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The HASSLACHER Group: The Capital Equipment Decision

A visitor to Sachsenburg, a quiet village nestled in the Austrian Alps, might not know that it was the headquarters of the HASSLACHER Group (Hasslacher), Europe's largest producer of glued laminated timber. It was early May 2022 and Christoph Kulterer, CEO and owner of the Hasslacher, wanted to decide what to do with €40 million in glued laminated timber factory equipment sitting in a Polish warehouse. The equipment had been ready to enter Russia on February 24th, 2022, the day the Ukraine was invaded. Given that the borders were closed, arrangements had been made to temporarily store the equipment.

Mass timber products included glued laminate timber and cross-laminated timber. These were valued-added goods made from softwood lumber that was resurfaced and glued together. Glued laminate timber, or *glulam*, was used in commercial construction in place of concrete or steel frames. Cross-laminated timber, or *CLT*, was multiple layers of planed lamellas glued together, and was used to form walls, floors, and ceilings. While regular timber products sold for about €200 per cubic meter, glued timber products could command prices between €500 and €1,000 per cubic meter depending on quality, strengths and engineering design.

Hasslacher had intended to upgrade its plant located in Malaya Vishera, Russia, which was about 200 kilometres from St. Petersburg. The plan had been to double timber production to 200,000 m³ and to upgrade it to produce up to 50,000 m³ of glulam products per year for the Asian market.

Christoph's options were to wait for the Russian and Ukrainian war to end and then to proceed with the upgrades, to buy a basic sawmill in Eastern Europe and upgrade it, to look for an acquisition in North America, or to sell the equipment. "We have to make a decision that will be best for the long-term even though we don't have all the information we need in front of us," remarked Christoph. "We have close relatives and long-standing employees working for us in Russia and Asian customers lined up for our glulam product. On the other hand, there is significant amount of uncertainty about the political situation. It's not an easy decision for us to make."

The global market for timber

Starting with tree logs, sawmills cut and planed the wood to create timber, also known as lumber in the U.S. and Canada. The level of processing differed, ranging from cutting the wood to produce standard planks to engineered glulam or CLT which required additional steps.

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While timber was used extensively in residential home construction in North America, concrete and steel were more commonly used in multistorey residential or industrial buildings around the world. Increasingly, there was a realisation that the use of engineered wood could make buildings more environmentally-friendly because carbon was stored in the wood and the use of wood reduced the use of more carbon-intensive materials.

Hasslacher processed wood only from sustainable sources. The forests from which it sourced its wood were managed according to strict guidelines. In fact, its sourcing program had been reviewed by a third party, the Programme for the Endorsement of Forest Certification Schemes (PEFC) and had its seal of approval.

The importance of sustainability in the construction industry

Driven by customer demand, there was an increasing focus on lowering emissions and carbon footprints in the construction industry. Companies were looking at sustainable construction methods and the lifecycle impact of materials used. Deloitte, a consultancy, described these efforts, noting that the improvements would come at a cost:

> The engineering and construction (E&C) industry is focusing on sustainable development, overall energy consumption, and greenhouse gas (GHG) emissions. Globally, the built environment accounts for 39% of gross annual carbon emissions. This includes operational carbon—the ongoing carbon emissions from day-to-day use—and embodied carbon—all the carbon emitted in producing, transporting, and disposing of construction materials. E&C companies and suppliers are feeling the pressure to lower the carbon footprint of new and retrofit construction in their pursuit of net-zero emissions. According to a survey by Dodge Construction Network, more than 90% of US E&C companies receive requests from customers to lower the amount of embodied carbon used in construction projects. However, the capital expenditure required to realise this vision can be considerable. A new look at sustainable buildings may help offset the needed investment, either as new construction or a retrofit of an existing building. The industry's trifecta of potential solutions—sustainable materials, sustainable methods, and sustainable models—can help drive sustainable buildings.[1]

A focus on the environmental costs of logistics was part of the analytical framework at Hasslacher. A senior manager stated: “A sustainable logistics concept called "logs/sawn timber two-way shuttle" for the supply of our plants with the raw material wood has been successfully introduced. The aim is to avoid empty trucks by transporting packages of sawn timber for our plants on the way back of the log transports. This concept is sustainable on the one hand and helps to ensure that the logistics costs flow back into the Hasslacher on the other hand. Another sustainable logistics concept is the transfer of containers to rail. The pre-carriage to the nearby terminal is organised exclusively with the company's own fleet and regional partners. At the terminal, the sawn timber is stowed in sea freight containers and sent by rail directly to the southern ports of Trieste and Koper. From there, the containers are shipped by sea all over the world. Logistics also focuses on multimodal transport. For long-distance transport for example to Scandinavia or southern Italy, the possibility of intermodal transport or rail transport is being examined in order to achieve the greatest possible CO2 savings.”

