

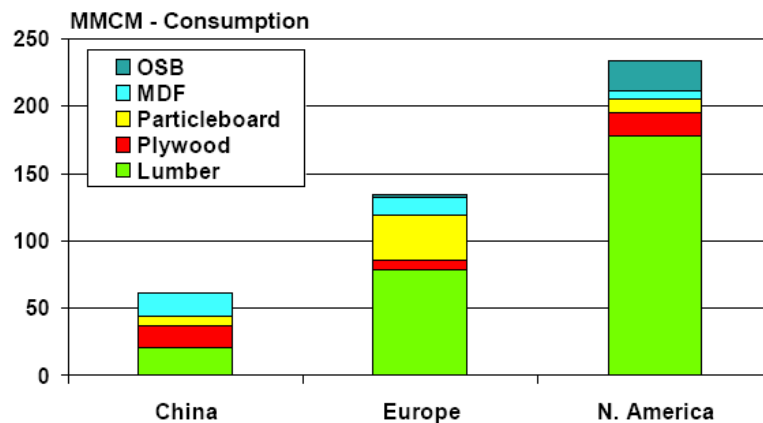


Research proposal

Opportunities in the particleboard and MDF global market

The first part of this research proposal will address the market trends and developments of three crucial markets for particleboard and MDF products: North America, Europe, and China.

The Relative Importance Of Wood Markets in China, Europe, and North America in 2004



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Particleboard and MDF market in the U.S.

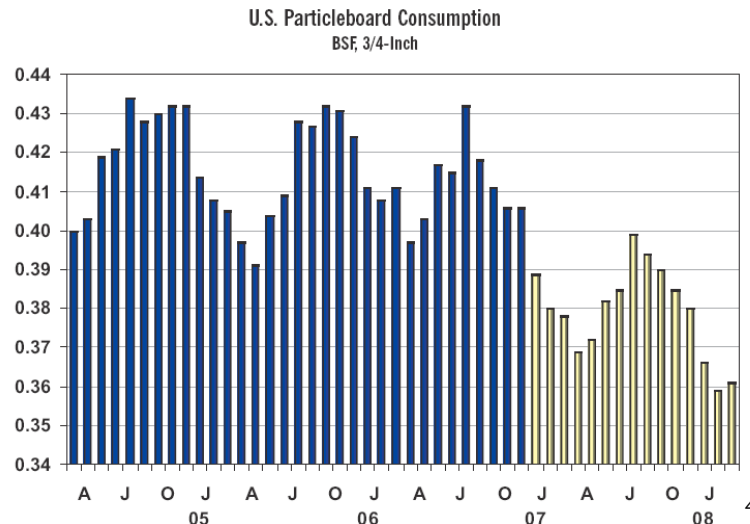
The U.S. market for particleboard and MDF is decreasing. High production costs and decreased lumber production have limited the availability of wood fiber and resin. These cost pressures have slowed the drop in prices, but have put further downward pressure on margins.²

U.S. particleboard demand totaled an estimated 4.94 BSF in 2006, less than 1% below 2005, largely as a result of weaker consumption in industrial markets. Consumption in construction markets started to retreat as housing starts have fallen.³

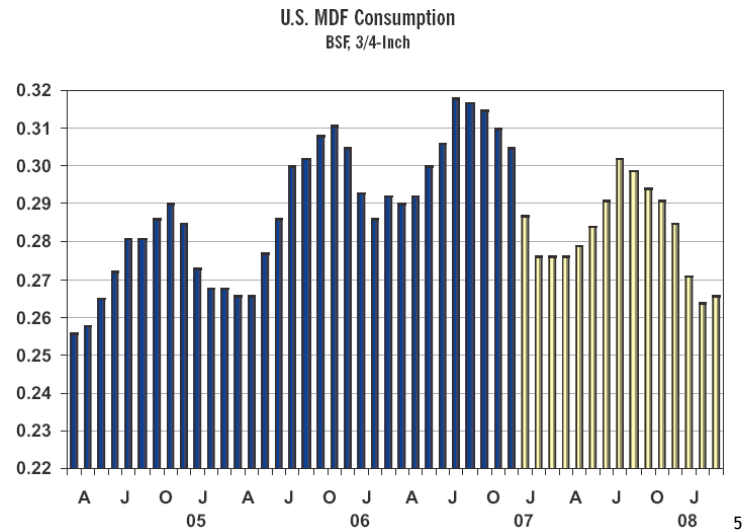
¹ Available on-line at: http://www.cintrafor.org/CONFERENCE_TAB/China%20Conf%202006/Fuller%202006.pdf

