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2nd international pulp symposium

Brussels, Belgium
11-13 May, 1981

program

Program Notes for the

2nd International Pulp Symposium

11-13 May 1981
Hilton Hotel
Brussel, Belgium

Organized by
Pulp & Paper International

Program of Symposium Sessions

(Each presentation will be followed by a discussion period of 10 minutes)

MONDAY, 11 MAY

09:15 **Opening of the Symposium**
Leonard Haas, Symposium Chairman, PPI

09:30 **Keynote Address**
Dr. Giovanni Fabbri, President of Consorzio FaBoCart SpA, Italy and Chairman of CEPAC, Belgium.

(Coffee break)

10:30 **SESSION I: Demand for Market Pulp**
Session Chairman: Robert D. Baldwin

Demand for market pulp in the '80s – An overview
Robert D. Baldwin, Gottesman & Co.

Demand for market pulp in Western Europe
Dr. Roger Grant, Reed International Consultants Ltd.

Demand for market pulp in the USA
Gerard E. Veneman, Nekoosa Papers Inc.

12:15 **Lunch**

14:15 **Demand in Japan**
Japan Paper Association. (Hiroshi Katoh, of Mitsubishi Paper Co. unable to attend the symposium. Paper to be given by PPI editor).

Demand for market pulp in South Korea and the Republic of China
Dr. Ho Sun Yoo, Myungji University

(Coffee break)

Other papers related to market pulp trends

Financial aspects of market pulp sales
John A. Quitter, Citibank

TUESDAY, 12 MAY

09:00 **SESSION II: Supply of Market Pulp**
Session Chairman: W.H. Vaughan

Supply of market pulp – An overview
W.H. Vaughan, Canadian Cellulose Co. Ltd.

Supply of market pulp from Sweden
Karl-Fredrik Gustafsson, Södra Skogsägarna AB

Supply of market pulp from Finland
Timo Teräs, Finncell

(Coffee break)

Supply of market pulp from USA
Dr. Ronald J. Slinn, American Paper Institute

Supply of market pulp from Canada
Karel M. Jegr, Sandwell Management Consultants Ltd.

Supply of market pulp from Brazil
Abilio Dos Santos, Brazilian Woodpulp Exporters' Assn. & Celulose Nipo-Brasileira SA (CENIBRA)

12:15 **Lunch**

14:15 **Supply from USSR**
Roland Sopko, Dirosab

Other papers related to market pulp trends

Wastepaper trends in the Common Market
Dr. Georg Holzhey, Haindl Papier GmbH

(Coffee break)

The cost of building pulp mills as a factor in future growth
Eric Ehrnrooth, Jaakko Pöyry International Oy

The energy impact in pulp production
E. Norman Westerberg, Ekono Oy

WEDNESDAY, 13 MAY

09:00 **SESSION III – Evolution in the furnish for papermaking**
Session Chairman: Ian F. Hendry, Wiggins Teape Ltd.
Panel papers

The mixture of eucalyptus and pine pulps for paper
Silvia Bugajer, Technical Center in Pulp & Paper (CTCP/IPT)

Experience with Eucalyptus Woodpulp at Celupal Fine Paper Mill
Louis Lhoest, Celupal

100 % eucalyptus paper – Mill experiences
Ovidio S. Sallada, Industrias de Papel Simao S/A

Outlook on market pulp developments and technology
Wulfdietrich Peltz, Feldmühle AG

(Coffee break)

100 % eucalyptus in high speed machines
Roberto Leonardos, Suzano Feffer Group

10:30 **Open discussion**

11:30 **Conference closes.**

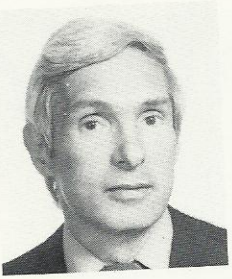
Presentations from the Floor

Monday, 11 May – SESSION I

15:15 **Present and future of cellulosic film industry**
Frans C. Lemaire, UCB Group

15:25 **Outlook for chemical cellulose demand**
Dr. George B. Creamer, ITT Rayonier Inc.

Symposium Organizers



Symposium Chairman
Leonard Haas
Editor & Publisher, PPI
Brussels, Belgium

Symposium Co-ordinator
Suzy Levy
PPI, Brussels

Manager of Business Development
John Kalish
Executive Editor PPI
Brussels, Belgium

Speakers and Abstracts

Keynote address

Industry Politics and Finance in the Pulp and Paper Sector

By Giovanni Fabbri, President of Consorzio FaBoCart SpA, Italy
and Chairman of CEPAC, Brussels, Belgium

Biography: Giovanni Fabbri is chairman of the European Confederation of Pulp, Paper and Board Industries (CEPAC), and president of the FaBoCart Consortium in Milan, Italy.

FaBoCart handles the management and services to various controlled paper companies in Italy with a combined capacity of 1,600,000 tons/year of paper and a turnover of some US$ 1,300 million.

Born in Milan in 1920, Giovanni Fabbri obtained a degree in medecine in 1945. The following year he and his younger brother established a publishing company, Fratelli Fabbri Editori, which by 1959 had expanded to one of Europe's leading publishing houses, with some 2,000 employees and an additional 1,200 people in sales. The firm's color offset printing plant, built in 1959, became the largest such operation in continental Europe.

A year earlier, the company launched a new kind of cultural, low-priced publication available on the newstands on a weekly basis. In a very short period this concept received universal recognition and was being offered throughout the world in 20 different languages.

In 1970 Dr. Fabbri relinquished the control of Fratelli Fabbri Editori and along with Carlo Bonelli, purchased the entire operation of Cartiere del Sole, a coated printing paper mill at Sora, built by the publishing firm in 1963. This mill then became the building block for the FaBoCart group of companies.

Within a few years some of Italy's leading paper mills were added to the group, including Nuova Cartiera della Valtellina, Cartiera di Arbatax, Cartiere del Timavo and Cartiera di Avezzano. Control of Cartiere Burgo followed in 1977, and Cartiera di Rovereto in 1978 and the CRDM and CIR groups in 1979.

Over a decade ago Dr. Fabbri stressed that the Italian paper industry was disadvantaged by a lack of raw materials, and he outlined a program of reforestation for the production of pulpwood. In line with this conviction he carried out a major reforestation project in Sardinia and submitted a proposal to the government for the development of forests in central and south Italy. Last year, after the experience of ten years of planting (Pinus radiata) in Sardinia he proposed a new 'Timber Plan' to the government which could supply Italian paper mills with their entire pulp needs in a relatively short period of time.

