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KSH CONSULTING
A CONSULTING CONCEPT

**BENCHMARKING OF
COMPETITIVE POSITION**

KSH
Consulting



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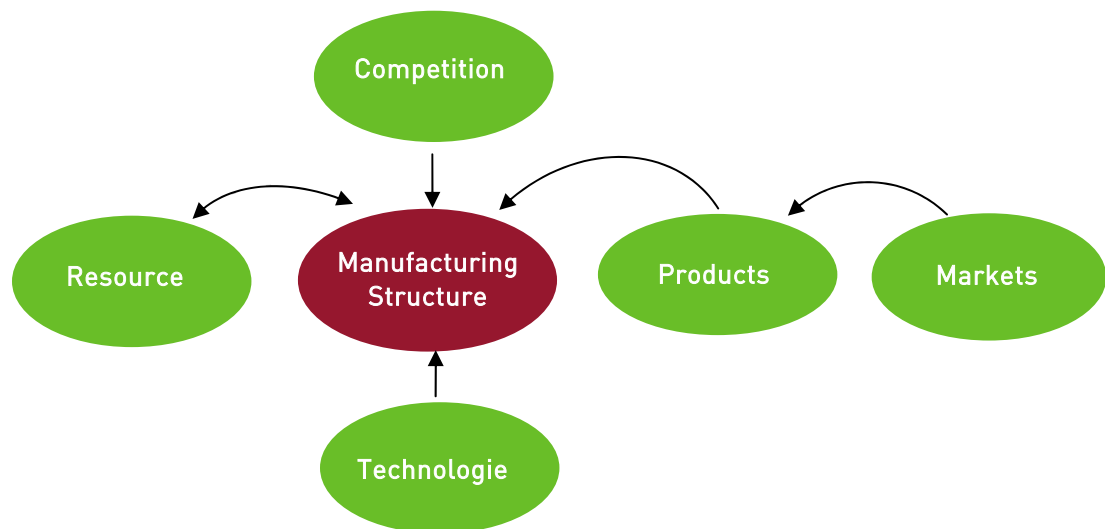


BACKGROUND

Global paper and paperboard production capacity reached 327 million tonnes in 2000. This capacity is growing at a pace of roughly 3% per year. Approximately 1 to 1.5% of this growth comes from creep production, meaning that the existing capacity is continuously optimised.

This production capacity is spread over the world as follows: North America 32%, Asia 30%, Western Europe 26%, Latin America 5%, Eastern Europe 4%, others 3%. The profile of the manufacturing capacity in each region has been shaped over the years by various driving forces (Figure 1). The most important driver is the regional market demand followed by the resource base.