² "Particleboard and MDF commentary." January 2007. Available on-line at: <http://www.risiinfo.com/Marketing/Commentaries/MDF.pdf>

³ Ibid.



2006 saw stronger growth in MDF demand as MDF usage rates continued to increase, mitigating end-use market weakness.



Particleboard and MDF consumption will suffer further from the sharp downturn in construction markets and persistent weakness in domestic furniture production. As markets weaken over the course of 2007 and into 2008, the risk for capacity closures will continue to increase.⁶

Particleboard and MDF market in *China*

Particleboard is one of the major wood-based panel products in China. Although rapid development of the particleboard industry is restricted to certain extent by such problems as poor product quality and abnormal production (due to shortage of raw materials and

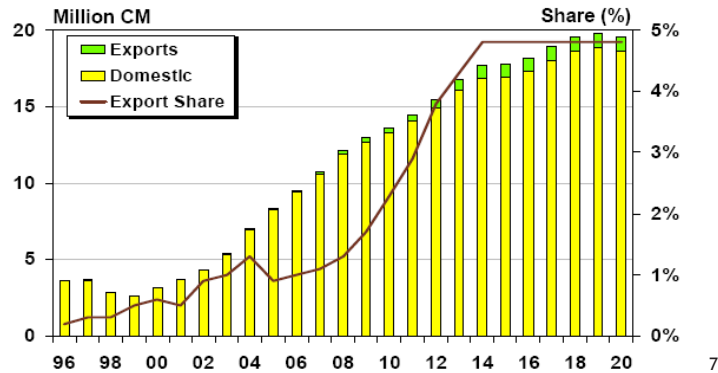
⁴ "Particleboard and MDF commentary." January 2007. Available on-line at: <http://www.risiinfo.com/Marketing/Commentaries/MDF.pdf>

⁵ Ibid.

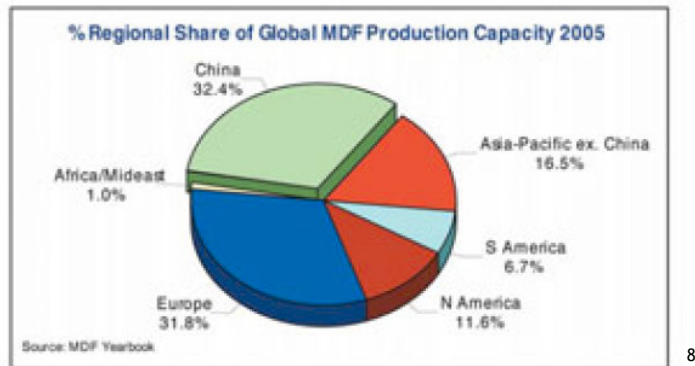
⁶ Ibid.

techniques), the industry is still developing fairly rapidly. Growth in consumption is expected to continue in the next few years, boosted by consistent demand for new houses.

China's Particleboard Consumption: Domestic and Export – A Bright Future as Quality Improves?



As a response to market demand for lower price materials, the MDF industry's spectacular growth curve of recent years has begun to slow down. Only a handful of new plants were built globally in the past few years, although a number of existing plants expanded by adding new machinery. New large-capacity plants have been installed in the developing economies of China and Eastern Europe and have experienced consistent growth.