Dr. Fabbri has received numerous honors including the Gold Medal for Merit from the municipality of Milan, the Grand Cross of the Order of Merit of the Italian Republic, an «Honoris Causa» degree in Economic Science from Padua University, and the title Cavaliere del Lavoro from the State. In 1979 he was named Honorary Consul General of Finland.

In addition to this positions at CEPAC and FaBoCart, Dr. Fabbri is a director of the Banca Commerciale Italiana and La Centrale Finanziaria Generale. He is also honorary chairman of the Gruppo Editoriale Fabbri.

Session I: Demand for Market Pulp

Session Chairman

Demand for Market Pulp in the '80s – An Overview

By Robert D. Baldwin, Senior Vice President
Gottesman & Co. Inc., New York, USA

Biography: Born and educated in Canada, Robert Baldwin began his career with Canadian International Paper Co. in both their container and market pulp business. In 1968, he was promoted to manager of marketing in the Far East for International Pulp Sales, with headquarters in New York.

In 1970 he was given full responsibility for all export sales of market paper pulp for international until 1972, when he joined Gottesman-Central National as a vice-president for export pulp sales.

Abstract: Market pulp demand is expected to strengthen well into 1982 and by late year demand should start to outstrip supply.

Four major areas will continue to influence market pulp demand in the '80s. These are: changes in market supply, energy, new products and new growth markets.

Market pulp demand will continue to be affected by both traditional and non-traditional influences. Traditional ones include major markets such as the USA and Western Europe, while the new influences are the rapid growth of office copying systems, disposable diapers, soaring energy costs, growth markets such as Japan, China, Mexico and Thailand, and the new Reagan administration in Washington.

Demand for Market Pulp in Western Europe

By Dr. Roger Grant, Projects Director
Reed International Consultants Ltd, Aylesford UK

Biography: Dr. Roger Grant graduated from Oxford and subsequently carried out research on pulp and paper subjects at Grenoble and Manchester universities. He then joined Parsons & Whittemore, and initially was involved in engineering and starting-up mills in the developing countries. He then moved to the company's New York city headquarters for five years, where he undertook numerous economic studies.

Returning to the UK in 1972, he joined Reed International Consultants Ltd. as projects director. There he directs a variety of studies, and the provision of other specialized management

services for Reed and non-Reed customers worldwide.

He is a past officer of TAPPI technical committees, the UK editor for Pulp & Paper International and the author of our industry's first book on computers.

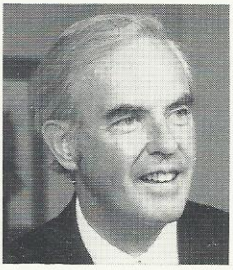
Abstract: The paper commences by setting the scene in terms of past trends of such factors as paper consumption, paper production (including paper mill closures), pulp production and changes in the demand profiles for market pulp.

The effect of various major influences on past and future pulp demand are examined. Such influences are economic scenarios, changes in currency parity, differences in paper mill scale between exporting and importing countries, technological change, and likely new pulp capacity in the exporting countries. This culminates in a considered opinion of future demand.

Although not implied by the paper's title, a deciding influence on long-term pulp and paper demand could well be Europe's capacity to create additional forests. Reform of the Common Agricultural Policy in this direction is proposed, so as to replace the EEC's butter mountains by wood piles.

Demand for Market Pulp in the USA

By Gerard E. Veneman, President
Nekoosa Papers Inc., USA



Biography: Gerard E. Veneman joined Nekoosa Papers Inc. as a salesman in 1949, progressing to general sales manager, vice president and director of marketing, executive vice president and then to president in 1970. He is also executive vice president and a director of Great Northern Nekoosa Corp.

Mr. Veneman serves as a director on various boards including Sentry Insurance Co., Franklin Electric Co., Wisconsin Power & Light Co., and Universal Foods Co., and is a Regent on the University of Wisconsin Board. Active in industry affairs, he is a past-president of the Sales Association of the Paper Industry.

He served three years as president of the Writing Paper Manufacturers Assn. and is a past chairman of the Printing and Writing Paper Division of the American Paper Institute. He has also served as chairman of the Paper Distribution Council, and the Wisconsin Paper Council.

Abstract: The demand for market pulp in the United States is compared with other major consuming areas in the world. The relationship of US market pulp to total US pulp supply will be considered in the three major consuming segments by grade type: printing and writing; tissue; and industrial. Understanding that the highest percent of market pulp is consumed in the printing and writing area, the growth of this market will be projected through the next few years with particular reference to the burgeoning reprographics field.

The impact on US market pulp demand, due to the integrated nature of our industry and the key relationship between demand and operating rates in the printing and writing sector, will be delineated.

Based on anticipated US operating rates through 1985, a forecast for US demand through that period is presented.

Demand for Market Pulp from Japan

The proposed speaker for this paper, Hiroshi Katoh, of Mitsubishi Paper Co., is unable to attend the symposium. The paper prepared by the Japan Paper Association will be given by a PPI editor.

Demand for Market Pulp in South Korea and Republic of China (Taiwan)

By Dr. Ho Sun Yoo, Professor of Economics
Myungji University, Seoul, Republic of Korea.

Biography: Dr. Ho Sun Yoo, born in 1925, was educated in USA and South Korea. He took an MPA degree at Harvard University's Graduate School of Public Administration, and a PhD in Economics at Korea University.

Dr. Yoo was chairman of the Korea Paper Manufacturers Assn. (KPMA) from 1977 to 1981, and has now returned to teaching, as professor of economics at Myungji University.

Dr. Yoo has worked in various positions in government, starting in 1955 as special assistant to the Ministry of Finance, as chief of the planning section in the Ministry of Reconstruction from 1956 to 1961, and as senior counsellor in the budget committee of the National Assembly from 1964 to 1969. He then was vice-president of the Daehan Fire and Marine Insurance Co. from 1969 until his appointment to the KPMA.

Abstract: The Rep. of Korea last year witnessed an unprecedented economic recession, with a decline in economic growth of 5,7 % due to the oil crisis and domestic political instability. The profitability of the pulp and paper industry declined as costs rose faster than prices.

But there is still great potential for increased growth in paper consumption since the present per capita consumption figure of 42 kg, although an exceptional jump from 2.3 kg in 1960, is still below other leading countries.

Korea's paper industry has been steadily bolstered in keeping with the growth of domestic industry. The country's first chemical pulp mill, with a capacity of 300 tons/day, started last year, and newsprint, printing paper, kraft paper and tissue installations were either added or expanded. The result was a capacity in 1980 of two million tons.

