

2017

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Appendix

WORKING HARD OR EFFICIENT?

***A THESIS ON THE EFFICIENCY AND LEAD TIMES AT
THE AMSTERDAMSCHE FIJNHOUTHANDEL.***

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Appendix 1. Baseline offer requests

Survey of all offer request done in a 4 week period.

Calendar	week 10		week 11		week 12		week 13
Total	44	Total	67	Total	59	Total	75
Private	35	Private	52	Private	37	Private	46
Business	9	Business	15	Business	22	Business	29

Contacting method.

Mail	20	Mail	29	Mail	31	Mail	31
Physical	19	Physical	28	Physical	25	Physical	36
Telephone	3	Telephone	10	Telephone	14	Telephone	8

Is the offer accepted? If no, why not?

Deal?	8	Deal?	19	Deal?	14	Deal?	18
Price	2	Price	1	Price	5	Price	3
Lead time	6	Lead time	7	Lead time	7	Lead time	9
Different	28	Different	40	Different	33	Different	45

Averages

	Average
Average amount of requests	67,0
Average amount of private persons	45,0
Average amount of businesses	22,0
Offer request through mail	30,3
Offer request through physical	29,7
Offer request through phone	10,7
Actual orders	17,0
Price to high	3,0
Delivery time to high	7,7
Different reason / unknown	39,3

Total order over 4 weeks	268
Total B2C	180
Total B2B	88
Percentage price to high	4.5%
Percentage delivery time to high	11.7%

Appendix 2. Topic list Interviews

TOPIC	QUESTION HELPERS
PRODUCT QUALITY	<ul style="list-style-type: none"> - Are you satisfied with the overall quality of the ordered products? - What kind of suggestions do you have about the quality of the product? - Is the delivered quality the same as the promised quality? - If you would give a mark from 1-10. What would be the grade for the quality of the delivered products?
LEAD TIME	<ul style="list-style-type: none"> - What is according to your standard a normal / acceptable lead time for processed products? Is this realistic? - What would be the maximum accepted lead time? - Have you ever considered not to buy a product due to the lead time? And why? - Could you have any suggestions for improving the lead time of the AFH?
SERVICE / TRANSPARANCY	<ul style="list-style-type: none"> - What do you think of the provided service in terms of company service, aftersales, etc. from the AFH? - How do you feel is the communication towards you from the employees of the AFH? - Do you have any suggestions towards the provided service?
VALUE	<ul style="list-style-type: none"> - Is the product money wise meeting your standards?

Appendix 3. Results non-structured interviews

From each interview a bullet point abstract is been made.

CLIENT 1

PRODUCT QUALITY	<ul style="list-style-type: none">- Quality of the delivered products is an eight.- The picking on the products could be more secure in combination with the needs of the client.- Timber used to be from slower grown trees.
LEAD TIME	<ul style="list-style-type: none">- Only client for raw materials.- Not interested in plywood materials or processed goods
SERVICE / TRANSPARANCY	<ul style="list-style-type: none">- Positive that companies like the AFH still exist if it comes to customer service.- Short communication line and communication is direct.
VALUE	<ul style="list-style-type: none">- No complaints about the prices

CLIENT 2

PRODUCT QUALITY	<ul style="list-style-type: none">- Quality is good. A grade would be a seven.
LEAD TIME	<ul style="list-style-type: none">- A maximum lead time for processed goods is around 5 working days.- AFH is not the main distributor due to more business relations and prices.- There are several offers not accepted due to lead time.
SERVICE / TRANSPARANCY	<ul style="list-style-type: none">- There is no aftersales whatsoever.- Working together is based on long term collaboration.- Sales department doesn't seem to be very efficient. Sometimes it takes a long time to get offers.
VALUE	<ul style="list-style-type: none">- The value of both the quality and the price is both high. Not always necessary.- Changing pricelist is difficult

CLIENT 3

PRODUCT QUALITY	<ul style="list-style-type: none">- Overall quality is Ok. A grade would be a 7.- The saw mill has to check better for mistakes that are caused by the machines.
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LEAD TIME	<ul style="list-style-type: none"> - Processed orders seem to take very long. - Difficult to do a priority order. - Client doesn't feel that there is a special treatment for long term clients compared with other customers. - Suggestion would be to make a priority lane for companies for all orders.
SERVICE / TRANSPARANCY	<ul style="list-style-type: none"> - Service is high. - Friendly communication with workers from the AFH.
VALUE	<ul style="list-style-type: none"> - Prices are often high compared with competitors.

CLIENT 4

PRODUCT QUALITY	<ul style="list-style-type: none"> - The quality of wood seems to be downgraded in the last couple years in general. - Client is wondering if the AFH only uses the same producers.
LEAD TIME	<ul style="list-style-type: none"> - Lead time is ok for raw material. The
SERVICE / TRANSPARANCY	<ul style="list-style-type: none"> - Communication between coworkers of the AFH is sometimes missing. This results in different offers for the same product. - Delivery of the products is fast and efficient.
VALUE	<ul style="list-style-type: none"> - Prices are really high. It doesn't meet the provided service - Prices seem to change frequently.