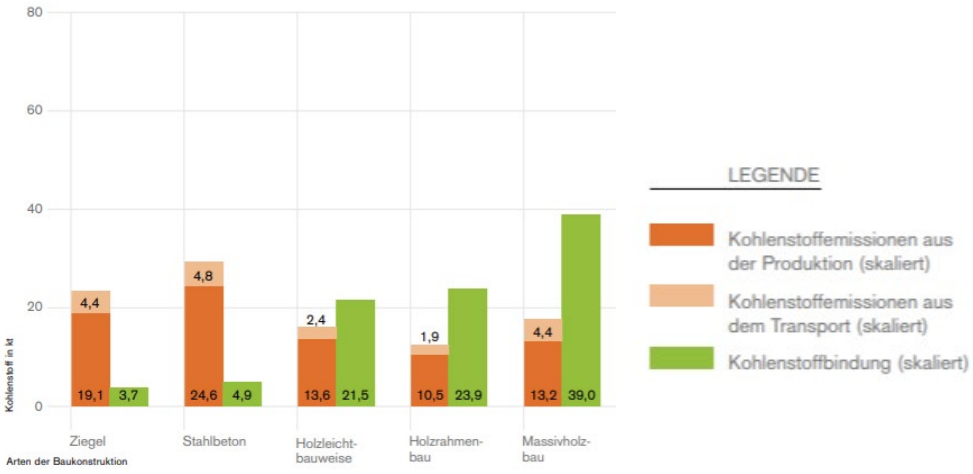
The following chart shows the environmental impact of the three building materials using wood as the basis for comparison. The focus of the study was the material used in the support structure in a 2,300 square foot single-family home. For example, using concrete as the support structure - instead of wood - had a climate impact 50% higher:

Table 1: Environmental impact comparison, wood indexed to 100[2]

Environmental impact comparison, Wood indexed to 100	Embodied energy	Climate impact	Negative impact on air quality	Negative impact on water	Ressources consumed by weight	Waste produced
WOOD	100	100	100	100	100	100
METAL	153	123	174	347	114	79
CONCRETE	220	150	215	214	193	137

For each of these materials, their relative contribution to global warming differed across their lifecycle. For example, for concrete and steel, the manufacturing process accounted for more than 85% of their environmental impact:

Table 2: Relative Carbon Emissions from Production Process[3], Transport[4] and Stored Carbon Value of the Building, scaled for comparison purposes[5]. Brick (Ziegel); Reinforced Concrete (Stahlbeton); Light Frame, Wood Construction (Holzleicht Bauweise); Wood Frame Construction (Massivholzbau):[6]



Yet, while most research suggested that wood was more environmentally-friendly as a building material, there were others who suggested that it would be better to leave trees unharvested. One researcher suggested that only 20-25% of a harvested tree ends up as timber: the roots are still in the ground (20-25%), small branches are taken off and bark is removed (the remainder). In addition, any rapid growth of the timber industry would require more land to be used, contributing to a "global land squeeze".[7],[8]

The global timber market was forecast to be worth over $800 billion by 2023.[9] The value of timber used in building construction was $887 million in 2021 and this market was expected to grow to $1.63 billion by 2030.[10] The global glulam market was $4.2 billion in 2023[11] and the global CLT market was $1.3 billion in 2023.[12]

Europe accounted for about two-thirds of each of the latter two market segments. From 2021 to 2022 growth had been high in Europe due to two factors: a beetle infestation had prompted more trees to be pre-emptively cut down, reducing input prices. Second, demand for timber had been rising, boosting manufacturers' prices. This double phenomenon, while good for the industry, had sparked capacity building by timber processing firms.

In the glulam and CLT segments, Europe was the biggest market, with Austrian and German companies alone forecast to be producing and selling 2.84 million m³ in 2023. The Asian market was about 200,000 m³ for CLT and Japan's market alone consumes 3 Mio m³ of glulam. And the U.S. market for glulam was 429,600 m3 in 2023[13] here was an estimate of the growth in glulam and CLT demand and estimated industry capacity by region:

Table 3: Glue-Laminated Timber and Cross-Laminated Timber Markets and Utilisation[14]

	2023	2024	2025	2026	2027	2028	2029	2030
World	6%	4%	5%	5%	6%	6%	6%	6%
Europe	3%	1%	1%	4%	4%	4%	4%	4%
USA	10%	10%	8%	8%	8%	8%	8%	8%
Asia	6%	6%	7%	8%	8%	8%	8%	8%

Industry Capacity Utilization in %

	2023	2024	2025	2026	2027	2028	2029	2030
World	70%	70%	70%	70%	70%	70%	70%	70%
Europe	50%	50%	50%	50%	50%	50%	50%	50%
USA	95%	95%	90%	90%	90%	90%	90%	90%
Asia	95%	95%	90%	90%	90%	90%	90%	90%

A typical European or American sawmill processing 200,000 m³ generated about €40 million in sales and had a net profit of 5%. Upgrading this operation to produce glulam and CLT meant erecting and equipping a new factory at a cost of €10 million, with a new Glulam or CLT line costing another €50 million. This glulam and CLT factory might ramp up to produce 50,000 m³ in mass timber products after three years and generate an operating profit of 20% of sales.

The Hasslacher

Jakob Hasslacher founded a wood grinding mill in 1901 in Sachsenburg and, 120 years, later, the Hasslacher (Hasslacher) was Europe's largest producer of glulam, with production volume of 355,000 m³ from its four European plants. Hasslacher employed 1,800 employees in Austria, Germany, Slovenia and Russia and produced sawn timber, surfaced timber, glulam, CLT and structural finger-joined solid timber. See **Exhibit 1** for Hasslacher's financial statements.