Domestic production of raw materials include 582,000 tons of recycled paper and 137,000 tons of groundwood, plus the output from the new chemical pulp mill.

Raw material imports reached 431,000 tons in 1980 not counting wastepaper imports of 1,072,000 tons, of which 490,000 tons came from USA.

South Korea fortunately has overcome the political turbulence of 1980 and early this year brought its parliamentary government back into function. By reshaping friendly relations with its allies, the country is looking forward to a bright future, politically, economically and socially.

The Republic of China (Taiwan) reported exports in 1979 of US $ 16,100 million, and an economic growth rate up 8 %. The country's paper industry produced over 1.3 million tons in 1979, about 15 % up on the previous year.

Taiwan has increased its per capita consumption of paper and board to 75 kg last year, an 80 % increase over that of five years ago. The industry has 170 paper and board mills employing nearly 15,000 people.

Strongly export oriented, the country's paper industry sold pulp, paper and board for a total value of $ 66 million in 1979, its main markets being the southeast Asia countries.

Pulp production amounted to 258,804 tons, and two major mills are expanding their daily output to 300 tons/day of woodpulp, of which some may be for export.

Less dependent than South Korea on imported wastepaper, Taiwan's mills imported 426,000 tons and also 123,000 tons of chemical pulp.

Both the Republics of Korea and China are active suppliers of paper and board to the Asian market. Taiwan has the advantage of a larger domestic pulp industry while Korea's paper sector is larger.

Present and Future of Cellulosic Film Industry

By Frans C. Lemaire, General Manager, Film Sector
UCB Group, Gent, Belgium

Biography: Frans Lemaire was born in 1927 and obtained a degree in engineering from the University of Louvain. He is a graduate SMP from Harvard Business School. In addition to being general manager at UCB he is also a director of British Sidac Ltd. and La Cellophane Española. With its own production and links in the UK and Spain, UCB is the world's largest producer of biox.

He is also a member of the management committee of CIPCEL (Comité International de la Pellicule Cellulosique) whose object is to improve and develop the use of regenerated cellulose film and to maintain relations with public organizations in the areas of regulations, standardization, etc.

Abstract: After 50 years of expansion, to 1970, the cellulosic film industry suffered a steady decline, accelerated in the '60s by plastic films such as PVC polyethylene. But the real competition came from biaxialy oriented polypropylene (OPP) which has similar properties and a much lower specific gravity, offering about 40 % more surface for the same weight.

The growth of the total Cello/OPP market has been slow since the 1974 energy crisis, that is 1-2 %/year. Today OPP's share of the market is 70 % in Japan, 60 % in USA and 40 % in Europe.

About 450,000 tons/yr of dissolving pulp is needed for the cellulosic film business that remains in the world, and this drop by 150,000 to 200,000 tons/yr by 1990. But the pessimistic views could be counter-balanced by a further escalation of crude oil related products, and so benefit cellulose-based products. If this happens, although plants which have been closed cannot start-up again, the industry's cost structure should closely watched so that it is kept at an acceptable level of competitiveness.

Outlook for Chemical Cellulose Demand

By Dr. George B. Creamer, Executive Vice President, Product Management
ITT Rayonier Inc., New York, USA.

Biography: George Creamer did undergraduate work at the New York State College of Forestry, majoring in pulp and paper technology in 1942. He obtained a masters degree in 1943 and then a doctorate from the Pulp and Paper Research Institute at McGill University, Montreal.

He joined Rayonier in 1950 as a research chemist and later held positions in research, technical service, planning and marketing.

George Creamer is the chairman this year of the API's Pulp Producers' Executive Board.

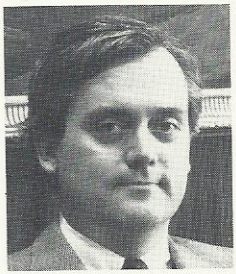
Abstract: The western world's chemical cellulose demand in 1979 was 3.5 million m tons, dropping slightly in 1980 to 3.4 million tons, and is expected to increase by 1983 to 3.6 million tons. Hence demand is expected to grow at an annual average rate of 1.2 % through 1983, with textile fibers growing at 0.5 %, cigarette filter tow advancing at a rate of 5.7 %/yr and all other markets moving ahead at about 2.2. %/yr.

The future growth areas over these years will be cigarette filter tow (+ 5.7 %/yr); and high performance rayon staple (+ 13.6 %/yr) with moderate growth occuring in regular rayon (+ 2.4 %/yr) and cellulose ethers (+ 2.3 %/yr). The continuous filament rayon markets are expected to move slowly at less than 1 %/yr. Cellulosic film will decline over the period at an average rate of 1 %/yr.

The western world's capacity to produce chemical cellulose pulp was 4.2 million m tons in 1979, with the USA (33.1 %), Japan (11.4 %), and Western Europe (16.6 %) being the major supply areas. Capacity through 1983 will grow very little (34,000 tons/yr). The demand/supply situation in USA will be very tight through 1983 (98-100 %) and other world areas will have lower capacity utilization so that world operating rates will grow from only 83 % in 1979 to 86 % in 1983.

Financial Aspects of Market Pulp Sales

By John H.A. Quitter, Vice President and Senior Officer for Scandinavia
Citibank NA, London, England



Biography: John Quitter was born in the USA and obtained a BA degree at Dartmouth University, an MA at Columbia University and an MA at Oxford University.

Prior to joining Citibank he was a speechwriter for Governor Nelson Rockefeller and a journalist for the New York Times.

He has published «The Making of Detente: The East/West Debate,» and «Norway as a Capital Exporter.»

Abstract: During the '70s fiber and energy became the critical elements in pulp production; efficient usage of these two factors differentiated the successful price competitors in market pulp

sales from the less successful.

During the first half of the '80s, finance and the efficient use of increasingly expensive externally-funded capital will join fiber and energy as key factors in new pulp plant construction and market pulp competitiveness.

This paper will focus on three aspects of finance and the costs of capital which will impact future pulp capacity: the maintenance and retention of pulp inventories; the survival of marginal producers; and the way in which much market pulp is sold or traded today. Finally the paper will forecast short and long term interest rates and exchange rates for a number of currencies important in market pulp sales.

Project profitability analysis differs somewhat in North America from Europe and developing regions; the former establishes hurdle and incremental rates of return with inbuilt interest rates. Europe tends to focus on other issues than on incremental rates of return, such as integration, fiber utilization and social issues.