Figure 1
Drivers of Regional Manufacturing Structure

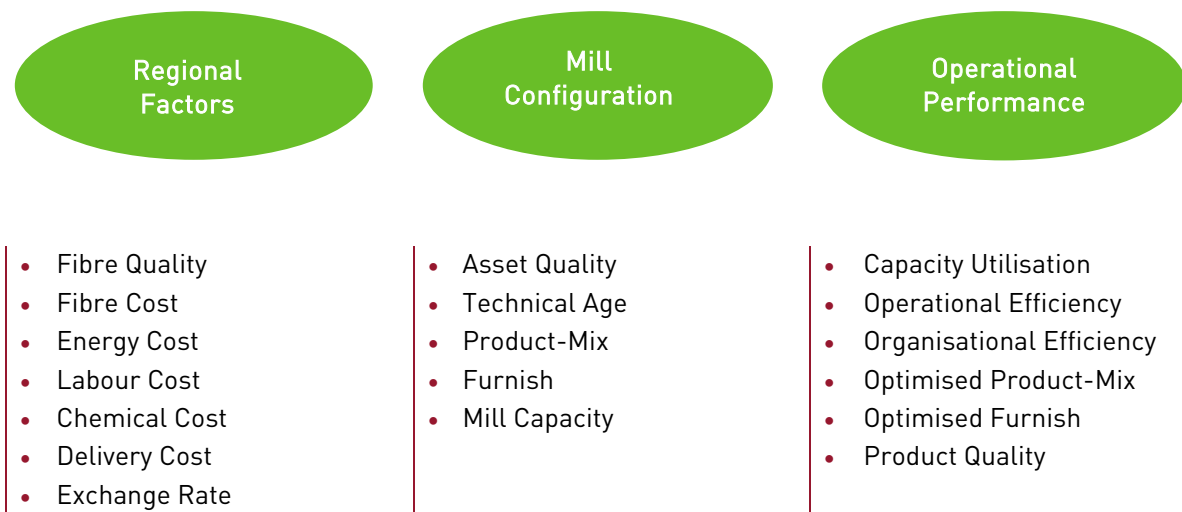


After a decade of poor financial performance, paper companies' executives focus today on building value instead of building assets. To be a value creator, the return on capital employed (ROCE) of a specific asset must exceed the weighed average cost of capital of the company. To achieve that in a commodity-based capital intensive industry, the asset performance must be fully maximised. Since the driving forces depicted in Figure 1 are continuously in action, companies need to monitor their competitive position and make proactive strategic and tactical decisions to maintain and improve their profitability.



As depicted in Figure 2, three main drivers that can impact cost performance are: regional factors, mill configuration and operational performance. Regional factors typically determine 15% to 25% of the cost variability between different operations. However, a company has little control on it since it is driven by the plant location. The biggest driver of cost performance is the mill configuration, which typically accounts for more than 50% of mill-to-mill differences. Operational performance is typically the smallest cost determinant. However, it is the only cost factor that can be managed and improved on the short-term since the mill location and configuration are largely determined at the time of initial investment and cannot be easily changed.

Figure 2
Drivers of Cost Performance



The cost competitiveness of a mill generally deteriorates over time due to technological advancements at newer mills and increasing maintenance costs. To assist paper manufacturers in monitoring their competitive position and make practical strategic decisions, KSH Consulting has developed a series of cash manufacturing cost analysis for three main paper categories:

- Newsprint.
- Uncoated groundwood papers such as Supercalendered papers (SC papers) and Directory papers.
- Coated groundwood papers (No. 4 and No. 5).



The geographic scope of the analysis study is in North America but mills from other regions of the world (i.e. Europe, Latin America and Asia) can also be added for comparison purposes.

OBJECTIVES

The main objectives of these competitive cash cost analyses, which provide a detailed competitive comparison of the cash costs of each individual mill producing a specific grade of paper are as follows:

- ✔ to allow mill's management to assess its competitive position;
- ✔ to provide an understanding of the cost structure of specific segments of the paper industry such as the cost differential between the low and high cost mills, regional comparisons and a benchmark for various cost components;
- ✔ to provide a tool to assess paper price development during the period of low versus high demand;
- ✔ to provide a tool to assess the impact of potential repositioning strategies on a mill's competitive position; and
- ✔ to provide a tool for sensitivity analysis of changes in exchange rates, wood cost, pulp cost, electrical power rate etc. in various regions.

SCOPE

Description of Cash Cost

KSH uses a relatively accurate method of estimating cash costs based on an analysis of an individual facility. The methodology, which is explained in more detail below, has been developed over the years.

- ✔ Cash costs are defined as "out-of-pocket" costs associated with producing a product. The mill-level cost estimates of fibre, chemicals, energy, labour, materials and other consumable are compiled to produce an industry cost curve, a visual cost ranking of the different mills within a specific sector.
- ✔ Depreciation, interest costs, taxes, insurance and selling and corporate administrative costs are not included in cash costs. These costs are not included, because depending on the corporate policy, they may substantially vary from mill to mill.
- ✔ Delivery costs are included in order to provide a cost curve on delivered cost basis.



Time Basis

In order for the cash costs curve to be meaningful, it has to be presented as a “snap shot” in time because unit costs for different elements such as purchased pulps, fuel, electricity, chemicals etc. are usually changing with time and across different regions. In addition, exchange rates between different countries can change dramatically from year to year. Therefore, in order to be consistent, all cost information has to be collected within a certain time frame and has to be relevant to a specific period.

Concept for Estimating Cash Costs

Basically, a “box” is created around the mill facility and all inputs and outputs across this box are estimated (Figure 3)

Units of production are first estimated based on capacity and efficiency of individual machines in the mill. The model can take into account the grade breakdown for a swing machine (machine producing two or more grades).