CLIENT 5

PRODUCT QUALITY	<ul style="list-style-type: none"> - Product quality is good. Processed good are done accurate. - Average grade would be 7 - Sheet material is often different in color of the veneer.
LEAD TIME	<ul style="list-style-type: none"> - Lead time is long. The plywood materials takes three weeks or longer sometimes. - Maximum lead time for raw wood can be one week. For processed goods two weeks and for sheet material less than one week. -
SERVICE / TRANSPARANCY	<ul style="list-style-type: none"> - Working within the AFH seems like a great time. Workers have fun and the vibe is really good. - The workers really want to help you regardless the size of the order.

VALUE

- Prices are rather high.
- Prices are vague due to changing discount percentages.

CLIENT 6**PRODUCT QUALITY**

- The company doesn't mill special things.
- Average quality is a seven.

LEAD TIME

- Lead times are rather long and could be shorter.
- It's not transparent why some orders that are huge take just as long as one or two planks.
- Lead times cannot take longer than three working weeks.

SERVICE / TRANSPARANCY

- When something went wrong with the order the service is really on fixing the problem.

VALUE

- It would be easy to have an online pricelist. It is too much work to call every time to check prices.

CLIENT 7**PRODUCT QUALITY**

- The product quality is really high.
- A grade would be a nine.

LEAD TIME

- Lead times are ok on all products.
- It is not a problem to wait longer on the products when the proven quality is really high.

SERVICE / TRANSPARANCY

- It is fun to communicate with the AFH.
- People have a very high product knowledge and think toward a solution for different problems.

VALUE

- Prices are good for the provided products.

Appendix 4. Voice Of the Customer (VOC)

Delighters (excited quality)
1. Local environment
2. Atmosphere
3. Good customer service
Must Be (expected quality)
4. Dimensions must be correct
5. Quality of the wood must be high
6. Quality control
One-Dimensional (desired quality)
7. Cut down on lead times
8. Proactive communication about order status
9. Price / quality ratio

1. A lot of local clients that work with wood find it great that they can find a great selection of wooden products in the city center of Amsterdam.
2. There is a relaxed and welcoming atmosphere at the AFH. Clients think it is fun to go to the AFH.
3. Customers think that the AFH has a good customer service.
4. Customers feel that one of the most important factors is the dimensions of the processed wooden product.
5. The quality of the wood itself needs to be good.
6. Whenever a customer orders raw material or a processed wooden product, the quality control of the AFH employees needs to be good.
7. The lead time of processed wooden products is long. There are no complaints on the other materials.
8. Whenever a customer ordered a product and there is a delivery time. It would be better to keep the customer up to date when the order is delayed.
9. The price/quality ratio always needs to be realistic.

Appendix 5. Stocktaking form office

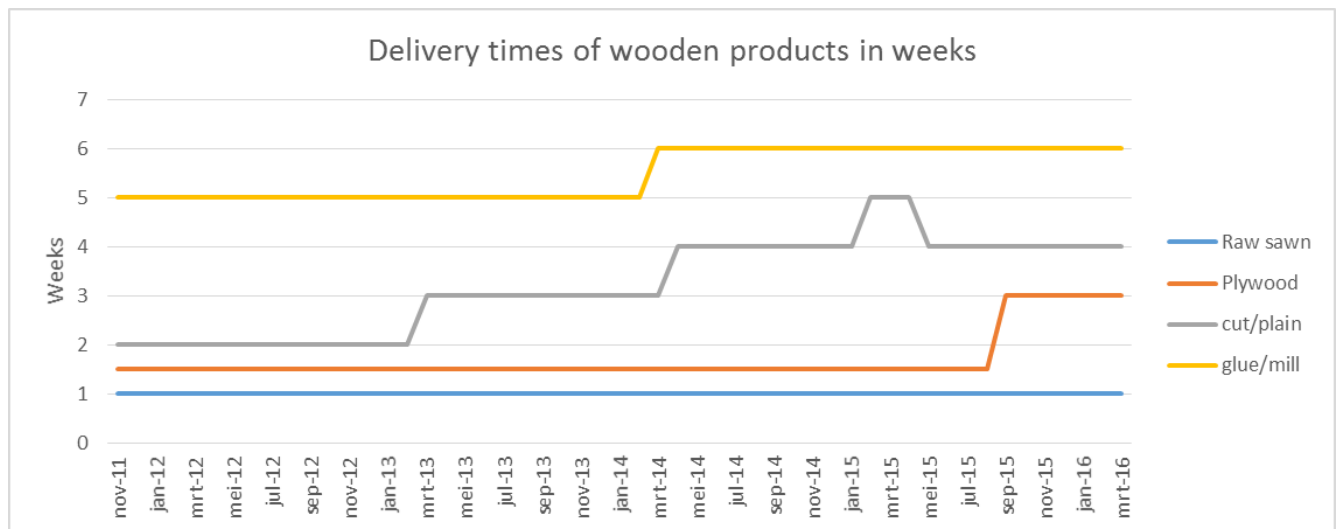
Zaag en schaaf

Klant #	Datum	Zakelijk	Particulier	Mail/Balie/Telefoon	Deal?	Reden afketsen (Prijs, Levertijd, Andere)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Appendix 6. Delivery time in weeks.