High interest rates (above 10-11 %) and non-availability of long term capital (beyond 8-10 years) means analysts focussing on incremental rates of return will discourage new investment; marginal producers without substantial internally-generated cash flow or government support programmes will find acceptable risk capital too expensive or non-available.

Conclusion: the period between 1982-87 will see little or no new pulp capacity being approved by North American producers and only most urgent programs – with government support – in Europe and developing regions.

The high cost of working capital for production cycle and inventory maintenance will sharply affect inventory overhangs and ultimately market pulp. Monetary policies in most countries in mid-1980's will squeeze availability of short term working finance and force rates high. Volatility of both availability and cost will force caution on production and stock managers.

There will be a major effort to reduce carrying costs of stock, restrict production runs to firm orders, and avoid excessive production available for spot lot competition.

Conclusion: inventory growth will be severely restricted, marginal producers will find working capital costs increasingly problematic, and working capital shortfalls may drive some small producers into conglomeration with larger firms.

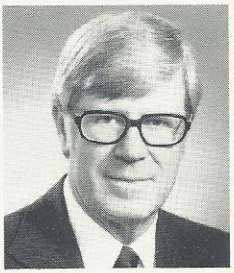
Extreme volatility of currency cross-rates is making profitable sale of bulk products very difficult for all producers except the most sophisticated. The fluctuation of $ US, Sterling and DM have had a severe impact on profitability for many producers. With rising domestic production costs, a smooth revenue stream is essential, and plans to manage and contain currency exposure are vital. Companies and sales associations must learn to match currency receivables and liabilities, arrange forward contracts and swaps to protect revenue stream. Forecasts of interest and currency cross-rates for major euro-currencies and US $ are put forward.

Session II: Supply of Market Pulp

Session Chairman

Supply of Market Pulp, an Overview

By W.H. Vaughan, Vice President, Market Planning & Development
Canadian Cellulose Co. Ltd., Vancouver, Canada



Biography: William Vaughan was born in USA and took a BSc in production management at the University of California, Berkeley then a MBA in marketing and finance at the University of California, Los Angeles. He then studied for a PhD in economics and statistics at New York University,completing the written and oral examinations. From 1978 to 1980 he was managing director of Canadian Cellulose International in Brussels, and moved to his present position early this year.

From 1972-77 Bill Vaughan was vice president of North American pulp sales for this company in Montreal, and prior to that was director of pulp marketing in the company's headquarters in Vancouver.

He was earlier with Appleton Paper Co. and Champion International, as well as Union Carbide, all in USA.

Abstract: In his economic overview of current activities, the author shows how the present recession differs from that of 1975-76 and points to the difference and significance of US paper companies operating rates during the last recession and the present one.

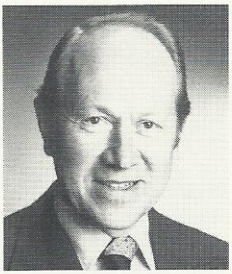
He discusses the international pulp and paper industry's production ratios in various periods (1955, 1980, and forecasts for those in 1981-83) with reference to the recessionary changes and the long-term trends, and what they portend for the future.

In considering the factors which force changes in both the quantity and quality of pulp available in the future, the author analyzes the capacity ratios of US mills during the period 1960-80 and the forecasted ratios from 1981-83.

He discusses possible problem areas and solutions for the supply of market pulp on a worldwide basis, and makes reference to Norscan inventories from 1955 to 1980 and forecasts in 1983.

Supply of Market Pulp from Sweden

By Karl-Fredrik Gustafsson, Executive Vice President
Södra Skogsägarna AB, Sweden



Biography: Born in Stockholm, Sweden in1921, Mr. Gustafsson entered the pulp industry in 1946 after taking a masters degree in chemical engineering at the Technical University of Stockholm. After serving in different positions in Sweden, with MoDo, SCA and Klippan, he became general manager and director of the Stora subsidiary in Nova Scotia, Canada from 1964 to 1968. He then moved to British Columbia as vice president of the Prince Rupert operations (including Skeena Kraft) of Columbia Cellulose. He returned to Sweden in 1969 to join Södra Skogsägarna as pulp production manager, and in 1975 he became executive vice president and head of the pulp division.

Abstract: Sweden's market pulp capacity in 1980 was about 4,5 million tons, of which the share of bleached kraft was well over 2.5 million tons, as it has been for the past decade. For at least the first half of the 1980s the conditions will remain about the same.

Out of a total pulp production in Sweden of 9 million tons, the share of bleached pulp was 4 million tons in 1980, with about 60 % of the output integrated to paper.

According to recent plans the capacity of the Swedish paper industry will effectively increase only 2 % annually in the next five years, from 7.2 million tons at present to 7.9 million tons in 1985. During the 1970s the growth rate was 4 %/year.

Annual paper demand in Western Europe is forecast to rise 3-3.5 % in the beginning of the 1980s. Thus the capacity growth of the Swedish paper industry will most probably be slower than that of Europe's paper demand.

Due to continued restructuring of the Swedish forest industry and the slow integration to paper, the capacity of bleached market pulp will stay about the same for the foreseeable future.

The growing stock in the Swedish forests has increased by 40 % or 700 million m^3 since 1923 from 1.7 to 2.4 thousand million m^3, and is now the highest figure ever reached.

During the 1970s the Swedish pulp industry expanded very quickly and a balance between wood consumption and the growth of our forests was reached. Of major importance to Sweden's trade balance and the well-being of the country, the forest industry and its problems have been dealt with, not only from the business viewpoint but also from social aspects. The state has given assistance such as loans or grants for loans but mainly to maintain employment in the north, and no contributions have been given for investments in new paper capacity. Much restructuring of the Swedish forest industry is already completed and many changes are under way. As an example, there were 72 pulp mills in 1980, compared with 98 in 1970. Thus, the industry will have improved its competitiveness essentially over a rather short period.

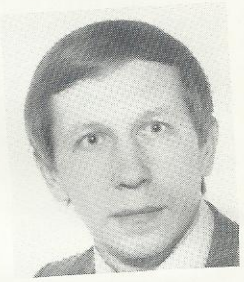
Sweden's cost disadvantages versus North America will diminish for several reasons. Most remaining Swedish mills are modern and efficient, while in North America the need for extensive capital programs will be substantial in order to maintain existing capacity and to comply with the environmental regulations. The level of energy costs in North America is gradually approaching world market levels.

The US forests have not been looked after with the broad long-term view as they have in Sweden. Altogether, bigger increases can be foreseen in the manufacturing costs for pulp in North America than in Sweden.

