World Flooring Production

Roland Dengler, HOMAG Group Engineering

Overview

- Market shares (Floor coverings US market and Western Europe)
- Market development
  - Laminate Flooring, Engineered Wood Flooring, LVT Flooring
  - Profiles + Installation methods
  - Surfaces
  - Delivered DET-Lines from HOMAG Group
- China
  - Flooring production in China
  - Chinese flooring export
  - Reason for the success of Chinese flooring producers
  - Obstacles for Chinese flooring producers in the future
  - Opportunities for American companies in the future

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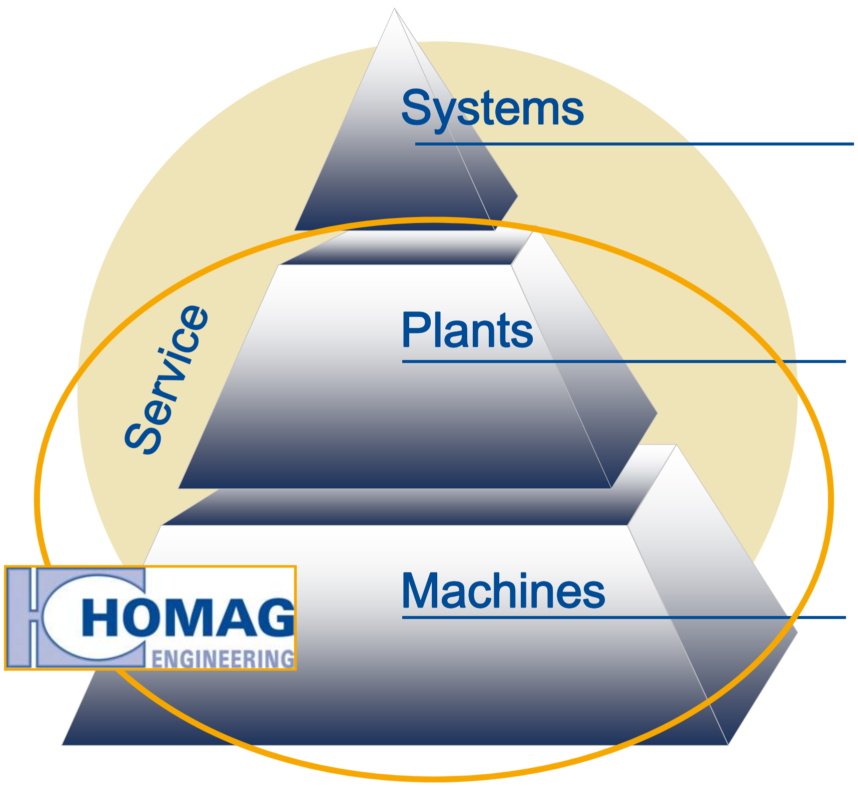

Schuler CONSULTING — HOMAG eSOLUTION

Engineering and setting-up of complex production lines up to complete works

Technologically leading products in the fields of high-end machines as well as in the sphere of standard machinery along the production chain of our customers

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HOMAG Group and strategic partners in flooring

HOMAG

TORWEGGE

BARGSTEDT

BÜTFERING

LIGMATECH

WÄCHTER PACKAUTOMATIK

MASKINSON AB Packaging Machinery

BÜRKLE PROCESS TECHNOLOGIES

Baumer

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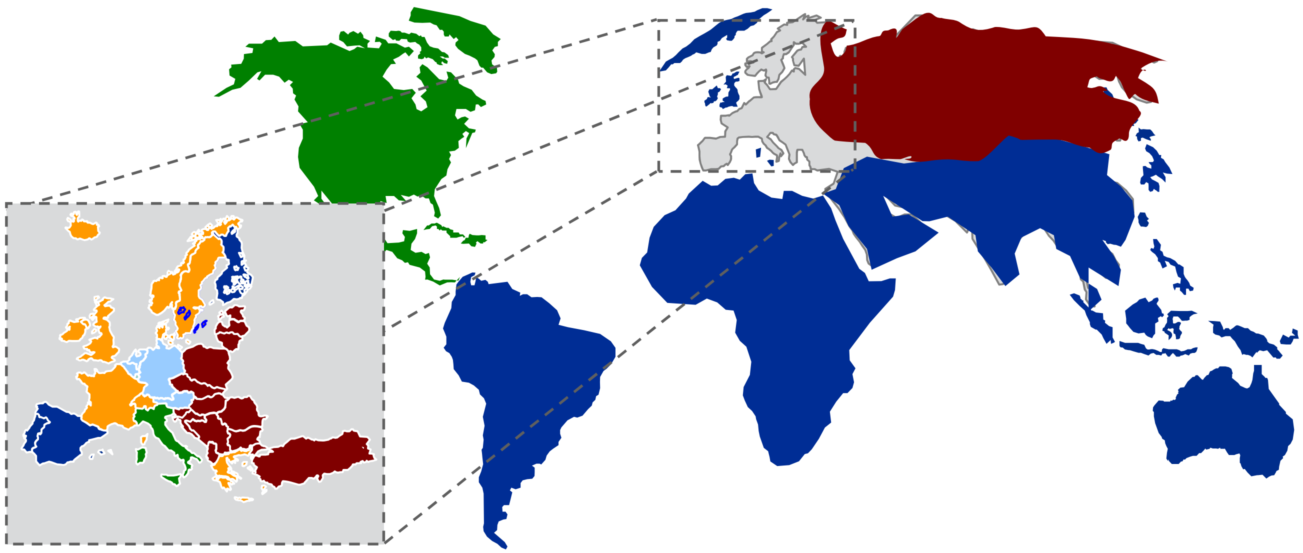