Over the past century, the Hasslacher family had navigated through business challenges and had adopted innovative practices. In 1959, a 20-year old Herbert Kulterer, grandson of Jakob Hasslacher, after a visit to a mechanised sawing hall in Sweden, modernised Hasslacher's operations. Over two decades in the 1960s and 1970s he relied on technology to double the productive capacity of the Sachsenburg sawmill. In the 1980s, capacity was doubled again with the installation of circular saws and other equipment. Another upgrade to install a chipping line, and the sorting and drying of wood doubled capacity yet again, this time to 160,000 m³. By the start of the new millennium, the Sachsenburg mill had seen a 100-fold increase in capacity since its founding.

Not every venture succeeded: Hasslacher pulled back from producing white millboard for paper plates and other party articles when faced with higher volume (and thus lower cost) products from Germany, after Austria joined the European Union in 1995. There were setbacks too: in 1998 a fire destroyed the Hasslacher sawmill in Sachsenburg and the Kulterer family, led by Herbert, had to decide if it was going to spend €20 million to rebuild or divest. A decision was made to rebuild and to enter the engineered wood products segment. "Our father asked us if we wanted to take on the business," recalled Christoph. "It was clear to us that this was not a trivial decision to make. Without further investment the business would stagnate. It wasn't clear in 1998 what we should do going forward, from a product-market perspective. Anything we wanted to do required committing millions in capital to the business."

Christoph took over the wood processing side of the business from his father and Stefan, his brother, took over the forestry side. "I had always been aware of the fact that I was taking over a successful multi-generational company. The odds are against family-run companies surviving – let alone thriving – past the third or fourth generation," stated Christoph. "It's an enormous responsibility. Add to the fact that Hasslacher is a key employer in many of the small towns in which we operate and it is clear that all eyes are on the family – and me – to see that our company continues to be successful."

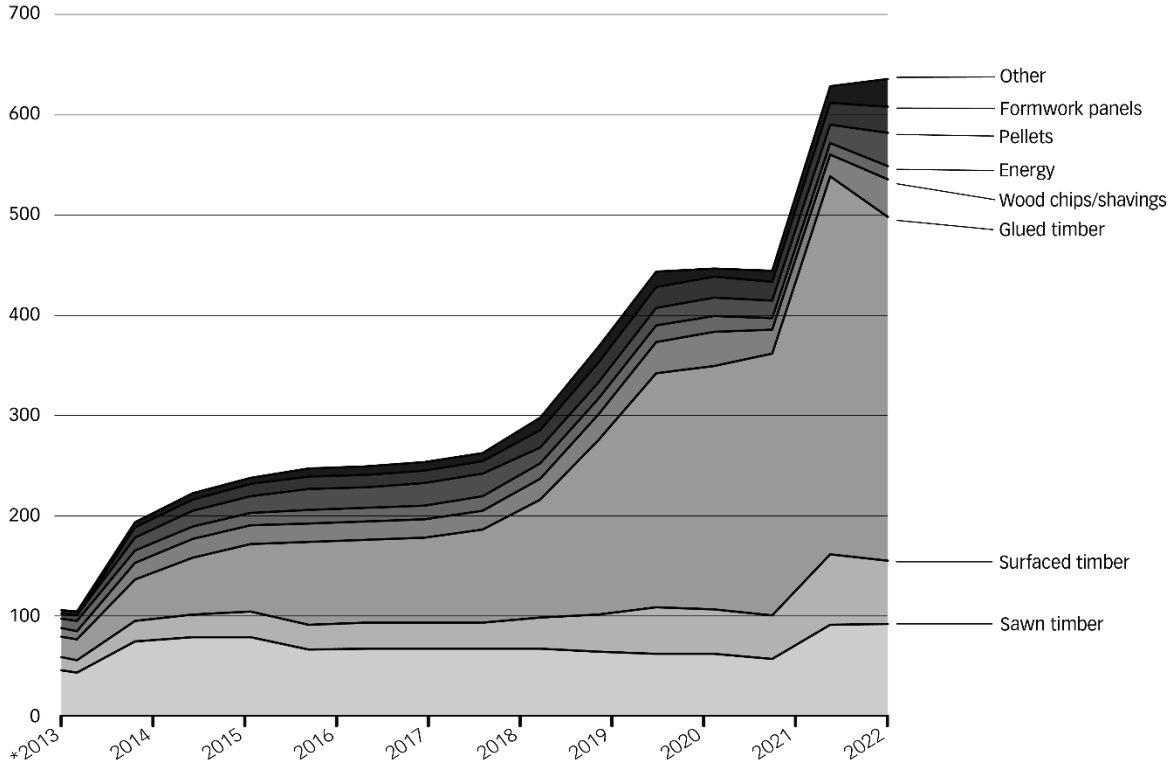
Taking advantage of a slowdown in the industry during the Great Financial Crisis of 2008-2009, Hasslacher expanded, and purchased businesses including Hasslacher's current operations in Malaya Vishera, Russia.

The Russian operations, Hasslacher Les OOO (HLS) was founded in 1992 by Christoph's father-in-law's firm, Holzindustrie Leitinger GmbH. Hans-Peter Leitinger had been pleased to sell HLS to Hasslacher so that it could remain in the family. "The HLS opportunity came up in a family conversation and I took some time to review the possibility of acquiring it," said Christoph. "I met with our senior team locally and our international sales team. We analysed the operation and thought about how we could incorporate it into Hasslacher. I would say that our team provided direct feedback about the advantages (additional markets, proximity to Asia, opportunity for improving operations) and disadvantages (distance from Austria, potential difficulties in reshaping operations, some cultural differences). We made the choice to buy it and invest in HLS for the long run."