Production will now favor integrated, low-cost producers who can continuously sustain maximum output of consistently high quality material and get this to the market place quickly.

7 Available on-line at: http://www.cintrafor.org/CONFERENCE_TAB/China%20Conf%202006/Fuller%202006.pdf

8 "Particleboard and MDF commentary." January 2007. Available on-line at: <http://www.risiinfo.com/Marketing/Commentaries/MDF.pdf>

MDF PLANTS AND CAPACITY 2003 - 2005

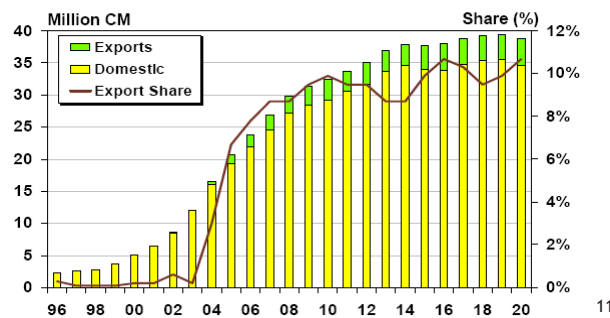
Region	Number of Plants			MDF Capacity cu m/yr (,000)		
	2003	2004	2005	2003	2004	2005
Africa	4	4	4	245	245	245
Asia-Pacific	43	50	53	7,083	7,591	7,973
China	183	320	319	9,184	16,219	15,690
Europe	63	69	72	12,802	14,239	15,416
Mideast	2	2	2	180	180	190
North America	26	25	27	5,248	5,041	5,634
South America	13	14	14	2,770	3,262	3,292
Total	334	484	491	37,512	46,777	48,440

China has the world’s largest MDF production capacity, followed closely by Europe. China has seen a huge growth in the production of MDF during the past decades, rising from a 4.9 percent share of the global market to hold a 32.4 percent of the global total. At the same time, China’s share of global demand moved from 24.3 percent in 2001 to 33.8 percent in 2005.¹⁰

The emergence of several powerful groups, two of which now rank among the world’s top 10 players, has begun to influence changes in quality. Such groups will be well positioned to increase exports of panels and semi-finished products to near and far markets.

A combination MDF production overcapacity of around 10 percent, plus a shortage of fiber raw materials will probably lead some China’s smaller producers with less efficient machinery to close. China is expected to maintain its driving force in the production of MDF and already some of its producers are showing signs of adding value to the basic materials.

China’s MDF Consumption: Domestic and Export – Large Volumes, Slower Growth



9 Available on-line at: <http://www.fao.org/docrep/w8191e/w8191e00.htm>

10 Available on-line at: http://www.datatranscripts.com/samples/mdfyearbook_2006.pdf

11 Available on-line at: http://www.cintrafor.org/CONFERENCE_TAB/China%20Conf%202006/Fuller%202006.pdf

Particleboard and MDF market in Europe

Western Europe has always been the major producer and consumer of particleboard in Europe. Overall, the market has grown from levels of consumption and production of around 3 million m³ in 1961 to production of 42 million m³ and consumption of 40 million m³ in 2000, making this the largest component of the wood based panel sector.¹²

Within Europe, Western and Eastern Europe are small net exporters, while production and consumption are roughly in balance in the CIS sub-region. In Western Europe, the market for particleboard has grown persistently and with a relatively high growth rate. Production and consumption have grown on average each year by 4.7 percent and 4.8 percent respectively (equal to increases of around 690,000 m³ and 620,000 m³ respectively), although growth may have slowed slightly in more recent years.¹³

In Eastern Europe, the particleboard sector has also grown strongly at an average annual growth rate of 5.7 percent or 180,000 m³ (production and consumption). In contrast to many other components of the forest processing sector, the economic changes in the early-1990s did not have much of an impact on the particleboard sector, which suffered only slight falls in production and consumption. Since 1996, recovery has been very strong in this sector, with production growing at an annual rate of 10.9 percent and consumption growing by 15.1 percent per year (equal to annual increases of about 260,000 m³ and 380,000 m³ per year respectively).