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Market shares

Floor coverings in the US market

U.S. floor covering market sales: 5-year history by square feet

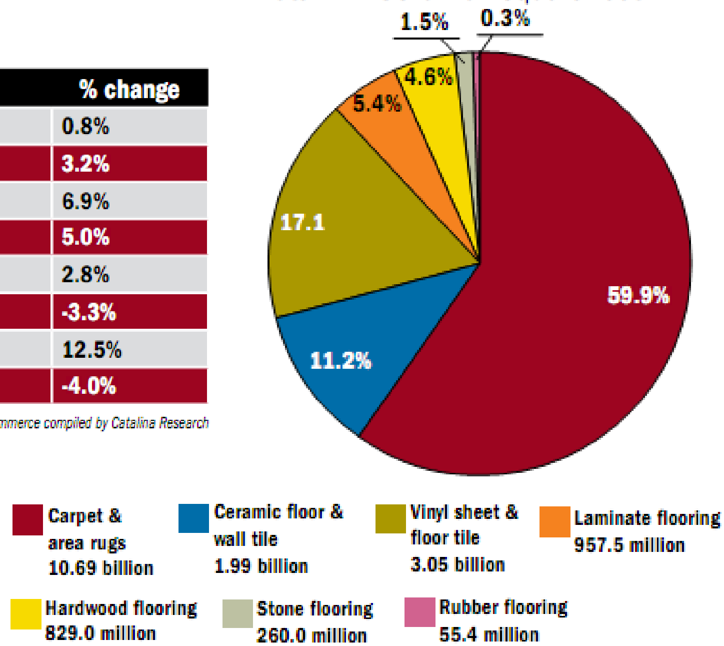
(in millions)

Product sector	2006	2007	2008	2009	2010	% change
Carpet & area rugs	17,027	14,867	12,814	10,601(R)	10,687	0.8%
Hardwood flooring	1,092	989.0	944.5	803.4	829.0	3.2%
Ceramic floor & wall tile	3,303	2,664	2,258(R)	1,848	1,992	6.9%
Laminate flooring	1,215	1,160	1,039	912.0	957.5	5.0%
Vinyl sheet & floor tile	3,292	3,272	3,254	2,784	2,860	2.8%
Rubber flooring	56.2	59.7	60.6	57.3	55.4	-3.3%
Other resilient flooring*	315.8	293.2	270.2	222.8	194.9	12.5%
Stone flooring	395.6	436.4	351.6	270.8	260.0	-4.0%

*Other resilient includes cork, linoleum and other resilient flooring. R=Revised Source: U.S. Department of Commerce compiled by Catalina Research

2010 U.S. floor covering sales by volume

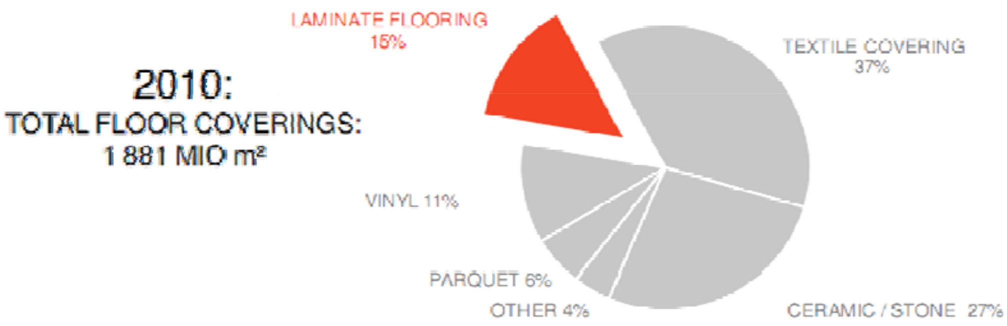
Total: 17.83 billion square feet



Market shares

Floor coverings in Western Europe

	2004	%	2005	%	2006	%	2007	%	2008	%	2009	%
Textile	826	39,7%	814	38,8%	841	38,9%	838	38,4%	818	37,4%	670	37,8%
Stone/Ceramics	605	29,1%	600	28,6%	610	28,2%	615	28,1%	625	28,6%	505	28,5%
Laminate flooring	265	12,7%	280	13,3%	290	13,4%	303	13,9%	305	13,9%	240	13,5%
Vinyl	203	9,8%	212	10,1%	218	10,1%	220	10,1%	225	10,3%	180	10,1%
Wood	106	5,1%	110	5,2%	114	5,3%	118	5,4%	123	5,6%	103	5,8%
Other	77	3,7%	83	4,0%	88	4,1%	91	4,2%	93	4,2%	76	4,3%
TOTAL	2082		2099		2161		2185		2189		1774	