HLS produced 100,000 m³ of timber and €20 million had been spent in 2018 to modernise the plant.[15] HLS, being one of Hasslacher's smaller operations, produced timber products primarily for the Asian market, shipping goods from St. Petersburg. In 2022, the new expansion plans for HLS envisioned producing engineered products for the Asian market.

In 2022, engineered products had grown from a small base to account for the majority of Hasslacher's sales:

Table 4: Hasslacher Sales by Product Category[16]



Hasslacher's expertise in glulam and CLT meant that it could produce engineered wood at a 20% cost advantage to North American competitors. "To get to the point where we committed to glulam and CLT production was a long process," recalled Christoph. "Our senior team and I reviewed the entire operations, from our financial capacity, human capital, and what the prospects for growth in glulam and CLT looked like. What we were moving into was highly technical and would require different skills. One isn't just cutting planks from wood because producing these engineered products requires precision equipment, skilled operators and…it's a bit of an art form in the end. It isn't as simple as pressing a button and watching the wood get sorted and glued and shaped. There is a lot of judgement in the production process. We as a team had to ensure that we were all on board with this. It isn't just the CEO wishing for this to happen. Producing and selling Glulam and CLT meant that we had to acquire new firms, integrate their workforces, upskill our own workforce and, in some cases, downsize it."

Christoph pointed out that being the CEO also meant making tough decisions. Overcapacity and a mismatch in skills in 2014 required an entire layer of management to be taken out from the company. "Growth is the "fun" part of business but we cannot avoid the tough decisions," stated Christoph. "I'm aware that letting go of employees is a big responsibility. We've worked with them and we know them as friends in many cases. We take care of them, making sure they have good packages and have counselling to find new work. Even so, restructuring is not something anyone enjoys doing."

A typical sawmill in North America would purchase an assorted lot of wood and process each log sequentially, with operators manually adjusting the parameters for each log that entered the sawmill. Each step in the process from rough sawing to finishing and, in the case of glulam and CLT, gluing and shaping, was overseen by an operator. See **Exhibit 2** for an overview in pictures of Hasslacher's operations from rough sawing to finished products.

In contrast, Hasslacher broke out each step of the operation to increase efficiency. Hasslacher's plants had a much higher density of technology compared to a typical North American sawmill or engineered wood plant. First, logs were identified by their size and shape by a camera-enabled software program. If the log had too much of a curve it was sent to a separate step to be reshaped. This was done so that it would not have to be reworked at a future step, when logs were fed at high speed through a series of automated cutting machines. The first processing phase ended with the bark stripped off the logs and shaped into poles. These poles were stored in a yard according to length, diameter and quality. The waste wood was used to generate energy:

"Energy is of great importance along our entire value chain, but especially in wood processing and production. The Hasslacher is therefore taking responsibility here by focusing on sustainable energy generation, priding ourselves on generating more energy from sustainable, renewable sources than the Hasslacher consumes in production. It is also our declared goal to continuously optimise our energy efficiency at all sites. In 2022, the Hasslacher produced around 110 GWh of electricity – an increase of 40% compared with the previous year and equivalent to the electricity requirements of around 30,000 average four-person households per year. Any raw material that is not processed into sawn timber, cross laminated timber, glued laminated timber or shuttering boards during the production process, or supplied to the paper and board industry, enters the energy cycle as biomass or pellets."[17]

Next, the sawing of these logs into timber was scheduled based on Hasslacher's order book. The cutting of the sawline is organised, based on the final product needed, from the storage yard of the logs up to grading. For engineered wood products, the software calculated the optimal number and type of logs required to fulfil the order, maximising yield and minimising waste. Each log was scanned and software optimised how many pieces of timber could be extracted from it. Operators, monitoring the system, intervened only when anomalies occurred: logs were not oriented correctly or there were defects that were not picked up by the initial scans. Almost all of the engineered wood production processes were automated. For example, machines automatically sorted shaped and glued wood planks together to create glulam and this set of processes was 75% faster than if it were completely manual.

In summary, Hasslacher's glulam and CLT plants were more efficient and had the potential to be more profitable. The catch was that they had to run at close to full capacity. This was because that the additional technology in a Hasslacher plant meant it cost three times as much to build versus a typical manual-process focused sawmill or engineered wood plant, or at least €60 million versus €20 million. At full capacity, a manual-process sawmill would have a 5% net profit margin, about half of what an automated operation could achieve. Hasslacher's operations were focused on producing as much energy as possible from renewable sources:

"The Hasslacher has been relying on photovoltaics for many years and has taken a pioneering role in this field. The company was awarded the Austrian Solar Prize back in 2015 for its commitment to this work. Photovoltaic plants are installed at several sites, generating an annual output of 4.2 GWh of electrical energy in 2022.