Delivery times in weeks				
Month and year	Raw sawn	Plywood	cut/plain	glue/mill
nov-11	1	1,5	2	5
dec-11	1	1,5	2	5
jan-12	1	1,5	2	5
feb-12	1	1,5	2	5
mrt-12	1	1,5	2	5
apr-12	1	1,5	2	5
mei-12	1	1,5	2	5
jun-12	1	1,5	2	5
jul-12	1	1,5	2	5
aug-12	1	1,5	2	5
sep-12	1	1,5	2	5
okt-12	1	1,5	2	5
nov-12	1	1,5	2	5
dec-12	1	1,5	2	5
jan-13	1	1,5	2	5
feb-13	1	1,5	2	5
mrt-13	1	1,5	3	5
apr-13	1	1,5	3	5
mei-13	1	1,5	3	5
jun-13	1	1,5	3	5
jul-13	1	1,5	3	5
aug-13	1	1,5	3	5
sep-13	1	1,5	3	5
okt-13	1	1,5	3	5
nov-13	1	1,5	3	5
dec-13	1	1,5	3	5
jan-14	1	1,5	3	5
feb-14	1	1,5	3	5
mrt-14	1	1,5	3	6
apr-14	1	1,5	4	6
mei-14	1	1,5	4	6
jun-14	1	1,5	4	6
jul-14	1	1,5	4	6
aug-14	1	1,5	4	6
sep-14	1	1,5	4	6
okt-14	1	1,5	4	6
nov-14	1	1,5	4	6
dec-14	1	1,5	4	6

Delivery times in weeks				
Month and year	Raw sawn	Plywood	cut/plain	glue/mill
jan-15	1	1,5	4	6
feb-15	1	1,5	5	6
mrt-15	1	1,5	5	6
apr-15	1	1,5	5	6
mei-15	1	1,5	4	6
jun-15	1	1,5	4	6
jul-15	1	1,5	4	6
aug-15	1	1,5	4	6
sep-15	1	3	4	6
okt-15	1	3	4	6
nov-15	1	3	4	6
dec-15	1	3	4	6
jan-16	1	3	4	6
feb-16	1	3	4	6
mrt-16	1	3	4	6







Appendix 7. Working sheet sawmill survey

Date	Worknumber	name	Minutes		
6-2-2016	Sawmill closed	Sawmill closed			
7-2-2016	Sawmill closed	Sawmill closed			
8-2-2016	11604	Drijfhout	45		
8-2-2016	11615	Dalmeyer	35		
8-2-2016	11617	Hool	60		
9-2-2016	11560	wijngaarden	90		
9-2-2016	11602	Armijn	180		
9-2-2016	11612	De pont	270		
9-2-2016	11613	Landweert	30		
9-2-2016	11609	Verdonkschot	45		
10-2-2016	11530	Lampert	210		
10-2-2016	11579	Dielemans	120		
10-2-2016	11727	Jonssen	240		
11-2-2016	11678	Smeets	45		
12-2-2016	11574	Roelofs	270		
12-2-2016	11599	Kuiper	20		
12-2-2016	11618	Meijer	240		
12-2-2016	11698	Teuning	30		
12-2-2016	11644	Burgman	20		
12-2-2016	11649	Diependaal	20		
12-2-2016	11611	Evers	70		
12-2-2016	11636	Zonnebloem	60		
13-2-2016	Sawmill closed	Sawmill closed	2100	Total amount of hours	35
14-2-2016	Sawmill closed	Sawmill closed			
15-2-2016	11738	Dielemans	0		
15-2-2016	11627	Timmermans	120		
15-2-2016	11650	Wielinga	90		
15-2-2016	11631	greweldinger	75		
15-2-2016	11622	hogeboom	45		
15-2-2016	11668	Oosterbaan	25		
15-2-2016	11678	Schouten	240		
16-2-2016	11626	Snieders	25		
16-2-2016	11658	Doornbosch	20		
16-2-2016	11641	Un-mei	120		
16-2-2016	11652	Molenkamp	60		
17-2-2016	11717	Vledder	45		
18-2-2016	11620	Pekelharing	90		
18-2-2016	11653	Kelisvoort	15		
18-2-2016	11659	Aandacht timmer	210		

Date	Worknumber	name	Minutes		
18-2-2016	11647	Van der Heijden	40		
18-2-2016	11638	Stuit	95		
18-2-2016	11662	Simons	20		
18-2-2016	11722	Tarfi	180		
18-2-2016	11648	Meesters	120		
18-2-2016	11656	Berkelaar	20		
18-2-2016	11660	Lodeizen	80		
19-2-2016	11661	Bosch	60		
19-2-2016	11665	Gerates	120		
19-2-2016	11666	Diewertje	85		
20-2-2016	Sawmill closed	Sawmill closed	2000	Total amount of hours	33,3
21-2-2016	Sawmill closed	Sawmill closed			
22-2-2016	11651	Kalwij	120		
22-2-2016	11762	klomp	100		
22-2-2016	11725	Streupert	50		
22-2-2016	11676	Knappert	45		
22-2-2016	11697	verheul	30		
23-2-2016	11740	Degens	180		
23-2-2016	11726	Megano	30		
23-2-2016	11765	Pot	240		
23-2-2016	11680	Nassen	185		
23-2-2016	11726	scription	240		
24-2-2016	11686	Oldenburger	30		
25-2-2016	11682	Boas	15		
25-2-2016	11753	El arte	60		
26-2-2016	43792	peper	120		
26-2-2016	11708	van Uden	160		
27-2-2016	Sawmill closed	Sawmill closed	1605	Total amount of hours	26,8
28-2-2016	Sawmill closed	Sawmill closed			
29-2-2016	11734	Koole	60		
29-2-2016	11664	Van 't hoff	30		
29-2-2016	11687	albers	120		
1-3-2016	11687	woodmood	100		
1-3-2016	11694	Janse	45		
1-3-2016	11751	AFH	0		
1-3-2016	11689	Wolfswinkel	45		
1-3-2016	11691	gram	60		
1-3-2016	11694	Pooters	350		
2-3-2016	11731	Tedens	45		
2-3-2016	11673	troost	180		