Market share
Laminate Flooring

1995	3 %
2000	9 %
2005	13 %
2010	15 %

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Market development

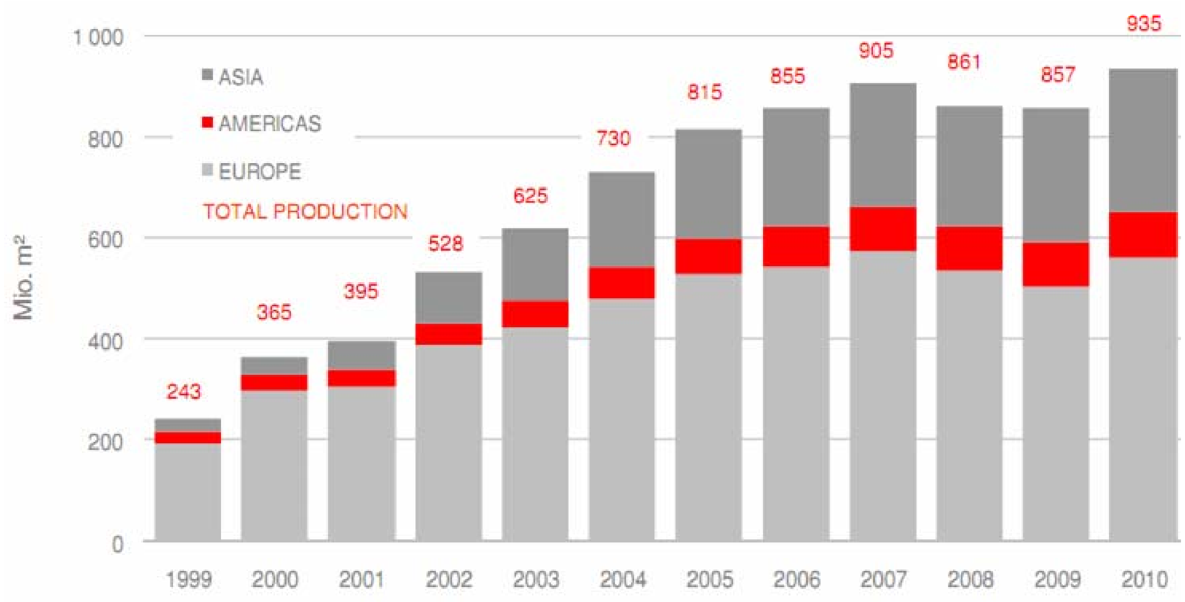
Laminate Flooring

- **EUROPE**
  - Price pressure
  - Small batch sizes + increased product variations → big challenge as production lines have been basically designed for mass production
  - Production volume / sales is stable / going back
- **AMERICA**
  - Import from China to US with low prices
  - Narrow planks
  - Wilsonart stopped production
- **ASIA / CHINA**
  - Stable market due to growing local market in China

Market development

Laminate Flooring

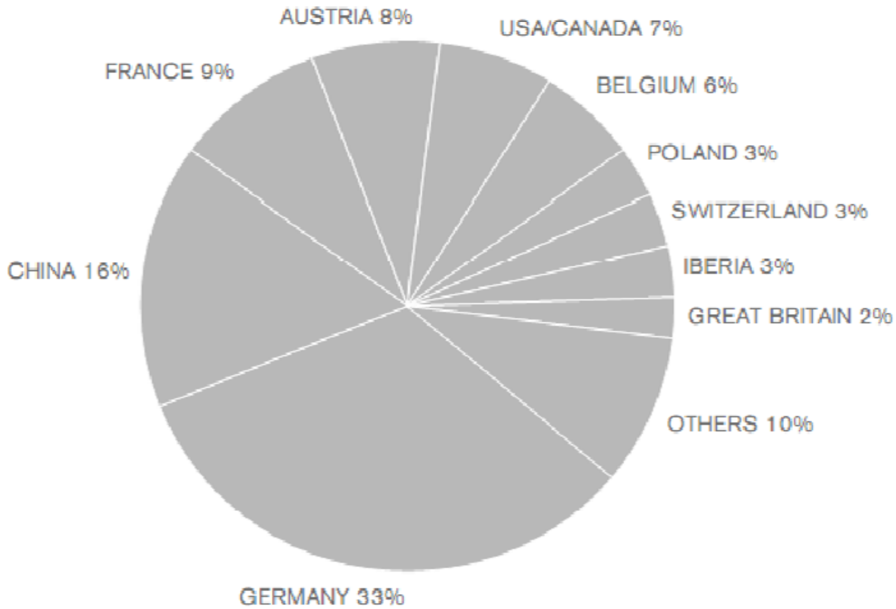
- World Production of Laminate Flooring 1999 – 2010 (Mio m²)



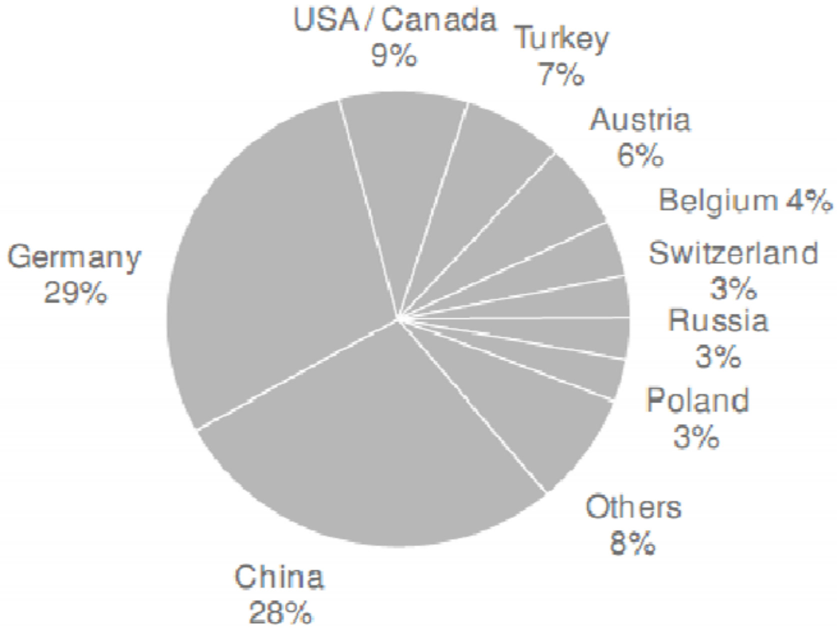
Market development

Laminate Flooring

- World production 2002: 528 Mio m²



- World production 2010: 935 Mio m²



Market development

Engineered Wood Flooring (MLP)