The Hasslacher has been operating a small hydropower plant on the Lieser River in Spittal an der Drau since 1946. The facility was extensively renovated and modernised in 2017. In 2015, a fish ladder was constructed to allow fish to move upstream unimpeded through a difference in elevation of more than five metres."[18]

There was a general movement within Hasslacher to focus on moving towards electric equipment and engines:

"The Hasslacher uses in their fleet electric cars and different models of electric forklifts, which they use in their halls and also outdoor at several locations. The energy from renewable sources the Hasslacher produces, is used to power them."[19]

Christoph Kulterer

> *Christoph Kulterer is CEO and owner of the Hasslacher in Fourth-generation. He transformed the company from a medium-sized sawmill into one of the leading companies in the European wood-processing industry with over 10 production sites in five countries and more than 2000 employees. - Hasslacher management team*

After working for six years at Hasslacher, Christoph became CEO of the Hasslacher in 2002. He worked to rebuild the burned down sawmill and helped return the firm to growth. Following his experience operating an on-site store selling wood products he nudged the firm to produce higher value-added products. To gain the know-how needed to profitably manufacture and market engineered wood products he entered into cooperative agreements with specialist firms and acquired complementary companies.

When acquisitions resulted in increased costs he spent a few years right-sizing the organisation, removing management layers. Christoph was chairman of the Austrian Sawmill sector 2010-2015, Chairman of proHolz Austria 2015-2018 and he was named Ernst & Young Austria's Entrepreneur of the Year in 2021[20]

> *Christoph Kulterer is an experienced and passionate entrepreneur with a pioneering spirit, a forward-thinking manager with a collaborative leadership style. He has valuable experience of successfully growing the business through investment in value-adding and sustainable products, product innovation and strategic acquisitions. He involves his managers closely in his thoughts on decisions to be made and relies on their specialist expertise. He also seeks advice from trusted advisors. It is not important to him that people agree with him, but that they represent their opinion to him even if it differs from his thoughts. – Hasslacher management team*

Making a decision on the glued laminated timber factory equipment

As storage and opportunity costs were high, Christoph wanted to decide what to do with the factory equipment by the end of 2022. The original objective had been to ship the equipment to Malaya Vishera and increase the sawmill capacity at the same time.

The total estimated capital spend at HLS would have been €60 million to double timber production to 200,000 m³ and to produce up to 50,000 m³ of glued timber products primarily for Japan. The target would have been glulam and CLT custom products with an average selling price of €600 per m³. There were 300 employees at HLS with a few Austrians who had relocated to Russia.

"I've got family members running HLS in Malaya Vishera," Christoph noted. "They've built the operation from scratch over 30 years and they were excited to see the plant expand. Our sales team here in Sachsenburg has made inroads into the glulam and CLT market in Asia, primarily Japan. We have a handful of customers ready to trial and order our product once the plant is up and running. It wouldn't be an issue to get to almost full utilisation a few years after the plant starts up. These plans have all been in place for months now."

While the HLS operation was smaller than Hasslacher's other production sites, the lower cost of labour meant that HLS generated, consistently,10-12% in operating profits, about the same as for Hasslacher as a whole. Christoph reviewed his options:

Wait for the Russian issue to resolve itself

Hasslacher had invested €35 million in total at HLS and the operation was profitable and growing. Glulam and CLT demand in Japan and the rest of Asia was rising rapidly and HLS was running at full capacity. Customers in Asia were recognising the environmental and cost advantage of using engineered wood and there were few firms in Europe better positioned than HLS to take advantage of the market. In anticipation of the engineered wood products HLS's management team had built a pipeline of business and there were several long-term supply contracts in Asia that they were in the process of negotiating. There was the potential for the refurbishment to take one year and for HLS to be back to 80-90% utilisation by 2026. Christoph was not sure if the Russian and Ukrainian war would resolve itself in the next year.

Storing the capital equipment would cost €500,000 a year if needed. "HLS is located about 215 kilometres from the port of St. Petersburg," noted Christoph. "It's ideally located because trucking product there will allow it to be taken to Asia via ocean freight. It is well-known that the bulk of sea freight shipments tend to go from Asia to Europe. We would be well-placed to fill those otherwise empty containers on their voyage back to Asia".

Open a Greenfield plant or buy an existing operation in North America

Christoph looked at the glulam and CLT market potential in North America and wondered if it was time to enter the market. It was key for a sawmill to be close to wood sources. Spruce was required for glulam and CLT and there were two major sources: the area around Washington State, on the West Coast, and Southwestern Ontario, in Eastern Canada. Building a sawmill and glulam and CLT plant would cost €140 million, including equipment. It would cost about 45 to 50 million purchasing an existing operation of HLS's size, producing 200,000 m³ in sawn timber.

There were benefits and drawbacks to both approaches. Purchasing an existing operation meant that Hasslacher could generate revenues – and maybe profits – right away. Christoph could rely on the expertise of his engineering team to propose revisions to the acquired firm's operations and factory layout. The drawback was that Christoph would have to consider if, culturally, the workforce of Americans or Canadians would mesh with Hasslacher's corporate norms. It was thus enticing to be able to build an operation from scratch as Hasslacher could shape the new operation's corporate culture from the beginning. However, a greenfield operation could take one to two years to build and it might need three to five years of operations before it could be at close to full capacity. That is, if everything worked out and there were no setbacks.

"It's on the other side of the world", stated Christoph. "We have no one currently in North America. Yet North America is a market we would like to enter as it will be the biggest one for glulam and CLT. In Europe we are much farther ahead with glulam and CLT manufacturing technology and expertise. We have the know-how to run these plants and would face – at the start anyway – very little competition in North America. That is, if we are successful in setting up or refurbishing a plant there. There are so many unknowns, not the least of which is that operating in North America can, potentially, distract us from our European operations."