In 2006, production of MDF in Europe increased by 5.9 percent and achieved the new record level of 12.4 million m³. European consumption on MDF gained 6 percent in 2006.¹⁴ Germany remained the major producer of MDF in Europe with about 22.5 percent of production capacity, while most of the new growth was in the East, especially in Russia and Turkey. The United States was Europe's most important foreign market, accounting for 24 percent of all exports.¹⁵

In order to guarantee their survival in tomorrow's market place, producers in mature markets are being forced to move away from a reliance on the production economies of scale. Increasing competition and overcapacity have boosted a trend of mergers and acquisitions in the past few years.

Russian Timber Market - Sourcing for MDF/Particleboard

The Russian Federation has experienced significant changes since the volatile years of the 1990's. Nine straight years of consistent GDP growth along with political stability, high commodity prices, and a great influx of foreign direct investment have transformed Russia into a modern and vibrant 9th biggest economy in the world.¹⁶ The country's newfound wealth is driving the modernization of all major industries in the country and especially the forestry sector.

With the passing of the 2007 forest code and continuing modernization in equipment and techniques, the Russian forestry industry has the potential to increase wood products output

¹² Available on-line at: <http://www.fao.org/docrep/w8191e/w8191e00.htm>

¹³ Ibid.

¹⁴ "Production and consumption of panels rose further in Europe in 2006." September 7, 2007. IHB Fordaq Network.

¹⁵ Ibid.

¹⁶ "Is Ivanov now the presidential front runner," Russia profile.org. June 20 2007. Available on-line at: <http://www.russiaprofile.org/page.php?pageid=Business+New+Europe&articleid=a1182349717>

by 4 times its current rate.¹⁷ Considering that Russia contains one quarter of the world's forests, "the potential of the national timber industry is no less than that of the oil, iron, and steel industries."¹⁸ According to some experts, the economic potential of Russia's forestry industry can be estimated at more than 100 billion US dollars.¹⁹

Russia's Forestry Market

With the Russian economy continuing to flourish and demand for timber rising domestically as well as abroad, industry experts believe that Russia can increase its harvesting capacity significantly in the coming years. The total area of forests in the Russian Federation is 1173.4 million hectares and the reserves of standing wood exceed 82 billion m³ (cubic meters).²⁰

In 2005, forest harvesting in the Russian Federation totaled around 186 million m³, making Russia the world's third biggest harvester, after the U.S. and Canada.²¹ The current harvesting yield is around a third of the government's estimated total technical annual allowable cut which has been set at 576 million m³ per year.²² Removals have increased sharply in recent years as demand for industrial round wood and raw logs has increased in domestic and export markets. European associations believe that with the recent Russian legislation (2007 forest code), modernization, and new equipment, the country has the potential to increase the harvest to 250 million m³ within five years.²³

According to official statistics, up to 150 million m³ of wood products is produced in Russia annually.²⁴ With the proper modernization of equipment and the adaptation of Western business practices, industry experts estimate that the country could improve this index by almost 4 times.²⁵ The country's forest-based products industry generated a total output of around \$12 billion in 2005.²⁶

2007 Forest Code

Industry observers believe the new Forest Code opens a new era in the history of forest utilization in Russia. One of the significant changes is in lease terms - the leasing period of the forestry concessions have been extended to 99 years from its previous 50 years.²⁷ Additionally, the government announced a transition from a tender system of awarding leases to an auction-based system. The new Code also contains provisions designed to make Russian forestry projects more attractive to investors. For example, an investor willing to

17 "Timber Industry Development in Russia: Problems and Forecasts." Available on-line at:

[http://www.runa.info/files/5494/Timber%20Industry%20Development%20in%20Russia%20\(Problems%20and%20Forecasts\).pdf](http://www.runa.info/files/5494/Timber%20Industry%20Development%20in%20Russia%20(Problems%20and%20Forecasts).pdf)

18 Russian Forestry Review 2006. Available on-line at:

<http://www.russianforestryreview.com/news/release218.html>

19 Ibid.

20 Ibid.

21 Russian Forestry Review 2006. Available on-line at:

<http://www.russianforestryreview.com/news/release218.html>

22 "Russian timber industry - detailed statistics for year 2006". 27, February 2007. Available on-line at:

<http://www.runa.info/eng/press-center/events/view.html?id=6385>

23 "Russian log exports and lumber production soaring." Wood Markets Monthly. March 2003.