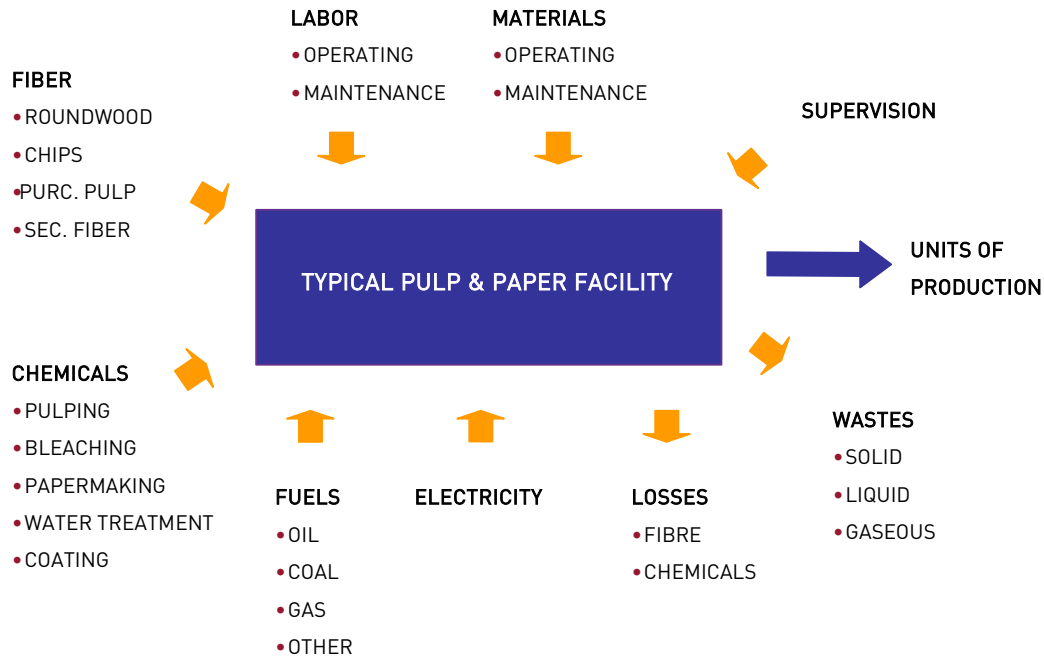
Units of consumption are determined by completing simple mass and energy balances based on units of production as the different pulping and papermaking processes unique to each mill are taken into account.

Cash for each expense category are then calculated by multiplying the unit consumption by the unit costs. The unit costs are generally estimated on a regional basis. A total cash cost is obtained by summing up all the expense categories.

Once the cash cost of each mill and machine is estimated, each mill is ranked on a curve as per its capacity and cost. The result is an industry curve that highlights the evolution of successive manufacturing costs against the cumulative capacity. A sample is shown in Appendix 1.



Figure 3
Concept for Estimating Cash Costs



COMPANY PROFILE

General

KSH Solutions Inc. (KSH) is a Canadian consulting, engineering and EPCM services company, founded in 1923 in Montreal, having global reach and extensive experience in the pulp and paper and forest sector. Operating world-wide, KSH has the skills, experience and organisation needed to assist clients improve their asset performance and to develop and execute capital projects of all sizes and complexities, with its consulting, engineering and construction management expertise. In addition, with its European partner and key shareholder, MAN Ferrostaal in Germany, KSH offers its clients the ability to implement their projects under a turnkey / EPC contract customized to the clients' needs.

Built from its long history and strong presence in North America, KSH has expanded its capabilities by providing expertise and services on projects in Europe, Asia, Australia and South America, giving the company a global perspective, as well as the knowledge, track record, and ability to execute projects anywhere in the world.



The entire group provides access to a vast network of resources and offices giving KSH the support to evaluate, undertake and execute projects anywhere in the world.

KSH Consulting

KSH Consulting is the consulting arm of KSH Solutions Inc.. Our mission is to assist clients make positive, lasting and substantial improvements in their performance.