There were geographical issues to consider as well: would it be better to be in the US and have access to a market that was, potentially, ten times the size of the Canadian market? Or would it be better to be in Canada, in a political culture that was a little more proximate to that of Austria's? And, besides, there would be six hours of difference, from a time zone perspective instead of nine hours if operations were to be in Washington State. A flight to Seattle was 13 hours from Austria versus 8 hours to Toronto. "In any case, if we choose to go to either location I would be the one on those flights", said Christoph. "Our team would come along but for the initial negotiation, and to establish close links, a potential North American presence means a lot of travel for me."

There were both plots of land and at least one viable operator that Hasslacher could buy in either Washington State or Ontario: Aberfoyle Lumber in Washington State and Redtail Forestry in Ridgefield, Ontario. Each sawmill produced about 100,000 m³ in timber, had no engineered wood products, and was on sale – according to a business broker - for $30 million. Each had about 150 employees and neither was unionised.

A Hasslacher plant in Canada would have to capture 8% of the Canadian market for engineered wood. The same plant in the U.S. would have to garner 0.8% of the market. While North America was ostensibly one market – under the US-Mexico-Canada (USMCA) trade agreement, Christoph noted that the U.S. had a 7.99% tariff on Canadian lumber products. He wondered if the political situation would improve or deteriorate after the 2024 U.S. presidential elections. "There are certainly a lot of advantages to being in the U.S. or Canada," he noted. "The question is whether we would be stretching our resources too thinly."

Sell the equipment

Christoph took a look at a list of his European competitors. He noted that there was ample capacity in the market for the next few years. Selling the equipment would remove the need to have to manage another plant either in Europe or North America. It would eliminate the need to rewire and recertify the equipment: the current equipment was wired to operate in Europe and the modifications to make them ready for North America would cost $500,000. Christoph estimated he could recoup 60-75% of the cost of the equipment. "Our European market faces a difficult period due to overcapacity", said Christoph. "The situation could improve if the market picks up and demand for glulam and CLT improve. We have buyers for the equipment now but I'm not sure the same buyers would be interested in it a year from now. There is still time to unload the equipment if we want."

Making a decision

Environmental concerns and a search for more sustainable materials was leading to increased interest in engineered wood products around the world. Christoph noted that Hasslacher was the leader in the European glulam market and had the opportunity to extend its lead by deploying talent, capital and engineering know-how. He considered the options laid out in front of him. He thought about how best to choose between them. What criteria should he consider? What weight should he give to each criterion? What was the best plan going forward?

Exhibit 1 – Financial statements – Hasslacher

Company profit and loss statement

Profit and loss statement – consolidated	2019	2020	2021	2022
Revenues	429,927,729	430,389,938	605,608,317	623,823,326
Change in inventories of finished goods and work in progress	-3,424,413	1,195,718	17,370,070	-1,890,525
Other own work capitalised	3,747,850	2,867,179	1,983,792	1,058,052
Operating performance	430,251,166	434,452,835	624,962,179	622,990,853
Other operating income	9,675,902	4,900,974	4,739,271	11,167,765
Cost of material and other purchased manufacturing services	-230,668,157	-230,973,789	-320,158,167	-334,887,450
Personnel expenditure	-72,783,355	-76,257,081	-85,549,402	-96,596,415
Amortisation	-17,767,482	-20,106,435	-23,211,970	-35,352,938
Other operating expenses	-75,977,820	-76,456,672	-90,717,235	-102,206,503
Operating result	42,730,254	35,559,832	110,064,675	65,115,312
Financial result	-2,397,339	-2,274,221	-1,856,663	-2,767,038
Profits before tax deductions	40,332,915	33,285,611	108,208,013	62,348,274
Taxes on income	-10,201,036	-8,378,290	-25,099,915	-14,428,261
Group net profit	30,131,879	24,907,321	83,108,097	47,920,013
Minority interest in group net profit	-4,433,011	-2,674,885	-7,198,508	-5,435,336
Profit carryforward from the prior year	65,175,358	84,874,227	99,610,372	156,519,961
Group accumulated profits	90,874,226	107,106,663	175,519,961	199,004,639
EBITDA	60,497,736	55,666,267	133,276,645	100,468,250
EBITDA ratio	14%	13%	21%	16%
EBIT	42,730,254	35,559,832	110,064,675	65,115,312
EBIT ratio	10%	8%	18%	10%
CASHFLOW from the result		52,879,890	131,464,435	97,426,897
CASHFLOW ratio		12%	21%	15.6%

