has become staggering. The Aberdeen Group estimates that high-tech companies alone spend approximately 8% of revenue just to manage their reverse logistics function. For the Process Manufacturing industry we have no concrete figures, but According to Devangshu Dutta, Director of a supply chain solutions company, "nearly 20% of everything that is sold in America is returned". With these costs adding to overall operating expenses, how can an organization uncover hidden value from material returns – and recover bottom-line revenue from scrap?

### Why Alchemy for Process Manufacturing Enterprise?

For most organizations, materials are returned through the reverse logistics function – whether they are product

returns, damaged goods or warehouse returns. In most instances, the reverse logistics model employed is designed to minimize costs, allowing materials to accumulate over time and eventually be disposed of in an environmentally friendly manner or at the very least in an environmentally compliant manner.

For the Process Manufacturing industry the process of recovering value from returned products can be significantly improved with a timely inspection process designed to identify hidden value before scrapping. Unfortunately for many firms, scrap material already sent for disposal could have become a new revenue stream. In fact we have also found that materials that were designated as second-grade, could also have generated more revenue if they had been reworked.

In addition, with our data module, analysis over time of the most cost effective pathways is developed, providing real insight that can feed strategic decision making when looking at total cost of goods.

### How does Alchemy work?

Alchemy is a solution that has generic approach that has been developed over years of experience in the Supply chain World. It is however, customer driven: we look at your processes; work with your experts to learn how to most optimally apply Alchemy to your processes.

Alchemy is a process based system, which will generate a clear workflow for your people, offering them only

relevant data to focus on at any one time.

Alchemy will incorporate business rules that we develop with the customer to help automatically monitor inventory status and offer a health dashboard.

### Alchemy and your Systems

Our development team for reverse supply chain management reviews a technology-driven organisation's current reverse logistics practices to help develop and introduce a comprehensive inspection process and best-practice model that can help your organisation review returned materials and make the correct decisions to generate revenue and reduce inventory.

Alchemy is ERP system neutral, we can link into any data-sources and drive out the value that is hidden within your current applications. It is also portable, so you can apply the same model through mergers and acquisitions, driving immediate benefit from these opportunities.

If you're wrestling with the high costs of managing your current distressed inventory and reverse supply chain function and would like to implement best-practice methods to recover lost revenue from your reverse supply chain, contact us.

## Alchemy Modules

We have developed four specific modules that can be added and combined to achieve optimal value as and when you need them for the following functions

- **Transform**  
Distressed inventory re-use/remanufacturing
- **Elixir**  
Aging Inventory Monitoring and use optimisation
- **Alum**  
Second Grade Evaluation
- **Petra**  
Information Discovery, Analysis and Value

It may be that you already have activities in these areas, and Alchemy has the ability to support and enhance these activities, as well as making the information involved much more manageable.

## Alchemy Transform: returned inventory re-use

Transform will optimise the consumption of returned inventories in a way that cannot be easily done in ERP systems. It will generate value by streamlining the re-use opportunities, and make the whole task much easier for the users. In addition it will provide important business data for informed strategic decisions.

## Why do you need Transform?

This module will allow Rework Options to be allocated to materials or batches, depending on the underlying product complexity. We then can make recommendations for the re-use opportunities that exist. It tracks changes in all the variables, and informs the user if opportunities are

missed and for what reason. Re-use, Re-work, Re-manufacturing, whatever we call it, can be very complex in ERP systems as it impact on so many other work-streams. These systems were inherently not designed to deal with this 'negative' flow.

Transform will manage many of the extra data requirements and/or link into existing data structures, to allow the proper management of the reverse flow. In fact the Transform application also has it's own Reverse flow to allow users to step backwards through the Reverse Supply Chain workflow, in case of user error.

## Alchemy Elixir: aging inventory monitoring

Aging materials use can be further optimised by Alchemy's custom monitoring of the aging inventory. This supports and compliments built-in aging methods, but enhances the efficiencies by offering the user a single workspace to manage the flows and monitor the use easily.

## Why do you need Elixir?

This module will pro-actively help your organisation monitor up-coming aging issues, and recommend testing schedules if applicable, and recommend consumption opportunities. It can also link into purchasing modules to manage the monitoring of impacted purchasing records, so that incoming orders can be modified in a timely way.

Most ERP systems have aging inventory modules, but they do not link directly to opportunities, so that we can reduce and optimise retesting, and also reduce the impact on the

purchasing departments. Alchemy Elixir does this.

## Alchemy Alum: Second Grade evaluation

Identifying the best alternative uses for a material that does not match the original target specification is a challenge for many companies. So much so, that they see little advantage in spending time on the task.

## Why do you need Alum?

We determine second grade materials as products that are not within the target specification, but could be used in another way, or are acceptable to another customer.

Working with customers who have used 'dumping' strategies for second grade materials, which often barely cover cost, prompted us to look at this in another way and try to generate value from the task.

We found that by engaging with the sales force, we could help them find extra sales by being more proactive with stock that could still be used.

This is a process that requires direct input from your sales people to identify the potential clients and also the potential uses for the second grade materials.

It is akin to oil extraction, certain sources can only be exploited when conditions are right. So in this way, we construct algorithms that will help you people make best use of second grade stock.