24 "Timber Industry Development in Russia: Problems and Forecasts." Available on-line at:

[http://www.runa.info/files/5494/Timber%20Industry%20Development%20in%20Russia%20\(Problems%20and%20Forecasts\).pdf](http://www.runa.info/files/5494/Timber%20Industry%20Development%20in%20Russia%20(Problems%20and%20Forecasts).pdf)

25 Ibid

26 "Risks & Rewards. Forest, Paper & Packaging in Russia." Pricewaterhousecoopers.

27 "Russian log export tax." CIBC World Markets. Available on-line at:

<http://www.cpbis.gatech.edu/resources/industryreports/CIBC/070313%20CIBC%20-%20Russia%20Log%20Export%20Tax%20Update.pdf>

undertake a project valued at above \$193.7 million can enter into lease agreements without going through an auction.²⁸ To an extent, this measure ensures security of raw material supply to such an investor. The law contains several other provisions designed to reduce investor risk and encourage investment.²⁹ This includes a provision that allows companies to export some logs at a reduced tax rate if a certain amount of the harvest is processed in Russia.³⁰ Another important component of the new code is the establishment of a forestry Investment Fund. The government has announced the creation of special financial instruments and a legislative framework for providing assistance for infrastructure development in the framework of any investment project valued above \$193 million.³¹

Demand Drivers for Growth of Particleboard/MDF in Russia

The top three MDF end-user markets worldwide are laminate flooring (45%), furniture (19%), and building (17%). Each of the following industry descriptions in Russia addresses these consumer demands.

Residential Construction

Residential construction increased by 15% in 2006, which is the highest annual growth rate since 1991.³² As a whole, the construction industry grew by 19.5% in real annual terms in 2006, accounting for 5.8% of GDP growth.³³ Long-term growth in the housing market is being stimulated by the Russian government. In 2005, Russian President Vladimir Putin launched the National Priority Project (NPP), a national initiative focused on heavy investment in education, healthcare, agriculture, and housing. The housing component of NPP includes \$3.5 billion in annual state guarantees to develop Russia's affordable housing sector.³⁴ This means an estimated one to one and a half billion square feet of new housing will be brought onto the market every year.³⁵

According to the Russian Government, about 13.5 billion square feet of available housing is needed to meet the present housing demand of the Russian population. Most of the current available housing in Russia is old, outdated, and rundown. A recently conducted population census in Russia revealed that over half of all private householders occupy buildings that were constructed between the 1950's and 1980's.³⁶

Commercial Construction

Growth is robust in the commercial sector, which runs complementary to the housing sector. In 2006, *Business Week* estimated that foreign investment funds invested as much as \$1.5

28 Zakhar Smushkin. "Growing Illum Pulp." Paper Age. Available on-line at:
http://www.paperage.com/issues/may_june2007/05_2007ilim.pdf

29 Ibid.

30 "Russian log export tax," CIBC World Markets. Available on-line at:
<http://www.cpbis.gatech.edu/resources/industryreports/CIBC/070313%20CIBC%20-%20Russia%20Log%20Export%20Tax%20Update.pdf>

31 Zakhar Smushkin. "Growing Illum Pulp." Paper Age. Available on-line at:
http://www.paperage.com/issues/may_june2007/05_2007ilim.pdf

32 Todd Prince. "Mortgage Market Set to Almost Double in 2007," The Moscow Times -20 march, 2007. Available on-line at:
<http://www.realestate.moscowtimes.ru/archive/realestate/116>

33 Adisa Banjanovic. "Housing in Russia becomes state priority," US Commercial Services. 21 May, 2007.
<http://www.realestate.moscowtimes.ru/archive/realestate/116>

34 "Russia: Mortgage Market," US Commercial Services. August 2006.

