

## Pulp paradox – a new horizon?

Industry survey confirms demand growth expectation ♦ Consolidation of global BEK expected ♦ Pulp buyers skeptical about price indexes ♦ Mixed view on trading platforms ♦ China considered a priority market ♦ Awareness about Industry 4.0 varies significantly

By *Veronica Schey and Sarah Rabl*

For decades, the pulp market has been operating in a traditional and largely relationship based way. This has been and still is highly valued by pulp buyers across the globe.

With technological advances and the increasing engagement in emerging markets the question arises: Are the ways to buy and sell pulp adequate for the industry's Zeitgeist? This consideration marked the rationale for StepChange to investigate the pulp markets. StepChange carried out an in-depth study among selected industry participants, collecting industry views on pulp market developments, China as a market and Industry 4.0 within the pulp industry.

The purpose of this study is to shed light on how the industry foresees the market itself and the ways to buy and sell pulp will change or remain the same, which role China has in this picture and if and how technological advances should be embraced. This report is structured into three sections: 1. Market developments, 2. China as a market and 3. Industry 4.0.

Chapter 1 outlines industry sentiments around the changing market environment in the pulp industry. Overall, market consolidation, increased capacity and lower utilization rates are expected. More price stability and increased transparency on pricing is desired, especially by buyers. In general, customers are satisfied but room for improvement exists. The overall expectation is that the way pulp is transacted will change.

In Chapter 2, China as market destination is reviewed. According to the survey participants, China remains the key market

and a key future priority market for suppliers. In particular, economic advantages of doing business with China and the simple nature of establishing business partnerships are noted.

Chapter 3 marks the engagement with Industry 4.0. Industry 4.0 is expected to impact the way the industry will interact, however, awareness and knowledge levels about Industry 4.0 are momentarily considered low.

In conclusion, it has become visible that the pulp market continues to function in a rather traditional manner, that is first and foremost based on human interactions.

### Trend-watch and market context

A step back is necessary to look at recent market developments in the pulp and paper industry. These trends mark the general frame in which the pulp survey and the consequent analysis occurs, and by which industry sentiments, to varying degrees, are influenced. These trends include, but are not limited to:

**Capacity increases:** Until 2020, an approximate capacity increase of 10 million tons of pulp will be introduced to the market. 2,8 million tons of acacia pulp will be produced by APP in Sumatra and additional 7 million tons of BEK will be joining the market until 2018 from Brazil (Suzano, CMPC, Klabin, Fibria and Eldorado). In Europe, Metsä Fibre will be adding 700.000 kt of pulp to the market by the end of 2017<sup>1</sup>. A rise in competition on the Chinese pulp market can be expected as producers seek additional outlets. China is an attractive destination for these pulp producers as local fiber sources are largely unavailable. Thus, net imports of BHK to China will continue to show stable growth in the years to come<sup>2</sup>. Chapter 2 of this report addresses China as a market and the associated sentiments of doing business in China.

**Pulp demand growth:** Demand for pulp is growing modestly at 3%<sup>3</sup> and within that, market pulp is expected to take a stronger share in the years to come, partly because market pulp as such is still at an immature stage of industry consolidation. The change of demand in the industry is noted as outlined in Chapter 1.

**Concentration levels:** Globally, the pulp market is concentrated when it comes to both the softwood and hardwood segments. The hardwood segment, including eucalyptus, reaches

<sup>1</sup> RISI N.A. Conference 2016; CEPI European Paper Week 2016; London Pulp Week 2016

<sup>2</sup> RISI presentation at CEPI European Paper Week 2016

<sup>3</sup> RISI October 2016

a Herfindahl-Hirschman Index of 0,061, whereas the softwood segment arrives at 0,045<sup>4</sup>, representing a very high level of competition in both cases.

### 2016 StepChange Market Pulp Study - Overview<sup>5</sup>

The findings are derived from a global survey and personal interviews conducted with industry experts within the pulp market. Approximately 50% of participants are pulp producers of which two thirds produce more than 1.000kt of pulp annually as seen in Figure 1. The remaining 50% of responses are from pulp consumers, pulp traders and other groups.