- **EUROPE**
  - Price pressure on standard products results on several bankruptcies (Vito, Lopark, Trio, Boxler, Maderas Iglesias...)
  - French parquet producer Panager + Chene de L'Orne for sale
  - Parquetterie Berrichonne reduces capacity and moves one profiling line to the mother company (Margaretelli, Italy)
  - Forbo closes plant in Sweden
  - Tarkett takes over Marty and reduces capacity in Sweden
  - Boen moves entire profiling + finishing from their plant in Norway to Lithuania
  - Sales and production of Parquet within Europe 2011 stable

Market development

Engineered Wood Flooring (MLP)

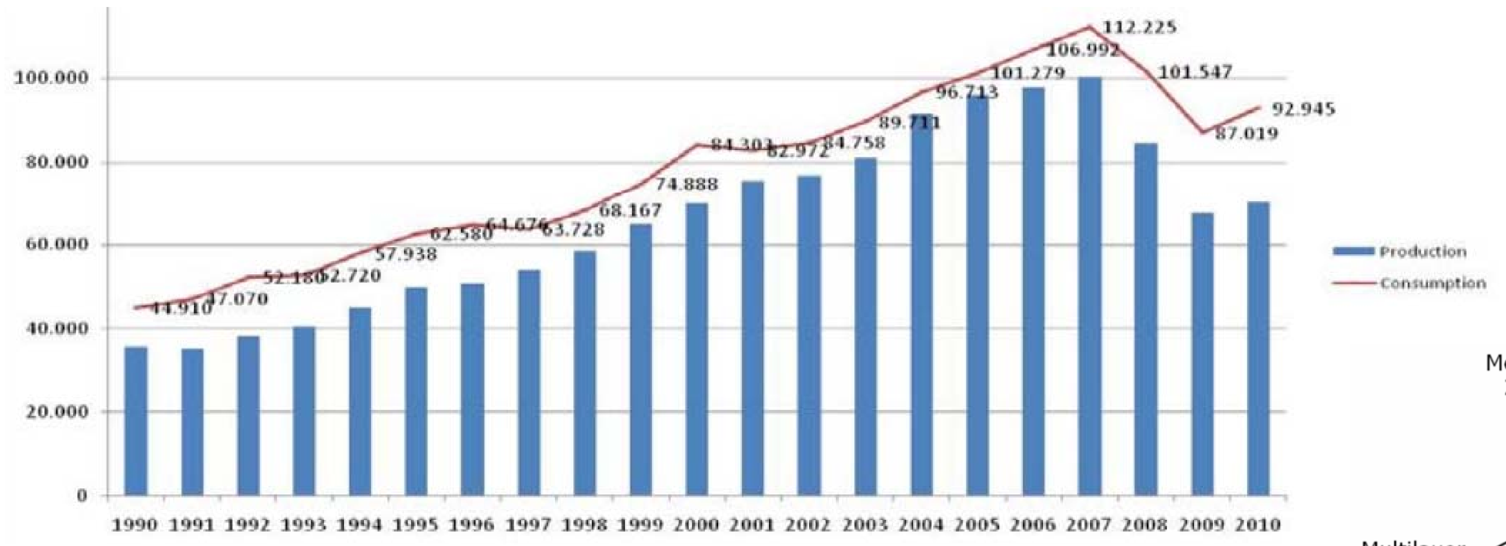
- **AMERICA**
  - First time ever in the US there was a higher sales of EWF then solid wood flooring, with major import from China
  - US flooring producers claim for anti dumping duties against Chinese wood flooring imports which has a market share of 62,5 % of the EWF in the US
    → Anti dumping duties fixed for the majority of the importers to around 5 %

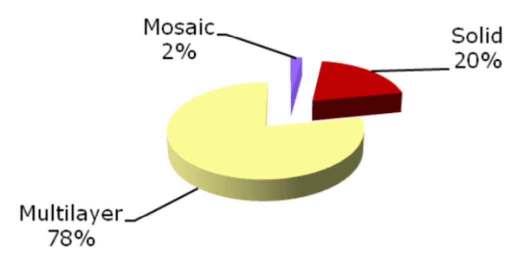
- **ASIA/CHINA**
  - Increased local demand in China + increased export

Market development

Engineered Wood Flooring (MLP)

- Production + consumption of parquet in the FEP countries [1000 m²]



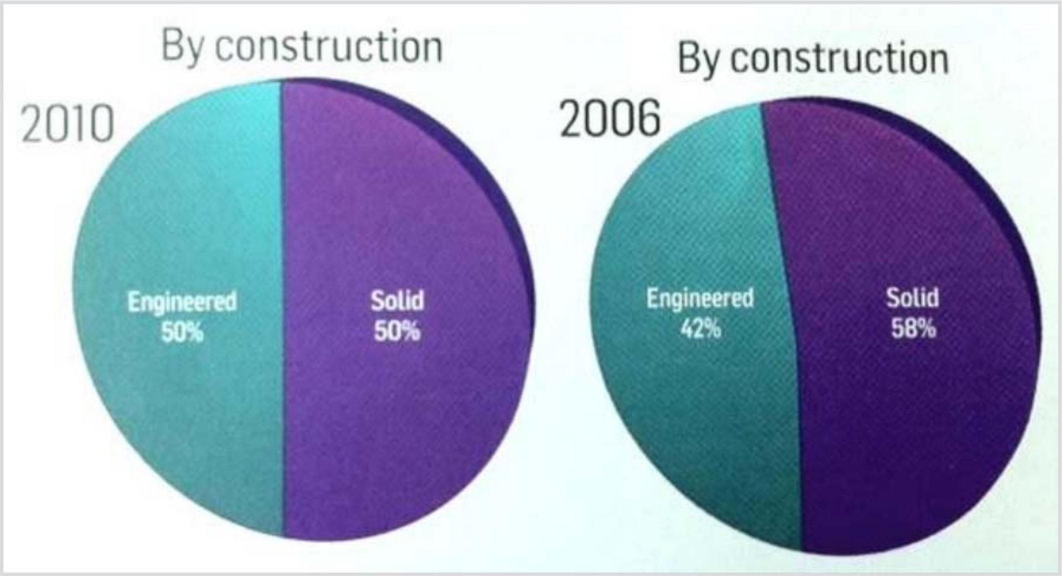


Market development

Engineered Wood Flooring (MLP)