We have the global insights, consultants and tools to offer objective and sound 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 integrated services cover the whole supply chain, from raw material to end-use markets, and focus particularly on the following areas:

- ✔ **Resource, Energy and Environmental Management:** studies pertaining to resource supply, demand, cost and end-use; regional resource comparisons; audits and benchmarking of forest, environmental and energy management practices; development of corporate strategies for sustainable development; development of regional resource management and master plans; and government policy advice on sustainable developments.
- ✔ **Product Management:** rationalisation and optimisation of existing product-mix; product and manufacturing process design; process and product trail management and product launch assistance.
- ✔ **Marketing:** market analyses, market research , development of marketing plans and market launch strategies, customer satisfaction studies and introduction to key buyers.
- ✔ **Logistics:** distribution logistics planning and optimisation.
- ✔ **Mill Development:** performance audits, benchmarking, optimisation programs and long term development plans for existing assets and mills. Operations, maintenance, and plant management assistance.
- ✔ **Technology Management:** assistance in R&D activity planning, technology assessment and selection, strategic alliance/technology transfer assistance and technological risk management.
- ✔ **Investment Analysis:** opportunity and feasibility assessments, due diligence, asset valuations, business plan development, financial analysis and planning, lender's consultant, owner's consultant, strategic alliance identification, as well as economic and sector studies.



KSH Consulting has acquired strong expertise in consulting and strategic planning in the forest product industry with numerous completed studies. Some relevant mill development studies involving KSH Consulting team members are described below.

TOOLS AND MODELS

In addition to our global insights, analytical skills, database and cash cost model, KSH Consulting has access to various models to support its analytical process and customers. Some of the models that are used are as follows:

- ✔ Distribution Logistics Optimisation.
- ✔ Financial Model.
- ✔ Furnish Optimisation Model.
- ✔ Conceptual Cost Estimating.
- ✔ Cash Cost Curves.
- ✔ Econometric Modelling.
- ✔ Mass & Energy Balance.

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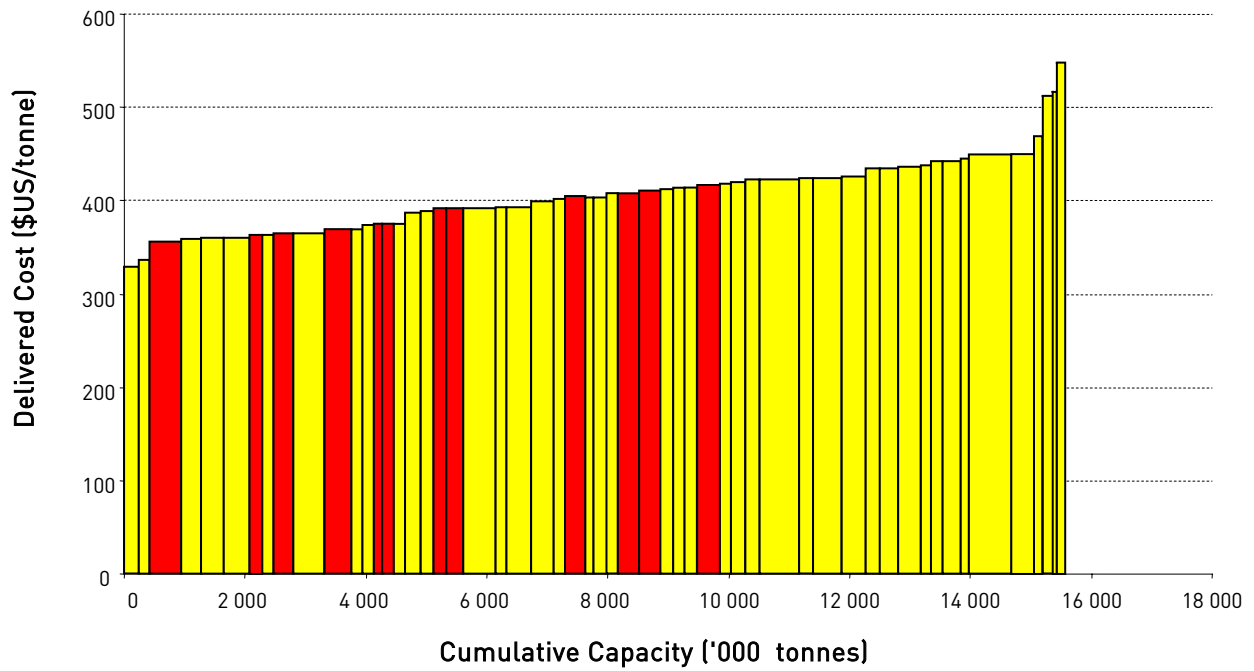
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Appendix 1
2001 North American Newsprint Cost of Supply Curve



Source : KSH Consulting.