All amounts in EUR

Company balance sheet

Assets	31/12/2019	%	31/12/2020	%	31/12/2021	%	31/12/2022	%
Intangible assets	4,327,614	1%	6,985,025	2%	5,755,436	1%	8,050,359	2%
Intangible assets	4,327,614		6,985,025		5,755,436		8,050,359	
Property, plant and equipment	184,518,393	60%	208,670,414	61%	225,849,424	51%	275,876,219	57%
Land and buildings	73,183,994		90,650,790		99,192,865		124,968,223	
Technical plants and machinery	63,993,141		89,142,510		97,059,967		101,759,286	
Office and business equipment	8,108,746		7,472,941		8,894,276		9,986,373	
Properties under construction	39,232,512		21,404,173		20,702,315		39,162,337	
Financial assets	1,175,377	0%	946,916	0%	1,170,501	0%	2,038,921	0%
Investments	26,347		26,457		26,466		612,477	
Securities of fixed assets	876,230		920,458		1,144,035		1,381,172	
Other loans	272,800		0		0		45,272	
Fixed assets	190,021,384	62%	216,602,355	64%	232,775,361	53%	285,965,499	59%
Inventories	52,104,385	17%	48,901,856	14%	91,496,161	21%	91,596,578	19%
Raw material and supplies	29,177,947		27,572,048		48,731,590		37,000,054	
Finished goods and merchandise	22,926,438		21,329,808		42,764,571		54,596,525	
Accounts receivable and other assets	62,877,822	20%	72,744,602	21%	114,795,279	26%	102,463,192	21%
Accounts receivable from trade	28,474,981		30,972,650		34,414,744		32,040,949	
Accounts receivable and other assets	9,495,389		7,315,936		12,045,028		9,180,024	
Cash on hand and in bank	24,907,452		34,456,016		68,335,508		61,242,220	
Current assets	114,982,207	37%	121,646,458	36%	206,291,440	47%	194,059,770	40%
Prepaid expenses	1,455,879		1,227,708		1,187,708		1,102,411	
Deferred tax assets	465,788		490,045		476,971		2,087,836	
Balance sheet total assets	306,925,258	100%	339,966,566	100%	440,731,480	100%	483,215,516	100%

All amounts in EUR

Equity and liabilities	31/12/2019	%	31/12/2020	%	31/12/2021	%	31/12/2022	%
Equity	127,832,880	42%	137,678,960	40%	213,361,526	48%	239,822,208	50%
Share capital	35,000		35,000		35,000		35,000	
Capital reserves	895,074		895,074		895,074		895,074	
Adjustment items for shares of other partners	15,471,760		12,478,206		18,639,267		20,525,219	
Difference amount from capital consolidation	24,557,765		24,557,765		24,557,765		24,557,765	
Currency conversions differences equity capital	-4,000,946		-7,393,748		-6,285,541		-5,195,488	
Net profit	90,874,227		107,106,663		175,519,961		199,004,639	
Investment grants	5,684,192		4,739,488		4,790,147		5,403,768	
Economic equity	133,517,072	44%	142,418,448	42%	218,151,673	49%	245,225,976	51%
Accruals	19,828,285	6%	22,091,106	6%	39,526,200	9%	31,475,716	7%
Accrued severance payment and pensions	4,377,873		4,317,817		4,682,513		4,639,132	
Accrued taxes	5,583,418		8,730,397		23,812,257		15,897,763	
Other provisions	9,866,994		9,042,892		11,031,430		10,938,821	
Liabilities	152,699,472	50%	174,704,384	51%	182,374,987	41%	205,597,380	43%
Bank liabilities	119,234,860		141,453,421		143,143,047		156,294,919	
Accounts payable from trade	23,326,546		23,760,357		25,323,906		29,334,108	
Other liabilities	10,138,066		9,490,606		13,908,034		19,968,353	
Deferred income	889,429	%	752,628	%	678,621	%	916,444	%
Deferred income	889,429		752,628		678,621		916,444	
Total loan capital	173,417,186	56%	197,548,118	58%	222,579,807	51%	237,989,540	49%
Total liabilities	306,934,258	100%	339,966,566	100%	440,731,480	100%	483,215,516	100%

All amounts in EUR

Exhibit 2 – Wood processing and finished products – HASSLACHER

Logs are harvested

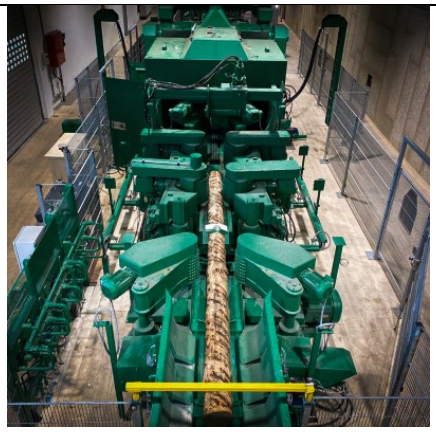
Branches and leaves are mulched and used

Preparing the logs for processing

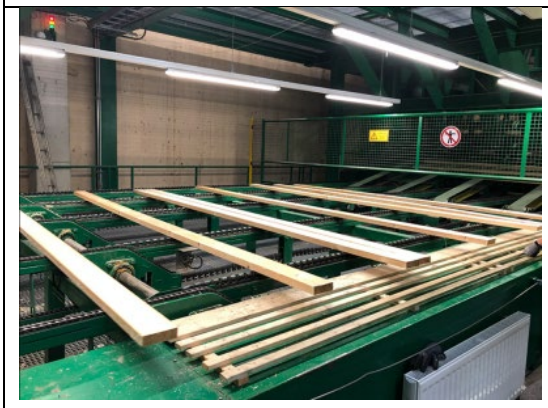
Logs are stored according to quality and size

Exhibit 2 – Wood processing and finished products – HASSLACHER group (continued)

Log Yard



Chip Saw Line



Timber sorting line

Sawn timber

Glulam

Finished and packaged Glulam

Exhibit 2 – Wood processing and finished products – Hasslacher Group (continued)