Date	Worknumber	name	Minutes		
2-3-2016	11675	Houtwerk	60		
2-3-2016	11632	Kool	30		
3-3-2016	11699	Wiensveld	180		
3-3-2016	11707	Wagensveld	220		
3-3-2016	11688	Aukens	180		
3-3-2016	11816	Tielemans	30		
3-3-2016	11772	Schreiber	140		
3-3-2016	11763	Soest	45		
3-3-2016	11702	Lek	120		
3-3-2016	11758	De jong	30		
3-3-2016	11706	Pinter Architect	20		
4-3-2016	11695	Ten cate	30		
4-3-2016	11704	Wiellier	180		
4-3-2016	11701	van Keekum	60		
4-3-2016	11728	Schippers	30		
			2390	Total amount of hours	39,8
				Total over four weeks	134,9
				average per week	33,7

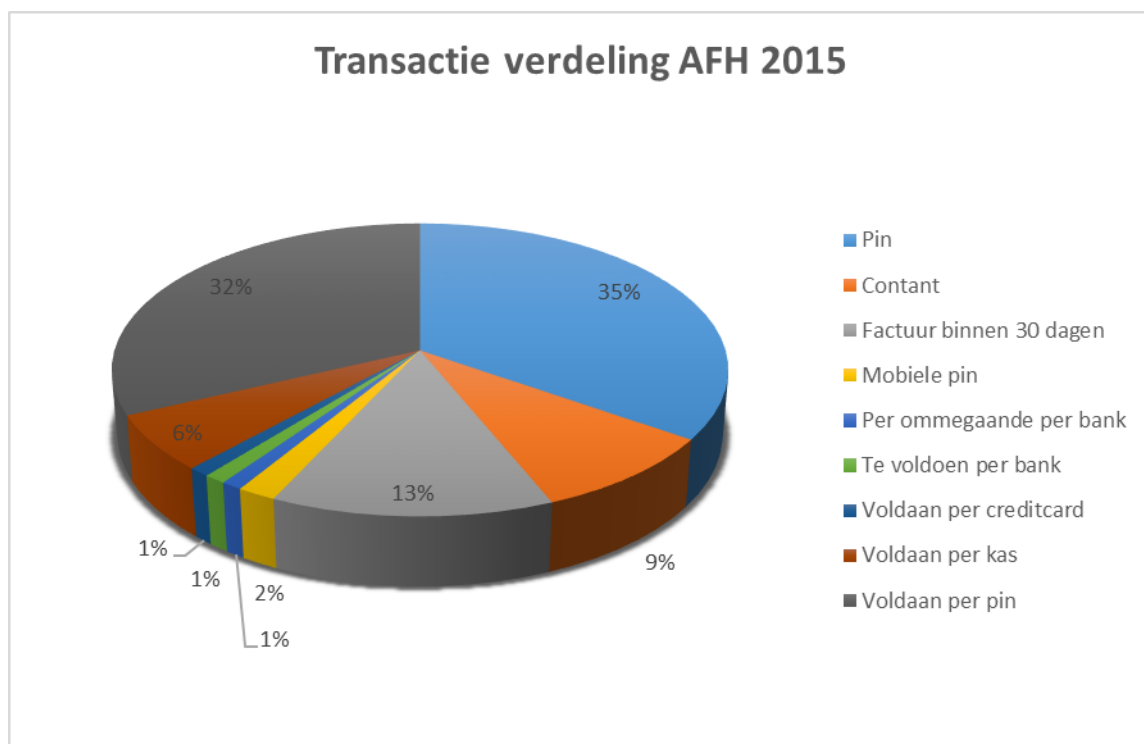
Appendix 8. Example of work order

AMSTERDAMSCH FIJNHOUT		ZAGERIJ OPDRACHT 11849	
Levertijd sinds 1000			
Naam: <u>Al Hultshoff</u>		Datum: <u>10-3-2016</u>	
Telef: <u>020-6111111</u>			
Houtsoort: <u>Wenge</u>	A: <u>20mm</u>	Op lengte: <u>J</u> / N	Lijmen: <u>J</u> / N
Voor:	B: <u>600mm</u>	Samenst: <u>J</u> / N	Frezen: <u>J</u> / N
	# / C: <u>1/0,95m</u>		
			