- Consumption of wood flooring in the US [Mio square feet] (Study 2007)

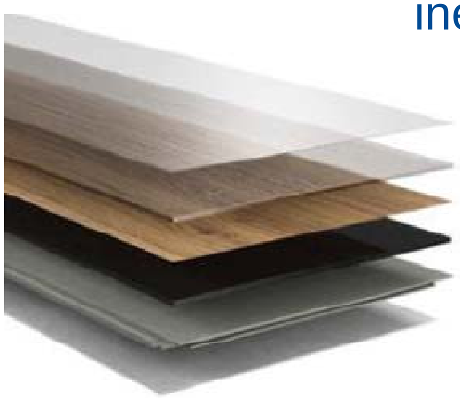
1992	440.7
1993[3]	478.9
1994[3]	523.0
1995[3]	549.0
1996[3]	543.9
1997	712.2
1998[3]	759.3
1999[3]	871.7
2000[3]	861.2
2001[3]	867.7
2002	916.8
2003[3]	962.5
2004[3]	1,093.4
2005[3]	1,155.6
2006 P[3]	1,033.2
2007 E	919.6
2012 F	1,129.6



Market development

LVT Flooring (Luxury Vinyl Tiles)

- Gets fast new market shares in North America and UK
- New production plants, mainly from China
- Massive price decline (up to 80% within one year) in combination with quality reduction
  → a lot of quality problems, mainly with new inexperienced Chinese producers



1. Wear and scratch resistant PUR coating
2. Transparent Vinyl coating
3. Printed Vinyl decor layer
4. Vinyl core layer
5. Moisture-proof HDF supporting material
6. Compact SoundBloc™

- Windmöller Flooring + Unilin have entered into a cross license agreement concerning LVT Flooring
- After several Cork producers even Pergo starts to sell LVT Flooring with MDF core layer

Market development

Profiles + Installation methods

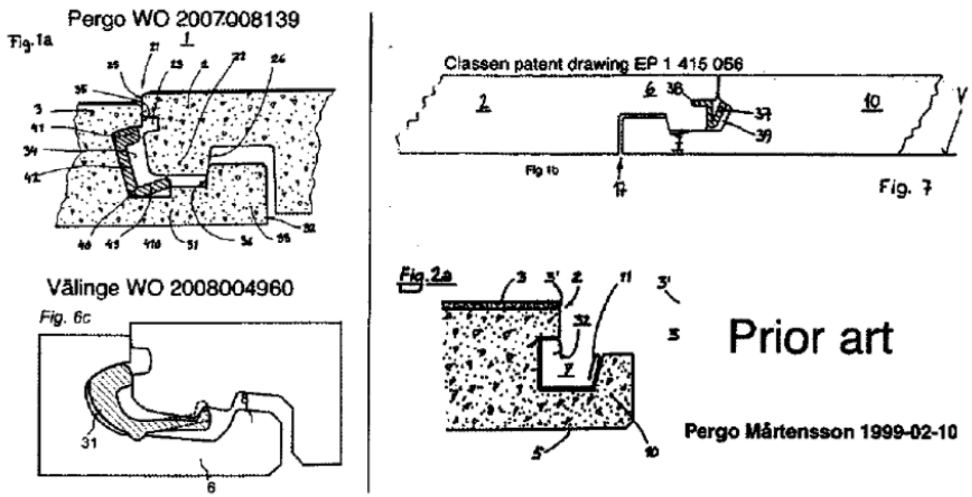
Fold-down technology gets more and more popular,
but big uncertainty on the patent situation due to not solved patent issues

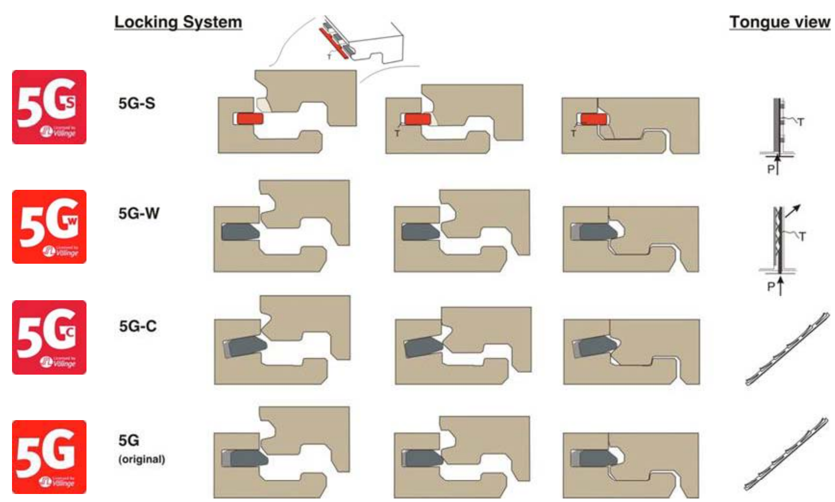
- License agreement between Unilin + Pergo
- Välinge added to their invention list additional patents within the 5G family
- Välinge + Classen terminate cross License
- Pergo wants to sell licenses by themselves
- Cross license agreement between Meisterwerke + Välinge
- Confrontation Välinge – Pergo/Classen
- Cross license agreement between Classen + Välinge in 01/2012
- Cross license agreement between Unilin + Windmöller for LVT Flooring
- Cross license agreement between Välinge + Mannington for LVT Flooring