Glulam coming off the line

Glulam custom work

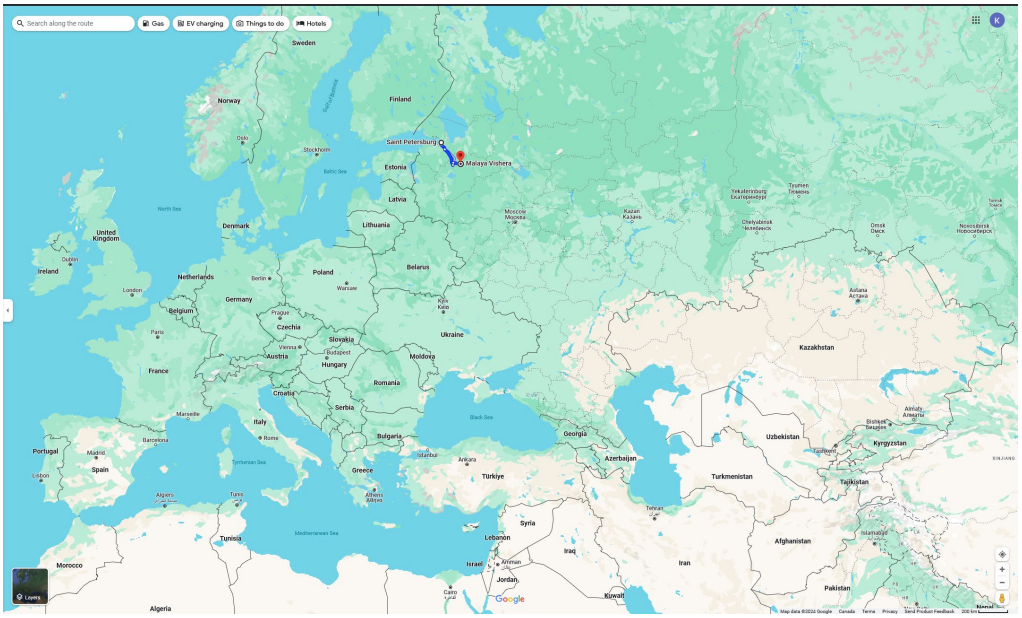
Specially-engineered Glulam

The use of glulam for multi-storey engineered buildings

Glulam structures

The use of glulam in architecture

Exhibit 3 – HLS in Malaya Vishera[21]



215k to St Petersburg

Sachsenburg to Seattle[22]

8,664 km from Sachsenburg to Seattle

References and endnotes

[1] https://www.deloitte.com/global/en/Industries/energy/perspectives/sustainable-construction.html

[2] https://www.ecohome.net/guides/1010/how-wood-structures-compare-to-steel-and-concrete/. ”

[3] Kohlenstoffemission aus der Produktion

[4] Kohlenstoffemission aus dem Transport

[5] Kohlenstoffbindung

[6] https://tegelprojekt.de/wp-content/uploads/2024/01/Holzbaustudie_dt_low.pdf, page 33.

[7] https://www.bnnbloomberg.ca/just-how-climate-friendly-are-timber-buildings-it-s-complicated-1.2025901

[8] https://www.wri.org/research/global-land-squeeze-managing-growing-competition-land

[9] https://www.researchandmarkets.com/reports/5754684/global-timber-and-wood-product-market

[10] https://www.linkedin.com/pulse/timber-frame-construction-market-size-exploring

[11] https://www.imarcgroup.com/glue-laminated-timber-market

[12] https://www.grandviewresearch.com/industry-analysis/cross-laminated-timber-market

[13] https://finance.yahoo.com/news/north-america-glue-laminated-timber-043000183.html

[14] Casewriter’s estimates

[15] https://www.globalwoodmarketsinfo.com/hasslacher-group-to-double-capacity-at-russian-sawmill-in-malaya-vishera/

[16] Hasslacher

[17] Hasslacher

[18] Hasslacher

[19] Hasslacher

[20] Entrepreneur Of The Year, Christoph Kulterer awarded…The EY Entrepreneur Of The Year TM is one of the world’s most prestigious awards for exceptional entrepreneurship. The programme runs across 60 countries and honours outstanding entrepreneurs all around the globe. The renowned award was presented by the expert panel of judges for the 16th time on 15th October 2021 in the Hofburg Imperial Palace in Vienna. Christoph Kulterer, CEO and owner of the Hasslacher, was named Entrepreneur Of The Year 2021 in the Sustainability & Greentech | Production & Services category.

[21]https://www.google.com/maps/place/Malaya+Vishera,+Novgorod+Oblast,+Russia/@55.2373797,22.3571063,5.25z/data=!4m6!3m5!1s0x46bc034fc8342b85:0x705904f4f662ad4!8m2!3d58.8473418!4d32.2205683!16zL20vMGMycW45?entry=ttu

[22] https://www.google.com/maps/dir/Seattle,+WA,+USA/9751+Sachsenburg,+Austria/@34.4755611,-64.3339375,4z/data=!4m14!4m13!1m5!1m1!1s0x5490102c93e83355:0x102565466944d59a!2m2!1d-122.3328481!2d47.6061389!1m5!1m1!1s0x4770b024820bc13b:0xb0a69a0384ccb78a!2m2!1d13.353288!2d46.8293641!3e0?entry=ttu