Houtsoort: <u>Wenge</u>	A: <u>20mm</u>	Op lengte: <u>J</u> / N	Lijmen: <u>J</u> / N
Voor:	B: <u>50mm</u>	Samenst: <u>J</u> / N	Frezen: <u>J</u> / N
	# / C: <u>2/0,95m 2/0,60m</u>		
			
Houtsoort:	A:	Op lengte: <u>J</u> / N	Lijmen: <u>J</u> / N
Voor:	B:	Samenst: <u>J</u> / N	Frezen: <u>J</u> / N
	# / C:		
			
Houtsoort:	A:	Op lengte: <u>J</u> / N	Lijmen: <u>J</u> / N
Voor:	B:	Samenst: <u>J</u> / N	Frezen: <u>J</u> / N
	# / C:		
			
Totaalprijs: € <u>203,75</u>	incl. BTW	Aanbetaling: <u>75</u>	kas / pin / bank
Contactpersoon: <u>Al</u>	Prod.T: <u>2</u>	Levertijd: <u>4-6 weken</u>	
Minervahavenweg 14 1013AR Amsterdam		www.fijnhout.nl NL57 ABNA 0466 6000 89	
		Tel: 020-6882100 afh@fijnhout.nl	

Appendix 9. Turnover divided by B2B and B2C in 2015

Different ways of transaction

Transactions	B2B or B2C	# of transactions		
Pin	B2C	3494		
Contant	B2C	915		
Factuur binnen 30 dagen	B2B	1319	€	898.192,77
Mobiele pin	B2C	183		
Per ommekeer per bank	B2C	99		
Te voldoen per bank	B2C	104		
Voldaan per creditcard	B2B	101	€	27.866,01
Voldaan per kas	B2B	625	€	125.970,79
Voldaan per pin	B2B	3222	€	762.208,99
		10062	€	1.814.238,56



Appendix 10. Company profile

Primary company details

Name	Amsterdamsche Fijnhouthandel
Company Type	BV
Location	Amsterdam
Number of companies / subsidiaries	1
Address	Minervahavenweg 14 1013 AR
Telephone	020 688 21 00
Email	AFH@fijnhout.nl

About the AFH

The Amsterdamsche Fijnhouthandel is a timber trading business with the focus on special types of wood that are not available in every do-it-yourself store. From the most common softwood species from Sweden and Russia, to the most rare hardwood species from Africa, Asia or South America. The AFH does not have a particular group of customers. Their variety of their customers is as big as their amount of wood species.

Types of customers are:

- Carpenters
- Framers
- Music instrument builders
- Architects
- Private individuals

Especially this last group is interesting.

The types of products the AFH sells:

- Hardwoods and softwoods in various dimensions
- Unique pieces (burls)
- Fiber boards
- Veneer
- Table tops on size
- Flooring
- Bamboo
- Wood related tools
- Glue, varnish and oil



The AFH has its own small sawmill and plan mill. With these features it is possible to provide wood in every dimension a customer wants. Especially for the private individuals this is interesting.

Opening times

Sales department	Monday till Saturday
Saw mill	Monday till Friday
Wood yard	Monday till Friday
Transport	Monday till Friday

Products

Product group	products	Supply
Raw material	Rough sawn timber <ul style="list-style-type: none">- Beams- Planks- Threes- Three slaps- Veneer	Own import from all over the world. Suppliers throughout the Netherlands and Belgium.
Processed by own sawmill	Processed sized timber <ul style="list-style-type: none">- Made on size planks or beams	Own production
Processed products external	<ul style="list-style-type: none">- Bamboo- Plywood- Finger jointed boards- Veneer	Suppliers throughout the Netherlands and Belgium.
Tools	<ul style="list-style-type: none">- Saws- Planers- Knifes- Chisels	Suppliers throughout the Netherlands and Belgium
Flooring	<ul style="list-style-type: none">- Laminated- Massive	Flooring suppliers within the Netherlands

Services within sawmill

- Planing
- Sanding
- Milling
- Sawing
- Gluing

Staff

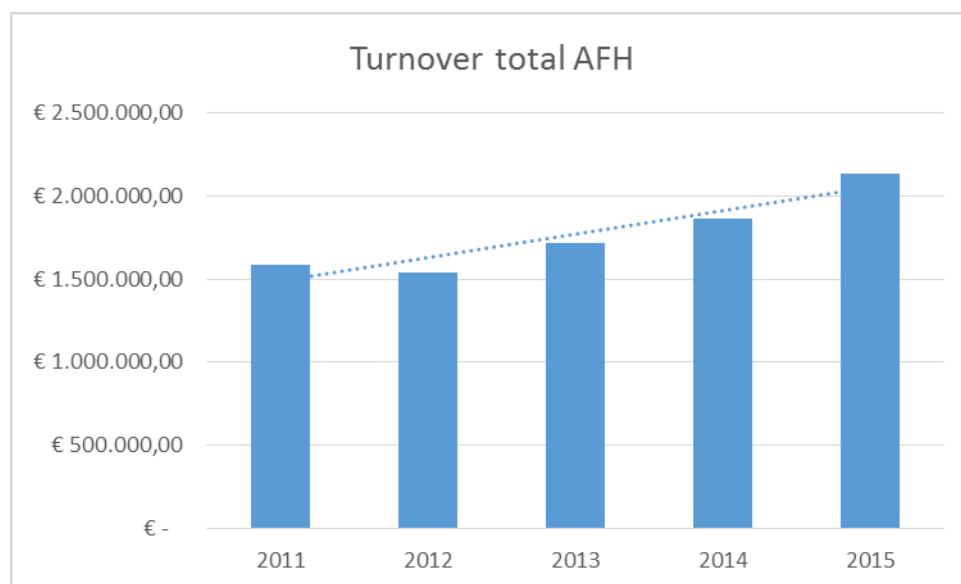
The total amount of people working for the AFH is 12. These workers are divided between the following sectors:

Director / CEO	1	FTE
Director / bookkeeper	1	FTE
Sales	3,5	FTE
Sawmill	3	FTE
Wood Yard	2	FTE
Transport	1	FTE

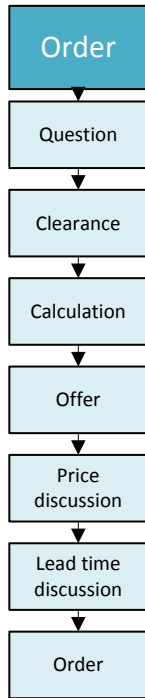
FTE – Fulltime equivalent for a 40 hours workweek.

Turnover

Annual turnover of the last 5 years.

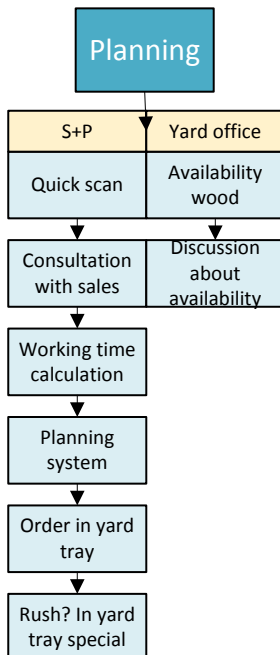


Appendix 11. Order process detailed



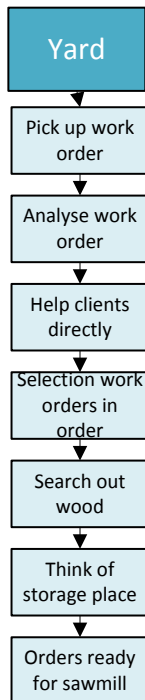
1-3 days

1. Customer / request comes into the Fijnhout. A sales employee receives the request and has to translate the idea to a feasible product.
 2. A calculation is made. The sales employee calculates what dimensions of wood he needs and how long it will take to produce it.
 3. The offer is made to the customer which results in a discussion based on terms (pricing/delivery time)
 4. When the customer accepts the order is written down in a form (appendix 8) and eventually this hand written order will find his way to the planning
- Cycling time from request to order takes one hour to three days. Depending on the method of doing the request (in person or by mail/phone) and decision time.



1 day

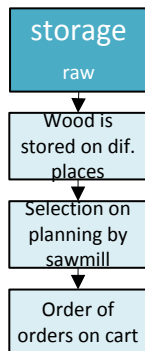
1. Processing planning starts out with a quick scan of the order. Is everything written down correctly and is everything clear. If not, a consultation with the sales employee is done.
 2. The amount of actual working time on the order is calculated and inverted into the digital planning system (calendar).
 3. The written order is put in a tray for the orders that need to be picked by the yard employees.
1. The planning/sales employee check the availability of the raw material and discusses this with the yard employee.
- The processing time from planning to yard takes at maximum one day.



1. The yard employee takes the written order from the office and does an analyses on what the order states
2. The stack of raw material has to be reached by forklift and then is picked by the employee to use the wood as effective as he can.
3. The actual wood is put together with more processed wooden products orders.
4. The wood goes into storage.

- The cycling time from the yard to the storage is at maximum seven days. When the stack of wood is hard to reach or a lot of work the order isn't always done direct.

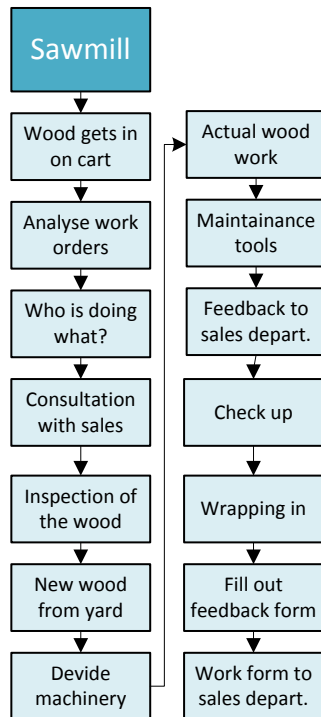
Max 7 days



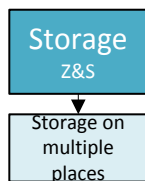
1. The picked wood is stacked together with more wood waiting for processing by the yard employee. This is done in a chronological way.
2. The wood is stored on a safe place until the employees of the saw mill are ready for it. The wood has put on a cart and drives into the saw mill.

- The cycling time from storage to sawmill takes between 14 and 31 days. The saw mill can only take the wood when they have room for it.