Market development

Profiles + Installation methods

**Fold-down technology gets more and more popular,
new connections developped by Välinge due to temporary uncertainty on the patent situation**





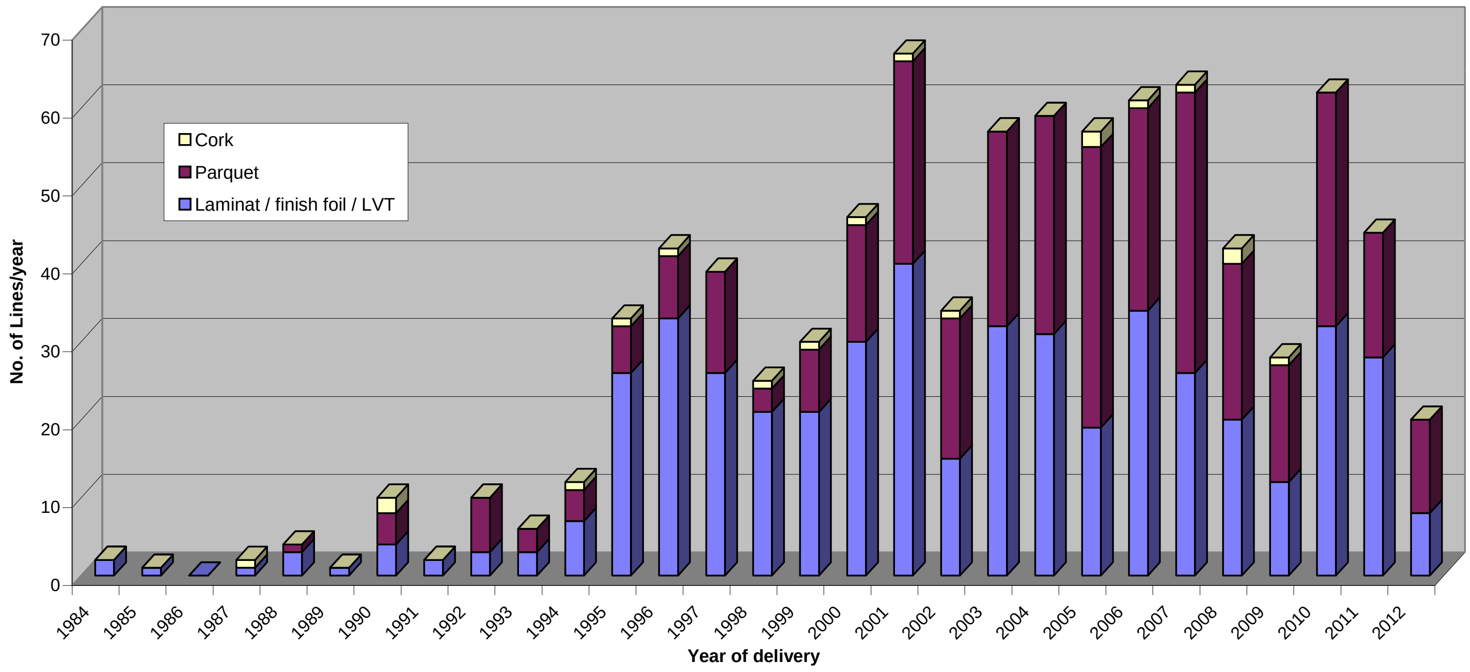
Market development

Surfaces

- Wood Fiber products from Välinge (Parador, Tarkett, Krono, Schulte, Alloc) Production 03/2012 temporarily suspended by Schulte due to technical problems
- New investments in digital printing in single and multi pass technology
- Egger, Kaindl, Amorima and Liko start new product, printed Flooring on a thin Cork Layer which is glued to MDF

Market development

Delivered DET-Lines from HOMAG Group



China

China

Flooring production in China

+ LVT – Flooring, production 2011 approx. 20 Mio. m²

Year [Mio/m²]	Laminate Flooring	Solid Wood Flooring	Bamboo Parquet	Engineered Wood Flooring	Other Wood flooring	Total Amount
2004	150,0	70,0	5,0	33,0	0,0	258,0
2005	190,0	50,0	6,0	46,0	0,0	292,0
2006	200,0	45,0	25,0	60,0	0,0	330,0
2007	220,0	44,0	20,0	75,0	2,0	361,0
2008	198,0	42,0	24,0	78,0	1,8	343,8
2009	212,0	42,0	25,0	83,0	2,2	364,2
2010	238,0	43,0	25,3	89,0	3,7	399,0
2011	235,0	42,6	25,1	90,7	3,6	397,0

China

Chinese Flooring Export

- 235 Mio. m^2 produced Laminate Flooring
  → 80 Mio m^2 are exported to
  USA, Canada, Russia, Asia-Pacific, South America, Africa

- 160 Mio m^2 produced Solid-, Engineered- and Bamboo Flooring
  → 40 Mio m^2 are exported to
  USA, Canada, Russia, Europe, Asia-Pacific, South America

- 20 Mio m^2 produced LVT flooring
  → 18 Mio m^2 are exported to
  USA, Canada, Europe, Russia, Asia Pacific, South America

China

Reason for the success of Chinese flooring producers

- **What do you want to hear?**

  → Subsidies by government
  → Low labor costs
  → Stolen raw material
  → Free financing of machines, plants etc.
  → ...