The considerable increase in transportation costs during the last couple of years favors proximity to the market. Consequently Sweden, Southern Sweden in particular, must be looked upon as a continuing competitive market pulp supplier, particulary for Western Europe.

Supply of Market Pulp from Finland

By Timo Teräs, Assistant Director
Finncell, Finland



Biography: Timo Teräs was born in 1947 in Heinola, Finland. He studied in Finland, the USA and France, and obtained a bachelor's degree from the Helsinki School of Economics and Business Administration in 1971 and a master's degree (marketing) from the same school in 1974.

Mr. Teräs joined Finncell in 1970, and was appointed to his present position as assistant director in 1980, with the main responsibility in market research and planning.

Mr. Teräs represents the Finnish pulp industry in several international forecasting bodies, and participated in the work of the FAO Industry Working Group in 1976/1977.

Abstract: Ten years ago deliveries of Finnish market pulp amounted to 1.8 million tons. Many people predicted then that by 1980 deliveries would drop to 500.000 tons. In fact, they were 2.3 million tons.

Today many people believe market pulp exports from Finland will drop drastically due to heavy investments in the paper sector. They will not.

Finland's use of pulpwood was 25 million m^3 in 1980 with mills running well. In 1985, 29 million m^3 will be available for the pulp and paper industry and by 1990, 30 million m^3/year can be used. Compared with 1980 almost 2.5 million tons of chemical pulp or over one million tons of chemical pulp can be added by 1990, and still the industry can run at full capacity without over-cutting our forests. Wood imports, mainly from the USSR, will continue on the same level of 3-4 million m^3 that they have in the recent past.

If announced capacity expansions in the Finnish paper and paperboard sector are all realized according to plans, capacity will grow from 6.3 tot 7.7 million tons/year between 1980 and 1985 or a little over 4 %/year. Two thirds of these expansions are in newsprint and other wood-containing printing and writing papers. Mechanical pulp, wastepaper, clay, talc and other fillers and coaters will fill about 1.2 million tons of the raw material needs.

If capacity expansions are realized and the industry runs full, then 200-250,000 tons more chemical pulp than in 1980 will be needed.

The net increase in pulp capacity is approximately 900,000 tons/yr by 1985, almost all of this mechanical pulp. Thus theoretically market pulp supply will diminish by about 200,000 tons/year. Even so, deliveries would remain on a level of 2 million tons/year, still exceeding the performance ten years ago. Exports will probably be affected less than total deliveries as domestic market pulp sales may shrink. Due to healthy, growing wood supply, pulp production can be further increased in 1985-1990 and beyond.

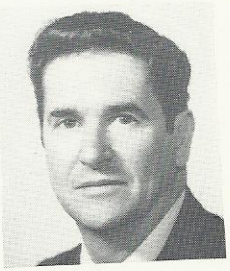
The industrial climate in Finland has improved in recent years. GNP growth is high, labor unrest is limited, and inflation as well as unemployment is at the same level as in the countries

competing with Finland in the pulp and paper sector.

Provided that industrial behavior remains disciplined, the costs are carefully watched and forest potential is fully utilized, pulp buyers can have faith in Finland as a pulp supplier over the long term.

Supply of Market Pulp from USA

By Dr. Ronald J. Slinn, Vice President
American Paper Institute, New York, USA
Paper presented by Dr. Georges B. Creamer, Executive Vice President,
Product Management ITT Rayonier Inc., New York, USA



Biography: Ron Slinn obtained degrees in forestry from the Australian Forest School and Sydney University in 1950, an MSc in Forestry from the University of Melbourne in 1967 and a PhD from Duke University in 1969.

He joined the API in 1970 and prior to this time was associate professor in forest economics at Duke University. He was earlier employed in the Australian Forest Research Institute as officer in charge of forest management research.

Ron Slinn has published frequently on various aspects of forest resource management and has recently developed a special interest in the fiber economy of the international pulp and paper sector. In addition he has studied the fuel and energy balances of the US industry.

Abstract: The total paper grade woodpulp capacity of the US industry – 50.11 million m tons in 1981 – is twice that of the second largest industry, that of Canada, and more than twice that of the three Nordic countries.

However, in contrast with Canada and the Nordic countries, only 9.5 % of the US capacity is classified as market pulp, representing less than two-thirds of the Canadian market capacity.

There are 58 US mills with market pulp capacity, of which 10 produce only paper grade market pulp (seven of them also make dissolving grades). In 1980, US pulp mills produced 4.46 million tons of paper grade market pulp, a record high production level and the first time that the 4-million-ton level has been exceeded. Of this total, 45 % was shipped to the domestic market, 53 % was exported and 2 % was added to US producer inventories.

Planned expansion of paper grade market pulp capacity will bring the US total to 4.78 million tons in 1983, 2.5 % above the 1981 level. Bleached hardwood sulfate pulp will represent 34 % of that 1983 total.

Supply of Market Pulp from Canada

By Karel M. Jegr, Senior Planning Specialist
Sandwell Management Consultants Ltd., Canada

Biography: Karel M. Jegr was born in Czechoslovakia where he did his graduate and post graduate studies in mechanical engineering. He also holds an MA Sc. degree in management sciences from the University of Waterloo, Canada.

Prior to joining Sandwell in 1980, he was senior research specialist, Economic and Planning Division, Pulp and Paper Research Institute of Canada in Montreal for seven years. His responsibilities included identification and analysis of medium and long-term economic and technological trends in the pulp and paper industry and in the utilization of forest resources.

Earlier background includes positions with the University of Waterloo, Canada and Stanford Univesity, USA. In addition to his current duties with Sandwell focussing on the preparation of feasibility studies for pulp and paper industrial ventures for a worldwide clientele, K. Jegr represents the Government of Canada at the International Energy Agency (Forestry Energy Section).

Abstract: In the latest annual survey of the Canadian Pulp and Paper Assn in spring 1981, which established a revised base capacity for paper grade market chemical pulp for 1979 at 6,452,000 m tons, 6,3 % lower than recorded in past surveys. This new approach avoids overstatements and records actual pulp supply.

According to the same survey, the Canadian annual capacity for chemical paper grade market pulp is expected to reach 6,924,000 tons by the end of 1983, reflecting an average annual growth of 1.42 %.

The author asks, "is this all Canadian market pulp producers can offer to their worldwide clients in terms of potential additional saleable tonnage, and if so, what constitutes such a modest growth?"

