



CLEARWATER CONSULTING PARTNERS

MISSION

At Clearwater Consulting Partners our mission is to assist our clients in making positive, lasting and substantial improvements in the performance of their assets.

We have the insights, people and tools to offer objective analyses and robust solutions to various business problems for companies engaged in the pulp and paper, and wood-processing industries, governments, financial institutions, investors, lenders and sector organisations.

Our technical, engineering, marketing and operational services cover the whole supply chain, from raw material supply to end-use markets, through an in-depth knowledge of manufacturing processes, technologies and industry economics with a focus on productivity improvement both in terms of operations and in capital utilization.

Resource, Energy and Environmental Management

Clearwater provides analyses pertaining to resource supply, demand, cost, and end-use; regional comparisons; analyses of regulatory environment; audits and benchmarking of forest, and environmental management practices; environmental impact assessment; development of resource management and master plans; development of corporate strategies for sustainable development and, policy advice on sustainable development.

Marketing and Product Management Services

To get the full potential that marketing and innovation can offer, the marketing function must become more strategic, cross-functional and focused on the bottom line. Clearwater not only provides market analyses and market research services, we also provide rationalization and optimisation of existing product-mix, product and manufacturing process design, process and product trial management.

Mill Optimisation and Development

Clearwater offers mill optimisation services, which are designed to assess current and future mill competitive position and formulate plans, which will maximize the short-term and long-term value of existing mills. Services include performance audits, benchmarking, optimisation programs and long term development plans for existing assets and mills. Operations, maintenance, and plant management assistance are also provided.

Technology Management

Through our strong base of process technology specialists, Clearwater provides assistance in R&D activity planning, technology assessment and selection, process



design, strategic alliance/technology transfer assistance and technological risk management. Process areas covered include: material handling, mechanical and chemical pulping, bleaching, de-inking and recycled fibre, papermaking, energy and utilities, lumber and panel manufacturing.

Investment Analysis

Clearwater is sensitive to capital productivity and provides support in helping clients to make the optimum investment decision. Services include opportunity and feasibility assessments; due diligence; asset valuations; business plan development; financial analysis and planning; lender's consultant; owner's engineer; strategic alliance identification, as well as economic and sector studies.

Tools & Concepts

Clearwater's capabilities emanate from the strong expertise and analytical skills of our team, our international network of partners, and our information base on products/markets, raw materials, existing capacity and the various process areas.

We have customized our consulting approach through various in-house analytical models in the areas of transportation logistics, mass and energy balances, furnish optimisation, capital cost estimating, manufacturing cost estimating, and cost benchmarking.

ENGINEERING

Business Approach

While delivering cost competitive services, Clearwater continues to focus on the quality and reliability of its engineering.

Our engineering disciplines continually improve:

- engineering quality (standards, tools, methodologies, procedures, inter-departmental communication)
- engineering resources (stringent recruiting and training)
- engineering efficiency (tasks & functions)

Our project managers focus on:

- project performance
- project budget
- project schedule
- client interaction and communication

Disciplines

Engineering:

- Process & Chemical
- Mechanical & Piping



- Electrical / Instrumentation / Automation
- Water & Utilities

Project Management / Services:

- Project Directors / Managers / Engineers
- Estimating
- Safety Engineering & Management
- Cost Control
- Scheduling
- Procurement
- Expediting / Inspection

Technical Specialties

Forest Products:

- Material Handling
- Mechanical Pulping
- Chemical Pulping
- De-inking & Recycled Fibre
- Paper & Board Mills
- Tissue Mills

Power, Utilities & Environment:

- Steam, Power & Cogeneration
- Water & Effluent Treatment
- Air Pollution Abatement

Tools & Systems

Computer Systems:

- Windows XP / Vista networked systems
- Networked desktop and laptop PCs
- CAD + scanning + plotting

In-house software:

- "CLEAR-Sim" in-house dynamic process modelling
- Customized "CLEAR-Sim" Heat & Energy Simulation
- Real-time virtual machine simulation
- Data mining and neural network analysis

Project Management Systems:

- Microsoft Project
- Customized Estimating Database
- Customized Cost Control System
- Customized Document Management System



OWNERS ENGINEER

Business Approach

Heavy industrial projects, whether utilities or forest products, are more and more capital intensive. While the capital intensity in itself makes generating satisfactory returns on investment challenging, it may lead to industry behaviours that are detrimental. One of the effects of the capital intensity is the avoidance of risks as the cost of failure is enormous.

The fear of failure may breed:

- Risk aversion and discourage technology and market innovation
- Over-engineered design, excessive contingencies, and incorporation of unnecessary flexibility and redundancy

Clearwater understands the challenges associated to capital intensity and offers experienced services to EPC projects.

Above all, Clearwater works as a partner of the Client, usually embedded within the Client's own organisation, as the "Owner's Engineer". This, we believe, offers the optimum means of achieving a win-win situation based on like-minded partners pulling together in the same direction.

Services

To help our Clients manage their project risks, Clearwater offers the following services:

- Project management
- Cost control
- Engineering
- Procurement assistance
- Construction
- Commissioning
- Start-up

Clearwater supports the early development phases of projects through its Consulting service line. Working relationships and partnerships with some of the world leaders in pulp and paper technologies and equipment mean that Clearwater can offer full EPC capability in conjunction with these substantial and prestigious organisations.

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