China

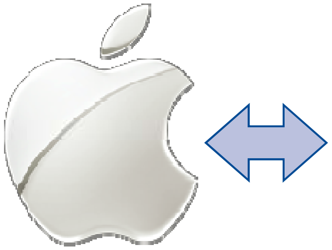
Reason for the success of Chinese flooring producers

- **Reality about your biggest competitor and your chances and ways to win the battle?**

  → Not according to common MBA doctrine but learned by experience:
  18 years travelling to China and selling over 280 profiling lines to China, thousands of conversations to Chinese flooring producers and advisors for the Chinese government

China

Reason for the success of Chinese flooring producers



- Steal an idea from somebody else in the world and copy it
- Only respect intellectually rights if you can't avoid it
- Be faster than your competitors
- Have an entrepreneur with a vision and long time strategy for the own success, single person decisions!
- Invest in marketing, marketing, marketing
- Mass production of the product to make it cheap
- Have a look on the market and make products for the market request - guide the market
- Big local market

China

Reason for the success of Chinese flooring producers

- **History**
  - Laminate Flooring
    Invented in Europe (Pergo, end of the 1970ies, industrialized end of the 1980ies by Pergo, Lamett, Alsapan, Witex etc.)
    - China: - First profiling line delivered to China in 1995 (Huili, Supplier: HOMAG)
      - 15 imported profiling lines by the end of 1997
      - Around 400 producers and over 1200 profiling lines in 2012
    - USA: - First line delivered in 1995 (Wilsonart, Supplier: HOMAG)
      - 10 imported profiling lines by the end of 1997
      - Around 7 producers with around 25 profiling lines in 2012

China

Reason for the success of Chinese flooring producers

- **History**
  - LVT Flooring with Click-Profile
    Invented in Europe (Windmöller Flooring 2007 in Germany, using Korean raw material, today profiled in Europe)
    - China: - First profiling line delivered in 2008 (Supplier: Yasuda as HOMAG couldn‘t catch the delivery time ...)
      - Around 20 produces and around 30 profiling lines in 2012
    - USA: - Until today only sales, no production

China

Reason for the success of Chinese flooring producers

- **History**
  - Engineered Wood Flooring (MLP)

    Invented in Europe (1941 Kährs, Sweden, was granted a patent for an engineered wood flooring board), a new installation method was also introduced - „the floating floor“
    - China: - First profiling line delivered in 1993 (Jilin, Supplier: Homag China Golden Field)
      - 15 imported profiling lines by the end of 1997
      - Around 400 producers and more then 1000 profiling lines in 2012

      USA: - First EWF plant (Harris Tarkett? end of the 1980ies?)
      - First 3-ply plant Award Flooring in 1997 (DET-Supplier: HOMAG)
      - Around 15 producers with around 30 profiling lines in 2012

China

Reason for the success of Chinese flooring producers

Get some ideas from overseas,
copy them
and be fast(er) !!!!

China

Reason for the success of Chinese flooring producers

- **Support by government**
  - Strategic planning and guiding the investment / business development
    - 1990ies: Government pushed industrialization, tax free import of machines, VAT refund for export products → Goal: “getting foreign currencies”
    - 2000ies: Reduction of sponsoring, cancellation of the VAT refund for solid wood products
    - 2010ies: Chinese government was focusing on
      - local market and getting similar living standards along the cost line and in West (inner) China (going West)
      - securing raw material sources for the local market
      - promoting “engineered products” and reducing the waste of raw material (timber) by a lot of University studies etc.

China

Reason for the success of Chinese flooring producers

Long term strategy, planned by the government !

China

Reason for the success of Chinese flooring producers

- **Entrepreneur**
  - Chinese mentality: international dealing
    making money by producing
    selling commodities
    be faster and cheaper than the competitors
  - Main flooring industry belongs to young entrepreneurs (age 30 – 45)
    - No background in woodworking but the right feeling to make money
    - Relationship to colleagues from university, government etc. to build up a new company
  - No calculation sheets, limited business planning, no overhead
    – just one boss, fast decisions, all investment decisions based on relationship (no secrets)

China

Reason for the success of Chinese flooring producers

**Young, motivated entrepreneurs,
no overhead, fast decisions, relationship !**

China

Reason for the success of Chinese flooring producers

- **Wide range of highly qualified labor**
  - Difficult to find highly qualified labor with background from University and able to speak English or other foreign languages for high/mid management positions in the 1990ies
  - Today situation improved a lot:
    - Lots of people working in this industry
    - In the meantime people have nearly 20 years experience
    - Chinese education system improved and thousands of engineers graduate university every year

China

Reason for the success of Chinese flooring producers

Experienced specialists
and rising number of well educated students
from university !

China

Reason for the success of Chinese flooring producers

- **Infrastructure**
  - Various machine producers (HOMAG, Dieffenbacher, Weinig from abroad, and several local producers)
  - All international tooling producers are producing PCD tools locally
  - Good back-up with small mechanical manufacturers
  - Good logistic inland (road, train, flights) and abroad (shipping, flights)
  - One of the best internet distributions world wide
  - Big international exhibitions (Domotex)
  - Big community of Chinese contacts which are living overseas and work as agents etc.

China

Reason for the success of Chinese flooring producers

**Due to the number of flooring producers,
China has today one of the best infrastructures
in this business area !**

China

Reason for the success of Chinese flooring producers

- **Be successful on the toughest market, then you can win the world markets**
  - The toughest market in flooring industry is easy to spot on:
    - China with the biggest number of producers and therefore the biggest competition
    - Germany with the lowest prices and the stingiest customers

→ Find a way to be successful in this markets:
- For China: Brand name, thousands of shops nationwide for direct selling
- For Germany: Concentrate on products you can sell cheap
  Mass production for example for 3-strip engineered wood flooring
  Don‘t try to sell laminate flooring in Germany where local producers are selling it for less then 2,5 Euro/m² (0,3 US$/ft²)

China

Reason for the success of Chinese flooring producers

Define your markets and concentrate on them !