Part of the answer lies in areas related to the demand-price relationship and to international trade. But these subjects have been dealt with in another session.

A recent assessment of Canadian forest resources shows a surplus of softwood species of only 25 % over current harvesting levels. Needless to say, the pulp and paper industry will have to compete with other producers of forest products for this reserve.

A surplus of chips experienced in the past will not likely reoccur in the foreseeable future due to continuous horizontal integration and other factors. In the long run, the thrust to secure resources will lead to further restructuring of the Canadian forest industry, and foreign participation in this process will continue. Foreign investors will, to some extent, ease the shortage of capital available for capacity expansion, but foreign participation will have a negative effect on the amount of pulp available on the open market.

The manufacturing costs of pulp mills in Canada increased on the average of $30-$40 in 1980 and continue to do so at least by 10 %/year over the next several years. Wood, energy and labor costs are major contributors to these increases.

Short-term problems facing market pulp producers such as the weakening demand resulting in an inventory build-up, labor unrest (up to 60 % of Canadian pulp capacity might be affected by strikes in 1981) should be resolved by year end.

It is not inconceivable that in the period 1983-85 up to 400,000 tons of additional annual pulp capacity will be put onto the market. What portion will be allocated as market pulp is not possible to estimate at present.

Supply of Market Pulp from Brazil

By Abilio Dos Santos, Chairman
The Brazilian Woodpulp Exporters' Assn.
President, Celulose Nipo-Brasileira S.A. (Cenibra),
Rio de Janeiro, Brazil

Biography: Born in 1934 in Matozinhos, Minas Gerais, Abilio Dos Santos graduated as a mechanical and electrical engineer in 1958 from the University of Minas Gerais. He was employed in various firms in Minas Gerais, and then in 1969 was appointed general manager of the Industrial Development Institute of Minas Gerais (INDI). In 1971 he became managing director of INDI and then president in 1973. He coordinated INDI's activities in investment in industrial enterprises in this state including such firms as Cenibra, Krupp, Demag and Celanese Corp.

In 1974, Abilio Dos Santos was appointed executive director of Cia. Vale do Rio Doce (CVRD). From 1975 to 1979 he was president and chief executive officer of the Development Bank of Minas Gerais.

In April 1979 he took over his present position in Cenibra and later that year as chairman of Abecel.

Abilio Dos Santos is vice president of the Brazilian Paper and Pulp Manufacturers Assn. and vice-chairman of the Technical Center for Paper and Pulp (CTPC).

Abstract: The present state of the Brazilian economy and its prospects for the '80s is the framework for the analysis of the current status of Brazil's pulp industry and its ability to supply bleached hardwood market pulp in the future.

Production of woodpulp reached 2,873,000 tons in 1980, an increase of 17,4 % over the previous year. Although this performance tops the 15,7 % annual growth during the '70s, it is expected that growth will be modest over the next five years. Apparent consumption during the past decade also grew at an impressive rate of 12.4 %/year, but again a deceleration is expected.

Planned expansions and new capacity to come on stream up to 1985 will increase production to about 2.5 million tons of hardwood pulp. For the longer term it is expected that mills will also be built in the northern part of the country and start operations using existing natural tropical forests.

Brazil's exports started from a negligible 39,000 tons in 1970, and last year the country became the world's largest exporter of bleached hardwood pulp – over 800,000 tons. By 1985, due to increasing domestic demand Brazil will only slightly raise its present volume of pulp exports. Brazil's goal is to be capable of supplying 5 % of the total market pulp business by 1990, provided that the required course of action is taken in good time.

In order to attain these levels, massive investments must be made. At present funds are scarce for the needed expansion and for the new projects. However, the proposed growth plans are so attractive in view of Brazil's potentialities that they are expected to bring forth investors from government, as well as local and foreign companies.

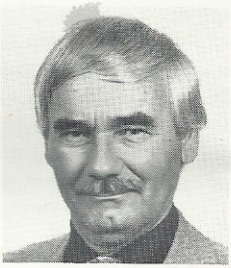
The 1980 financial statements of Brazil's main pulp and paper companies has shown a highly satisfactory degree of profitability, and based on forecasted cost trends, the industry is optimistic for the future.

Last year wood costs in Brazil to produce one ton of hardwood pulp amounted to about US $ 50-60, compared to $ 160-210 in Sweden and up to $ 250 in France. This is due to rapid growth and the high yields from the plantations.

In addition, the real possibility of implementing in a short period, the so-called energy forests, give Brazil's forest products industry another important advantage, for both costs and security.

Supply of Market Pulp from USSR

By Roland Sopko
Dirosab, Sweden



Biography: Born in 1932 in Bratislava, Czechoslovakia, Mr. Sopko graduated as an engineer (Mach.) and moved to Sweden in 1964. He worked originally for Stora Kopparberg and in 1967 set up his own consulting and engineering company, Dirosab.

Dirosab carries out research and consulting to promote Swedish exports to the Soviet Union and other Comecon countries, and its clients are the Swedish authorities and the Swedish export industry.

Mr. Sopko is the author of several reports on the East European pulp and paper industry and lectures at the Swedish School of Exports as well as giving training courses at the Department of Industry and Commerce. He also teaches at the Polhem Technical College in Gävle in mechanical technology.

Abstract: Because of the lower growth rate in the Soviet pulp and paper industry, steps have been taken to improve its efficiency. The include higher capacity utilization, higher proportion of sulfate pulp output, great share of low-grade roundwood used, and greater use of wood residues from the mechanical forest products sector. Also, the quality of the paper products have been improved.

During the next five-year plan, 1981-85, pulp production is estimated to grow by 30-40 %, initially by raising to full capacity the new Ust-Ilimsk pulp mill and through rebuilding and expansion of existing mills. In addition a new forest products combine is planned for the Mari ASSR.

Most of the USSR's pulp production of about 7.5 million tons of chemical and semichemical pulp is produced in integrated combines or wood-processing centers.

Pulp output is mainly to cover the domestic market and only 20 % goes for export, either as market pulp or finished paper and board products. Market pulp imports is fairly steady each year at about the 200,000-ton level.

The Soviet Union's plans for new pulp capacity are to cover future domestic requirements and the contracted volume to Comecon countries. But the new management, the newly-formed ministry of woodworking, pulp and paper industry, must first remove bottlenecks in existing mills and also work inside the limits of the new economic environment prevalent in the country.