We can work with your sales departments to develop a second grade allocation function, so that we can determine the best Second Grade sales opportunities. This is the most customised part of the application, as it relies on specific customer

relationships and requirements to be monitored.

Contact us for special consultation.

### **Alchemy Petra: Information Discovery and Value Module**

Petra works by using the data from other modules to leverage your ROI from returned inventories. It looks at the overall cost of goods sold for each re-use or disposal pathway, and reports on the optimum use going forward. It can even be set up to prompt the user of the best choices.

### **Why do you need Petra?**

This extra module that can be added to the suite, which will allow you to draw in-depth understanding of savings made and value created depending on the choices made. It will take data from each module and compare it to give a dashboard overview of the overall processes. Finally, tying-in with your ERP product costing, it allows more strategic decisions to be made regarding the overall Reverse Supply Chain strategy.

In addition, this data and information can be used to drive other Lean, Six Sigma and other Quality Improvement Projects in your organisation.

### **Alchemy Markets**

Alchemy can be applied in many different markets that are involved in process manufacturing. Indeed it is specifically designed to work in the management of materials that cannot be componentised in the standard way.

### **Biotechnology**

Industry that is concerned with the application of knowledge about living

organisms and their components to industrial products and processes.

### **Chemical Industry**

Manufacture of pharmaceuticals, paints, toiletries, varnishes, plastics, synthetic rubber and industrial gases.

### **Food and Beverages**

Manufacture of all food and drink including bakery, dairy, meat and poultry.

### **Tobacco**

Manufacture of all tobacco and tobacco-related products.

### **Metals and Engineered Metal Products**

Production, processing and distribution of ferrous and non-ferrous metals, including the recycling of the materials at the end of their useful life.

### **Pharmaceuticals**

Production of everything from antibiotics to the contraceptive pill. Development of products that treat common and life-threatening illnesses and ailments.

### **Polymers**

Four discrete process areas: plastics processing; rubber processing; polymer composite processing; and sign making.

### **Other Process Manufacturing**

Production of building products, coatings, extractives, glass, printing and paper and furniture.

## strategy people performance

Penumbra is a strategic business consultancy. We bring clarity by using research to drive understanding and direction. We deliver success by balancing experience and innovative thinking.

Whatever your aspiration, we'll provide the tools, information and analysis to turn your strategy into operational reality, in a way that motivates your people to outperform the market.

### Overview

Our expertise lies in helping our clients to execute robust strategies and deliver results.

We achieve this by combining a robust management planning system with a focus on people which drives alignment and commitment

We work in partnership with talented and committed leadership teams to help organisations build corporate value with a wide range of customised, cross-functional advisory programmes and services delivered from four complementary service groups:

### Strategy

(Development, formulation, implementation and alignment)

Our innovative **Penumbra Balance** approach creates dynamism, drives and sustains momentum and makes strategy real for stakeholders

### Organisational Development

(Behavioural issues)

We call our holistic approach **Balanced Motivation** which encompasses activities that improve performance both for the organisation and the individual

### Research and Insight

Our stimulating **Clarity** approach draws on our business consulting skills to deliver a mix of business analysis and market research which provides compelling insights for winning decisions.

### Operations

The Operations group brings all of our hands-on practical experience to bear on execution and delivery of results.

Our technology enabling approach called **Totality** facilitates business focussed services and solutions, aligned to business needs, for people, processes and tools.

### Why Us?

Organisations turn to us when they:

- Want to find a new strategic direction
- Have created a strategy and now need to execute it
- Need to drive more value from existing initiatives
- Have a big issue to resolve, usually dependent on lasting employee buy-in
- Need to explore new ways to drive value
- Need a breakthrough result
- Are seeking measurable results

### Our Experience

We have real world experience spanning 20 years with our clients. This includes working with:

BP, Citibank, Morgan Chase, WestLB, RBS, UBS, Bankers Trust, Kleinwort Benson, Coutts, Natwest, Intel, Nokia, Adobe, Kall-Kwik, Glaxo Smith Kline, Dupont, Pfizer, Savills, British Council, Clifford Chance, British Airways, Gillette, Unilever, Shell, Volvo,

Vauxhall, British Gas, TradeStation, MWB Business Exchange, Investors in People, University of Cambridge

On projects such as:

Strategic Planning, Strategy development and implementation, Culture change, Post-Merger Integration, Vision, Purpose and Values, Current State Analysis, Organisation Re-design, Transformational Change, Client Focus Strategies, Perception Studies, Client and Staff Engagement surveys, Global Rebranding, Know your Customer, Market Forecasting, Consumer Insight, Market Segmentation, Process optimisation, Lean/Six Sigma, Project Management, ERP Systems Roll-out, Market Research, Financial Modelling, Franchise Start-up Evaluation models, Cost Benefit Analysis, Implementation Alignment, Strategic Alignment, Complex Database development, Custom Application development, Supply Chain Optimisation

Covering diverse sectors such as:

Financial Services, Pharmaceuticals, Manufacturing, Energy, Mobile Telecoms, Travel and Tourism, Aviation, Property, Hi-tech and Business Services