35 Adisa Banjanovic. "Housing in Russia becomes state priority," US Commercial Services. 21 May, 2007.

36 "Russian Forestry Review 2006." Available on-line at:
http://www.russianforestryreview.com/files/docs/rfr_promo.pdf

billion into Russian real estate projects nearly double the level in 2005.³⁷ The market is especially attractive to commercial real estate investors who are seeing annual returns that are in the double digits vs. 4% to 5% in Western Europe and the U.S.³⁸ Analysts predict this growth to persist as demand continues to outpace supply by a wide margin.³⁹

Construction of entertainment centers and shopping malls is also on the rise. Moscow is expected to have at least 17 new shopping centers by the end of 2007 as developers look to reap the benefits of rising incomes and growing consumer spending. Expansion is also occurring outside of Russia's major cities as developers have begun investing in the 13 cities with populations of more than one million that are throughout the vast country. By the end of 2008, 11 large shopping malls with a total of about 22 million square feet of new retail space will open in cities like Yekaterinburg, St. Petersburg, Nizhniy Novgorod, and Samara.⁴⁰ Despite the spectacular growth, the market is still considered to be in its infancy and is expected to continue to drive demand for housing in the coming years.

Do-It-Yourself (DIY) Furniture Retailers (i.e. IKEA)

In average, large retail chains in Russia increased their turnover by almost 50% in 2005.⁴¹ This high dynamism ought to attract newcomers into the branch, in which the estimated profit rate is somewhere between 15% and 30%.⁴² Expected strong growth of purchasing power combined with high profit margins in the Russian retail trade is likely to enhance international interest in the branch in the near future.

Obviously, the big bulk of IKEA's products are rather labor-intensive, and thus, suppliers are mainly located on emerging markets. Cheap labor must be combined with advantageous retail prices, which are the most important marketing slogans in IKEA's business strategy.

IKEA's concept is ideal for the post-communist era with gloomy atmosphere and murky decoration of living environment; it is a delight for consumers to get access to modern house decoration items with rational design and at reasonable prices.

IKEA entered the Russian market relatively late. Therefore, it is understandable that the company is now conquering the Russian market with high inputs. From the Russian point of view it is important that IKEA's local investment has a cumulative effect: not only retail should take place, but also extensive orders of supplies from local manufacturers. Obviously, a considerable amount of IKEA-designed products manufactured in Russia is exported to IKEA's international network of furniture shops.

The timing of IKEA's entry into the Russian market seems to be optimal. In the first years of the 21st century, a broad middle class is emerging in Russia eager to improve its everyday living environment. It can be assumed that IKEA will expand its Russian operations rapidly.

³⁷ "The Russian Towers Are Coming," Business Week. 9, October 2006. Available on-line at: http://www.businessweek.com/magazine/content/06_41/b4004066.htm

³⁸ Ibid

³⁹ Sabra Ayres. "Malls more than a capital idea in Russia" International Herald Tribune. 4 October, 2006. Available on-line at: <http://www.ihf.com/articles/2006/09/26/business/remoscow.php>

⁴⁰ Ibid

⁴¹ "Foreign Retailers in Russia," Compiler Trade Portal. November 2007. Available online at: <http://www.compiler.fi/idankaupan/tutkimukset/LTKK37e.html>

⁴² Ibid.

2014 Winter Olympics Coming to Sochi, Russia

Sochi, Russia successfully outbid South Korea and Austria, and was chosen to be the host of the 2014 Winter Olympics. Sochi's successful bid has immediately drawn the attention of both Russian and foreign investors who will spend at least \$20 billion in the development of the area.