Wastepaper Trends in the Common Market

By Dr. Georg Holzhey, Executive Vice President and Partner
Haindl Papier GmbH, Augsburg, Fed. Rep. Germany

Biography: Born in Munich in 1939, Dr. Georg Holzhey graduated from the University of Munich in 1963, with majors in economics and administration. In 1968 he received his doctorate degree from this university.

Dr. Holzhey joined Haindl Papier in 1965. He is chairman of the German wastepaper committee of the German Paper Manufacturers' Assn. (VDP) and is also chairman of the wastepaper committee of CEPAC in Brussels.

Abstract: Only 75 % of the EEC's paper and board consumption is covered by member countries' own production, and of the raw material requirements for this output in the Common Market, only two-thirds is of domestic origin.

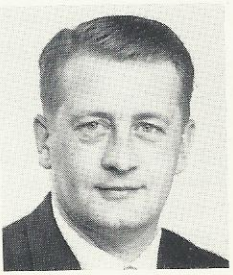
Since 1950 the use of wastepaper in the EEC has increased from 1.9 million tons to 10.6 million tons in 1979, an increase of 460 %, while in this same period the Community's paper and board production only rose by 260 %.

Can the dominating share of wastepaper grow further? There is substantial potential for the supply of additional quantities of wastepaper (but not the high quality grades), since roughly 50 % of the EEC's paper and board consumption is being removed as garbage.

Economical and technical factors, however, put limitations on increasing wastepaper utilization. It must be the common aim of the paper industry, its suppliers and its customers to push forward these limits in order to allow greater usage of wastepaper, ans thus permit the industry to become more independent from imported raw materials.

Cost of Building Pulp Mills as a Factor in Future Growth

By Eric Ehrnrooth, President and Matti Kirjasniemi,
Project Manager, Business Management Consulting,
Jaakko Pöyry International Oy, Helsinki, Finland



Biography: Eric Ehrnrooth obtained an M.Sc. degree in chemical engAkademi University in Turku, Finland in 1951. He was an assistant at the university for several years, and then worked as a superintendent in the Sunila kraft pulp mill in Finland for eight years.

He joined the Jaakko Pöyry organization in 1959, and has since held various managerial positions within the company. He has participated in the development of the organization from its very beginning, taking an active role in engineering and study projects.

Abstract: Market forecasts indicate a possible shortage of market pulp in the 1980s, because of two factors: Scandinavian pulp producers have too limited forest resources to increase production, and the trend is towards more integrated pulp/paper production. Also, it is difficult to open up new areas for the forest industry in developing countries, because of lack of infrastructure, adverse political conditions and financing problems.

The investment requirements of pulp mills have outpaced general inflation. This is because technical developments have been too slow to compensate the increased demands for effluent treatement, process control, energy conservation etc. In addition, the possibilities of benefiting from economics of scale have decreased.

No revolutionary new developments in the kraft pulping process are foreseen.

All these factors indicate that the real prices of pulp will increase. Increasing real sales prices will in turn stimulate investment in the pulp industry. However, problems in financing new projects of up to US $ 500 million and other reasons will cause delays in many projects, and no rapid increase in pulp supply can be foreseen.

The Energy Impact in Pulp Production

By E. Norman Westerberg, Senior Vice President
Ekono Oy, Helsinki, Finland

Biography: Mr. Westerberg took a M.Sc. degree in Chemical Engineering from Abo University, Finland, in 1953 and a M.Sc. in Nuclear Engineering from the Oak Ridge School of Reactor Technology, Tennessee in 1961. He is a registrered professional engineer in Ohio and Washington.

After a few years in the chemical industry in the USA, he joined Ekono Consulting Engineers in Helsinki in 1958, and has worked in various positions in the process engineering and international areas. In 1967-1969 he was located in Seattle, Washington, starting the firm's US subsidiary. He was appointed to his present position in 1971, and is a director of Ekono Inc., Bellevue, Washington.

Mr. Westerberg's major professional experience and interests are energy and environmental conservation, in which fields he has some fifty publications in professional journals. He is immediate past chairman of the Finnish Association of Consulting Firms (SKOL) and chairman of a World Energy Conference ad hoc committee on cogeneration and heat pumps.

Abstract: The energy supply and use pattern in the pulp and paper industry in major forest industry countries (North America, Scandinavia, USSR, Japan and Brazil) is described.

Energy consumption per unit of production varies considerably, and is naturally highest in North America where energy has been abundant and low cost, and lowest in Scandinavia, particulary Finland, where energy has been scarce and higher prices than elsewhere. For example, an average US bleached kraft pulp mill uses 2-3 times as much external energy, that is purchased fuel and electricity, as a corresponding mill in Finland. A Finnish mill uses less process steam, utilizes by-products fuels more efficiently, and cogenerates almost all its electricity needs. Energy use patterns in other countries fall between these two extremes.

It is obvious that increased energy prices have had a more dramatic impact on the US pulp and paper industry. During the '70s the demand for external energy per ton of product has

reportedly dropped by about 20 % in the USA, and the reduction is of the same magnitude in Finland, despite the already lower starting position. The potential for energy conservation is still large in many areas of the world.

Another factor explaining the Scandinavian forest industry's energy consciousness and involvement also in national energy policy making, is the importance of this industry in the region. This can be seen from the fact that in Finland the pulp and paper industry alone stands for 23 % of the country's total primary energy demand, whereas the corresponding figure in Sweden is 17 %, in Canada 10 %, and in other countries less than 5 %.

Future changes in primary energy availability and price trends are discussed. Major possibilities and trends for energy conservation are outlined. One of the key interests now is in substitution of oil and gas with biomass and coal. Practical alternatives and new developments are described, including the use of biomass as lime kiln fuel.

The possible competition between the forest products industry and the energy sector for wood supplies is a popular topic. This provides both challenges and new opportunities for the forest industry, which is in a particularly advantageous position in this respect. Biomass today provides about 10 % of the world's primary energy supply, and most of it is for the disastrously inefficient use as firewood in many developing countries.

Session III: Evolution in the Furnish for Papermaking

Session Chairman

Biography: Ian Hendry was born in Middlesbrough, Yorkshire, in 1925. After military service he took a degree in mathematics at St. Catharine's College, Cambridge. He joined Wiggins Teape as a research trainee in 1950. After a career in R & D, he moved to general management as head of the then NCR Paper Division of Wiggins Teape in 1966.

In 1970 he became Administrateur Délégué of Papeteries de Virginal in Belgium, and in 1971 took responsibility for all production of IDEM Carbonless Paper in Belgium.

He is now general manager of Wiggins Teape's Fort William Paper Mill in Scotland, a 50,000 ton/year wood-free paper operation.