14 – 31 days



2 days



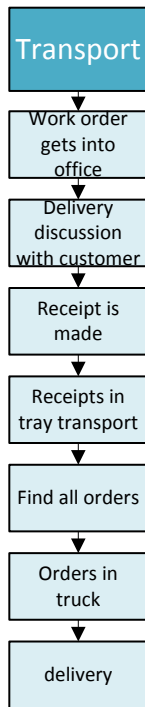
1-14 days

1. The wood is taken into the saw mill by the production employees. The orders are being checked and the work is divided between the workers
2. In some cases the production employee has to consult a sales employee on what to do exactly.
3. Then the wood is inspected and when there are defects there has to come new wood from the yard.
4. If everything is ok the production workers divide the machinery that they are working and do the actual work on the wood.
5. When the processed order is ready there is a final checkup and the wood is then wrapped in ready for shipment.
6. The production worker fills out a feedback form to inform the sales employee if everything went ok in the process.
7. At last the written order gets back to the office. And the customer is notified.

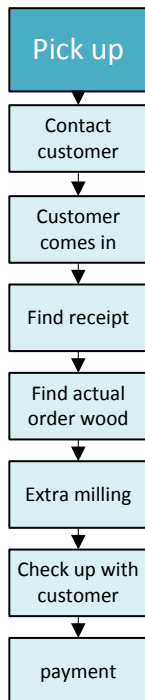
- The cycling time from when the wood gets into the saw mill to when it is ready to go into storage is at maximum two days.

1. The processed order goes into storage waiting for the customer to pick it up or the delivery.

- Depending on the customer this takes at average maximum 14 days.



1 day



1. The customer is notified by the sales employee that their order is ready. When necessary, an agreement is made about the delivery.
2. The driver collects all orders that have to be done on a certain day and plans his route.
3. The driver delivers the processed order.

- The cycling time of delivery is at maximum one day.

1. The customer is notified by the sales employee that their order is ready to pick up.
2. The customer comes by to pick up the order.
3. A check is being done by customer and sales employee if everything is correct.
4. If so, the payment is done and the customer leaves. If not, the order is taking back into the production planning of the saw mill to restore the order.

Appendix 12. Failure Mode & Effect Analysis

B	Process step	Potential failure effects	S E V	Potential causes	O C C	Current Controls	D E T	RPN
1	Order, sawmill	- Wrong specifications made in processed order (wood/dimensions)	8	- Miscommunication between sales employee and customer. - Mistakes made in documentation order from sales employee. - Sales employees don't calculate enough time for an order. - Because order is handwritten, order is not easy to read.	9	- Person in charge of planning (checks every order)	8	576
2	Order, Sawmill	- Wrong specifications made in processed order (wood/dimensions)	8	- Mistakes made in documentation order from sales employee. - Customer not used to make drawings, drawing is not clear.	8	- There is no extra control	10	640
3	Sawmill	- Workers have to wait on each other - Disrupting flow in work	2	- To many workers and orders on a small working station. - Lack of coordination at sawmill.	6	- There is no extra control	2	24
4	Yard, Sawmill	- Creating confusion on orders which leads to mistakes	5	- Sales employees not always there when there are questions from any process step. - Lack of coordination at the front office.	8	- Person in charge of planning	8	320
5	Sawmill	- Lower effective working hours from sawmill	2	- Workers do no check their machinery often enough if it needs maintenance.	8	- Person in charge of planning sawmill	5	80
6	Sawmill	- Sawmill workers have to search for their tools and clean up their workplace	3	- Saturday crew doesn't take time to clean up after their work on Saturdays. - Lack of clear agreements.	5	- There is no extra control	5	75
7	Yard, Sawmill	- More working hours spend on cleaning up of wood materials.	4	- Yard employees provides to much raw material for an order than actually needed - Lack of clear instructions. - Lack of coordination.	8	- Person in charge of planning sawmill	6	192

B	Process step	Potential failure effects	SEV	Potential causes	OCC	Current Controls	DET	RPN
8	Sawmill	- More working hours spend on cleaning up and less on actual orders	5	- The sawmill needs to be tightened and cleaned up every once in a while. - Few agreement on fixed location of tools.	3	- Person in charge of planning sawmill	3	45
9	Order, Sawmill	- More working hours are spend on a particular order.	5	- Sales employee doesn't calculate enough time for an order with extra heavy wood. - Repair works take more time.	7	- Person in charge of planning	4	140
10	Yard, Sawmill	- More hours spend on orders because of checking material longer than needed.	8	- Yard employees and saw mill employees don't agree on what is needed for a specific order.	8	- There is no extra control	9	576

B Bottleneck
Process step In which part of the company?
Potential failure effect Potential effects that will be noticed by the customer and company.
SEVerty Grade of influence on the company.

points	Explanation
1	No influence whatsoever on the company or its employees.
5	Moderate influence.
10	Really big influence on the company and its employees.

OCCurrence How often does it occur?

points	Explanation
1	It never happens, 0% of the orders
5	It happens sometimes, 25% of the orders
10	It happens all the time, >50% of the orders

Current controls Who or what takes care of the control?

DETection level How high is the chance of detection?

points	Explanation
1	Small chance of detection
5	Moderate chance of detection
10	High chance of detection

RPN Risk Priority Number – SEV x OCC x DET = RPN

Bottleneck points.