These conditions present wood processing manufacturers with a very distinct opportunity to expand their operations in Russia and supply the growing demand in the market. With Sochi's successful bid for the 2014 Winter Olympics, lumber product usage is expected to grow dramatically. From sport facilities to transportation, from new hotels to residential real estate, Sochi and the Krasnodar region offer extensive opportunities for Western players with a global vision.

Competitive Analysis

1. Sonae Indústria, SGPS, SA - Is the largest private employer in Portugal. They concentrate their business on the Iberian Peninsula; the rest of their business is dedicated to Europe and South America. Their competitive advantage is the long-time strategic leadership and vision by one person, Chairman and CEO, Belmiro de Azevedo. They leverage themselves with superior relationship management and sustainable, earth friendly practices.

Turnover/Sales: US\$2.45 billion
Employees: 5400

2. Weyerhaeuser Company - Is the largest American MDF producer. They are second to International Paper Co in forestry products. They currently operate worldwide and have 8 offices in China. Their competitive advantage lies in their superior IT systems. They manage more acres of information faster than any other wood products company in the world. They have the most advanced databasing techniques on the market.

Turnover/Sales: US\$2.44 billion
Employees: 41,000

3. Carter Holt Harvey - Is an Australian holding company that consists of Australian and New Zealand holdings. International Paper is their parent company. Their competitive advantage is

Turnover/Sales: US\$2.2 billion
Employees: 11,300

4. Pfleiderer AG - Is a German holding company. Their primary business is wood engineering, processing, and manufacturing. The company serves furniture industry, DIY and specialist outlets, as well as manufacturers of store fixtures. Their competitive advantage lies in their organizational structure, utilizing their subsidiaries as strategic partners. These practices maximize their synergies and operational efficiencies.

Turnover/Sales: US\$1.92 billion
Employees: 5209

5. Kronoholding AG - Is a Swiss company that is one of the largest manufacturers of wood based panels worldwide. Kronotex is their US subsidiary. Kronostar was founded as the biggest investment project in wood based panel manufacturing in Russia. They are Europe's largest manufacturer of timber materials.

Turnover/Sales: US\$1.44 billion
Employees: 2500

6. Grupo Nueva - Is a South American Group that is controlled by a non-profit trust. They have holdings in Argentina, Brazil, Chile, and Mexico. Their biggest wood manufacturer is Masisa, an Argentine giant. Their competitive advantage is built through leveraging strategic alliances through inclusive business and through their vertically integrated business model.

Turnover/Sales: \$886.5 million
Employees: 5239⁴³

7. Kaindl - Is a German holding company that started as a wood products manufacturer and has diversified into many different businesses. Their competitive advantage is their knowledge. They have a massive database system, superior HR and ERP systems.

Turnover/Sales: US\$579.8 million
Employees: 800

8. FINSA - Is a Spanish wood products company. Their competitive advantage lies in the complete integration of all phases and processes. They pride themselves on rational use of natural resources, human resources in constant evolution, and utilizing the latest technologies to keep all of these facets of business integrated,

Turnover/Sales: US\$259.6 million
Employees: 2400

9. Chinese Dare Group - Is one of China's 520 keystone enterprises. It is the largest MDF producer in China. Their largest MDF producer is Jiangsu. Their competitive advantage is access to cutting edge technology and their geographical proximity to large amounts of capacity and an enormous MDF market.

Turnover/Sales: \$150 million
Employees: 1200⁴⁴

10. Fantoni - Is an Italian wood product manufacturer. Their products are used for furniture manufacturing. Their competitive advantage is derived from their first mover advantage into international markets. Their company was founded in 1882 and they pride themselves on high-quality products made for the end-user.

Turnover/Sales: US\$100 million
Employees: 700

⁴³ These figures represent Masisa's (Argentine Company) sales and employee figures, as they are Grupo Nuevo's largest wood products company

⁴⁴ All turnover/sales figures calculated at the October 30, 2007 rate of 1.44 euros per dollar