China

Reason for the success of Chinese flooring producers

- **Flexibility and wide range of products**
  - Have a look on the weak points of your competitors
    - Most US / European producers are fixed to a certain product range due to production schedule, machinery etc.
    - Chinese producers usually produce every type / style of flooring even with low quantity
    - Chinese producers have usually low automation and can change quickly the product dimensions, surfaces etc.
    - Create a trend and push new products before other producers can do it (for example LVT flooring with Click/Loc-Profile)

Reason for the success of Chinese flooring producers

Be flexible in your product range and push a market trend !

China

Reason for the success of Chinese flooring producers

- **Concentrate investment on main equipment which is important for final quality and image**
  - Investment costs in machinery are in China more expensive than in USA / Europe
    → 11% import tax + 17% VAT (not or only partially reimbursable)
  - Most companies concentrate on some main equipment, the rest is sourced locally (with or without VAT invoice ...)
  - Most companies have no or only limited automation (around 5 – 10 times more employees than in European factory for the same output)
  - Price for locally produced machines approx. 30 – 40 % cheaper than imported machines (labor costs, material, no import tax etc. for example HOMAG DET produced at HOMAG Machinery Shanghai)
  - Copied locally produced machines approx. 60 % cheaper than imported machines (with some compromises in quality standards, support etc.)

Reason for the success of Chinese flooring producers

Reduce initial investment and concentrate on equipment which is important for quality and image !

China

Reason for the success of Chinese flooring producers

- **Pricing and cost calculation**
  - Opposite to „Western“ way of calculation of a manufacturing price:
    - Chinese producers usually only calculate variable costs
    - Chinese don‘t care about depreciation, costs for building and infrastructure etc.
    - Chinese often just calculate: raw material cost
+ percentage yield per m² raw material
+ fix price for all other costs like labor, energy, etc.

    - More important issue is to get the deal than to check how you can do it

China

Reason for the success of Chinese flooring producers

Simple calculation scheme, fast decisions !

China

Obstacles for Chinese Flooring Producers in the future

- **Increase of labor cost**
  - Actually Chinese labor is not cheap anymore:
    - Worker 40.000 RMB (approx. 6.300 US$) / year
    - Annual growth of more than 20 % / year
    - No cheap labor available anymore along cost line (Pearl Delta, Shanghai, Beijing etc.) due to rising possibilities of migrant workers to find a job in West China
    - New labor laws define reduced overtime to max. 60 hours / week
    - Additional monthly salary for each year of membership in the company when workers leave / or even get fired

→ Future investment in handling equipment → Reduction of flexibility

China

Obstacles for Chinese Flooring Producers in the future

- **Difficulties to get cheap raw material**
  - More and more difficult to get cheap (illegal) raw material from Russia, South East Asia (Lao, Vietnam, Indonesia) or from Africa or South America
  - Companies have to pay the world market prices for legal and certificated raw material as requested in some markets (specially Europe)
- **Environmental laws**
  - More and more countries banish hazardous ingredients like formaldehyde

→ Higher value glue like EPI must be used

China

Obstacles for Chinese Flooring Producers in the future

- **Increase of building costs**
  - 1 m² of factory building costs 600 RMB (approx. 95 US$)
  - Increase approx. 20 – 30 % per year ...
  - Land and building get more expensive

  → Future investment in more concentrated processes, less manual handling, reduction of warehouses

- **No subsidies for export products**
  - Government concentrates on products for the local market
  - Reduction / cancellation of subsidies for export products
  - No VAT refund anymore

  → Export products get 17 % more expensive sooner or later

China

Obstacles for Chinese Flooring Producers in the future

- **Energy costs are rising**
  - 1 kWh electricity costs 0,8 RMB (approx. 0,126 US$)
  - Increase approx. 20 % per year
  - In some areas in summer only 6 days / week electricity available ...

- **Rising transportation and logistic costs**
  - Import of a lot raw material
  - Export costs for transporting goods to their customers far away

China

Opportunities for American companies in the future

- **Get some ideas for new products from ......, copy them and be fast(er) !**
  - Don‘t follow the old fashioned style product where you can only compete by price
  - Get some new ideas and if you believe in them, be fast(er)!
  - Why should EWF be always based on plywood / rotary peeled veneer?
  - Why should surfaces show the natural structure of wood and not be wood with printed surface?
  - Why to use EWF only indoor? What‘s about outdoor market and different material?
- **Long term strategy**
  - Create a long term strategy, act and not react only on small market changes
- **Entrepreneurship**
  - Make fast decisions, reduce overhead, trust your stomach and not (only) long Power Point slides and cost calculations ...

China

Opportunities for American companies in the future

- **Infrastructure**
  - Location of your plant according to the best infrastructure
  - Close to the supply market and/or close to the customer
  - Make the best compromise (think about future risks and rising costs for labor, energy, transportation etc.)
- **Define your market and concentrate on it**
  - Either be local or nationwide supplier with brand name and hundreds of shops / agents
- **Be flexible in your product range and push a market trend**
  - Don’t limit your production to a small product range
  - Keep it flexible for future changes (even when it needs some manual handling)
  - Better to start production fast and have only 80 % automation then never

China

Opportunities for American companies in the future

- **Reduce initial investment and concentrate on equipment which is important for quality and image**
  - Concentrate on main processes which make your product unique or which are obviously important for quality and branding
  - Don't kill the project/calculation by making the new investment over-engineered. Automation is important on a mass product but not for C-products
- **Create an international team with experienced specialists and young motivated well educated staff**
- **Be aware of future increase of costs for energy, transportation etc.**

HOMAG Group Engineering – Flooring Solutions

International background
Experience
Solutions for all production requirements