1. Wrong specification information on the work order sheet.

The work is not written down correctly on the work order form (appendix 8). This results in extra time needed to consult the sales department on what needs to be done exactly.

2. The attached drawing isn't correct

To clarify a specific order, customers often send in drawings. They are translated by the sales employee. These are attached to the work order by the sales department.

3. Not enough working space

The employees need more working space to store wood or to place machinery. This is sometimes difficult due to the size of the saw mill.

4. Getting feedback from the right sales employee.

Different sales employees sometimes work on the same order. This is considered confusing when there are questions from the saw mill towards the sales department.

5. Maintenance machinery

The maintenance of the machinery is done during working hours. This often takes a long time from the working hours.

6. Cleaning up after Saturday crew

Since the saw mill is only working on Monday till Friday. The employees from the Saturday crew often use materials in the saw mill that are not put back correctly.

7. Wood disposal after finishing order

The raw material that is picked for a processed order is often a lot more than actually used. This can be because the yard workers don't have the same idea on how to produce an order as the sawmill workers or they just want to give them some more options. The extra material is then planed for selling in the stock as leftover pieces. The fact that this needs to be planed consumes more time which results in less actual order working time.

8. Cleaning up the saw mill

Every week the saw mill has to be cleaned. This is done during opening/working hours.

9. Weight/volume of the orders

The weight and volume of the wood is often an issue. With bigger volume orders three people have to work together which takes more hours.

10. Raw material incomplete for processing.

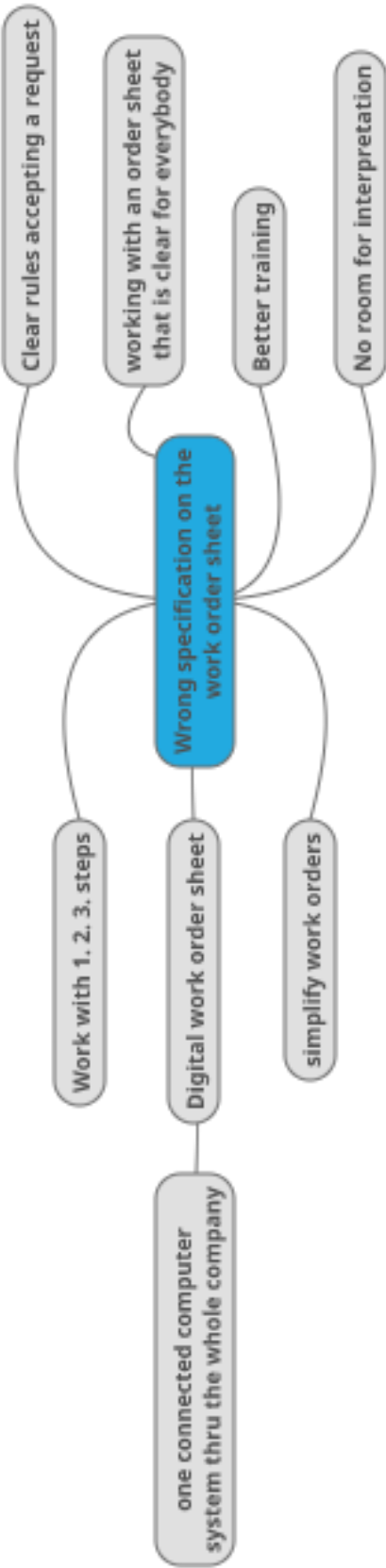
The raw material is not searched up by the wood yard workers in a correct way. The wood contains a lot of faults and issues. Whenever this happens the workers from the saw mill have to ask for new wood from the stock yard and exchange materials. Estimated by the saw mill workers this happens about 25% of the orders.

Appendix 13. Pugh Matrix

Importance (factor) →→		5	4	1	3	2	Score
Improvement suggestions		Reachability	Eff. Work hours	Environment	Costs	Capacity	
A	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😊	😞	😞	4
B	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😞	😞	😊	7
C	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😞	😞	😊	7
D	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😞	😞	😊	😊	-5
E	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😊	😊	😞	3
F	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😊	😞	😊	9
G	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😊	😊	😊	9
H	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😞	😞	😊	3
I	Current situation (baseline)	😊	😊	😊	😊	😊	
	New situation	😊	😊	😞	😞	😊	2

- A) Improve the given problems according to the workers in the saw mill.
- B) Hire extra employees.
- C) Work in multiple shifts.
- D) Accept fewer orders.
- E) Divide the orders between B2B and B2C.
- F) Work with a digital version of a work order.
- G) Better quality control by the wood yard Employees
- H) Outsource work for the saw mill.
- I) Outsource the maintenance of the machinery.

Appendix 14. Mind mapping



Appendix 15. Data collection plan

Project: Amsterdamsche Fijnhout

Project Leader: Rick Kamphorst

Date: January 2017

What to measure	How to measure	With who	Who?
Customer satisfaction	Non-structured interviews	7 different big B2B customers	Rick kamphorst
VSM	Lean six sigma green belt structure.	Employees Amsterdamsche Fijnhout	Rick Kamphorst
Turnover numbers	Stocktaking	Bookkeeper AFH	Rick kamphorst
Delivery times/lead times	Stocktaking	N/A	Rick kamphorst
Efficiency sawmill	Stocktaking	N/A	Rick kamphorst