He is a past chairman of the British Technical Section, an honorary member of the EUCEPA Council, and is an adviser to the EEC on the current research project on the re-use of wastepaper.

The Mixture of Eucalyptus and Pine Pulps for Paper

By Silvia Bugajer, Head of Pulp & Paper Department
Technical Center in Pulp and Paper (CTCP/IPT), Sao Paulo, Brazil

Biography: Born in Sao Paulo, Silvia Bugajer graduated from Mackenzie University, Sao Paulo, as a chemical engineer in 1970, and obtained an MSc in pulp and paper technology from the Institute of Paper in Appleton, Wisc. in 1976.

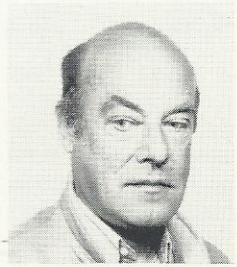
In 1971 she joined the Sao Paulo Technological Research Institute. Since 1976 Silvia Bugajer has been head of the CTCP/IPT, working in research and development of pulping, papermaking and coating, and giving technical assistance and consultation to many firms in Brazil.

Abstract: The specific energy consumption on refining eucalyptus and pine pulps was determined and the influence of the disc pattern on the refining energy consumption of Brazilian eucalyptus pulp was identified. The effect of adding eucalyptus pulp to pine pulp for printing/writing paper was evaluated, using mixtures with different degrees of refining.

A mathematical model was designed to estimate the physical characteristics of papers made from mixtures of these pulps.

Experience with Eucalyptus Woodpulp at Celupal Fine Paper Mill

By Louis Lhoest, Technical Manager
Celupal S.A., Spain



Biography: Born in Belgium in 1927, Louis Lhoest obtained a degree in chemical engineering from the University of Liège in 1951.

He started his career at Koninklijke Nederlandse Papierfabrieken (KNP) in the Netherlands and in 1960 was appointed manager of the research, development and engineering department.

In 1963 he took charge of a feasibility study for a pulp and fine paper mill in Algeciras (Cadiz), Spain, and in 1966 became manager of the construction of the Celupal paper mill. Since the mill started operation in 1967 he has been technical manager of this mill.

Abstract: Celupal produces 54,000 tons/yr of mostly woodfree coated paper on one machine of 2.85-m-trim. The short fiber content, eucalyptus pulp, comes from the ENCE Huelva mill, 250 km from Algeciras.

This pulp is received in bulk (40 % dry) by trucks which are specially designed for this job. The economic advantages of this system are described and illustrated with slides.

The advantages are noted using wet pulp instead of in dry form and the author describes how the mill is succeeding in its aim to use 80 % eucalyptus in its furnish.

To attain this target some adaptions have been made to the refining system, the drying process. Surface sizing is also necessary.

100 % Eucalyptus Paper - Mill Experiences

By Ovídio S. Sallada, Paper Mill Manager
Industrias de Papel Simão S/A, Jacareith, Brazil

Biography: Ovidio Sallada was born in Sao Paulo and took a masters engineering in chemistry from Sao Paulo University, and then a post graduate diploma in pulp and paper technology from the Darmstadt Pulp and Paper Institute in Fed. Rep. Germany in 1965.

He worked with Cia. Suzano de Papel e Celulose and the Research Institute of Sao Paulo University's pulp and paper division before joining Industrias de Papel Simão in 1968.

Mr. Sallada worked first at the company's Sao Paulo mill and then moved to his present position.

He was a founder of the Brazilian Pulp and Paper Technical Assn. and was its president in 1972/73. He is a member of the advisory board of the Pulp and Paper Technical Center (CTCP) of the Sao Paulo State Research & Development Institute (IPT).

Abstract: Due to the lack of pulp during the '50s and '60s, Brazilian papermakers were forced to use more and more eucalyptus pulp which was cheap and easily available because of the existing large-scale plantations. Consequently a new technology was developed for using eucalyptus fibers in papermaking, and its content in most papers increased rapidly up to 100 %.

In due time it was possible to evaluate the advantages and disadvantages of this short fiber. The balance was positive. The main change necessary in papermaking relates to the refining process in order to decrease power consumption and the fast development of tensile strength without reducing the relatively poor tear strength.

On the paper machine no specific alterations were required to use eucalyptus, except a general optimization for better runability and efficiency. Newsprint machine concepts helped the development in several areas. The use of the lumpbreaker roll over the couch is highly recommended on slow speed machines. Over 300 m/min there is a slight improvement in machine efficiency with the use of high-load combined presses which assure 40 % dryness at the first open draw.

Outlook on Market Pulp Developments and Technology

By Wulfdietrich Peltz, Head of Fiber Purchasing Department
Feldmühle AG, Düsseldorf, Fed. Rep. Germany

Biography: Educated in Fed. Rep. Germany, Wulfdietrich Peltz spent eight years in the fiber sales department of Aschaffenburger Zellstoffwerke AG, which later became part of PWA.

In 1952 he joined Feldmühle and was appointed head of the fiber purchasing department in 1959.

Abstract: The author explains the industrial structure of Feldmühle, Germany's largest paper producer, and the way in which his company views the trends in the pulp market.

He discusses the development of the paper market as it relates to pulp consumption.

100 % Eucalyptus in High Speed Machines

By Roberto Leonardos
Companhia Suzano de Papel e Celulosa, Sao Paulo, Brazil

Biography: Graduating from Brazil's National Institute of Technology in 1955, Roberto Leonardos worked for several paper firms. In 1964 he became an independent consultant handling key projects for a number of Brazilian companies.

In 1969 he joined Industrias de Papel Simao as executive manager of engineering and development. In 1976 he formed his own consulting company, R.B. Leonardos - Technologia em Papel e Celulose Ltda. He is now with Companhia Suzano de Papel e Celulosa in Sao Paulo.

Roberto Leonardos was president of the Technical Assn. of Brazilian Pulp & Paper Industry (ABCP) in 1969 and 1973-75 and remains active in industry affairs.

Abstract: In 1979 Cia. Suzano de Papel e Celulosa started its No. 7 machine. This 4.7-m-wide Voith Brazil Duoformer has a three-nip compact smoothing press, predryers, size press, after dryers, three-nip calender stack, and reel. The machine is presently reaching 840 m/min making 50 g/m^2 bond paper, and goes up to 120 g/m^2 offset paper at lower speeds.

The author describes the work done to permit the use of 100 % eucalyptus pulp for this machine, and compares the machine's operation with a regular fourdrinier using this pulp