Volume of pulp traded/purchased/produced in 2016 (expected full year)

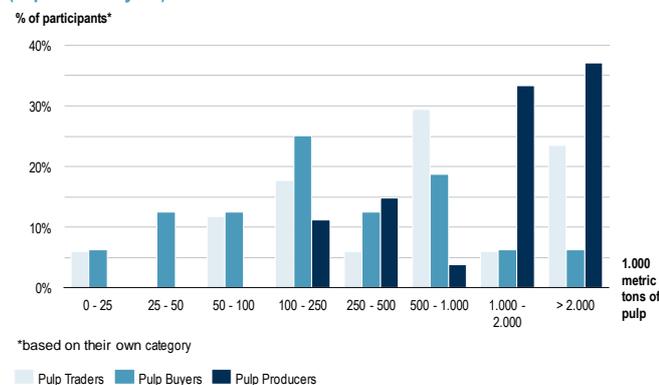


Figure 1: Handled pulp quantities

Geographical activity of respondents is distributed globally. 44% of respondents operate in three or more geographies. 67% of respondents buy, produce or sell Bleached Softwood Kraft (BSK, including Northern Bleached Softwood Kraft or NBSK), 51% Bleached Eucalyptus Kraft (BEK) and 49% Bleached Hardwood Kraft (BHK), as seen in Figure 2.

We produce/trade/buy the following pulp grades (select all that apply)

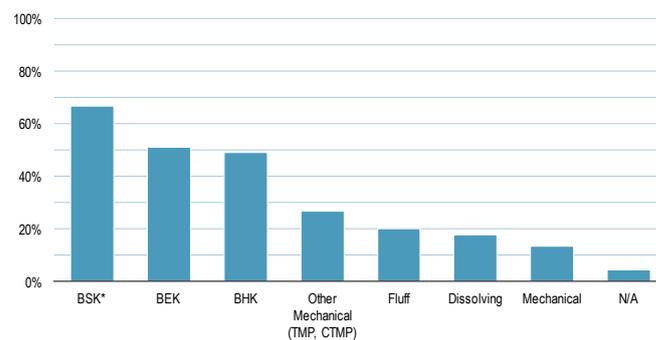


Figure 2: Pulp grades traded, bought or sold

### Chapter 1: Market developments and outlooks through the lens of the industry

This chapter highlights six trends that have been extrapolated from the survey:

- 1) the expected increase in capacity leading to lower utilization rates and the further market consolidation
- 2) the expected growth in supply and demand of pulp and the increase in pulp prices
- 3) the desire for more price stability and increased transparency on pricing
- 4) the expected change of transaction modalities on the pulp market
- 5) the positively perceived, on-going traditional nature of seller-buyer relationships and
- 6) the overall stable customer satisfaction levels still show room for improvement.

Firstly, respondents strongly believe that utilization rates will change due to an influx of capacity – especially for Eucalyptus pulp - as can be seen in Figure 3. The industry is expecting that the increase in capacities until 2020 will lower utilization rates. 100% of BEK and 71% BSK pulp buyers believe that this trend will occur, as well as 57% of BHK buyers. Pulp sellers are slightly more skeptical, however, overall agreeing to this trend. Pulp traders overall agree with these expectations in BEK and BSK, but disagree that there will be an impact on operating rates in BHK.

<sup>4</sup> StepChange analysis based on FY 2015 findings

<sup>5</sup> In the representation of the findings percentages might not add up to 100%. In these cases, "neither/nor" responses were excluded for facilitated reading but listed separately. Further "sellers" corresponds to sellers of market pulp with own production capacity.

Announced capacity increases will lower utilization rates until 2020

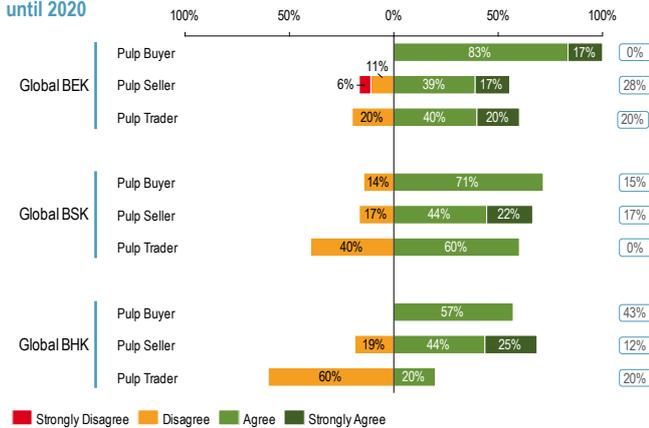


Figure 3: Effect of capacity increases on utilization (split: Buyer/Seller/Trader)

In addition to changes in utilization rates, changes in consolidation are expected. Survey respondents are largely expecting a consolidation of the pulp market by 2020 especially in BEK. 77% of respondents believe the global BEK market will consolidate. The same trend is expected by 38% regarding the BSK market, and only by 34% in BHK with a much larger number of respondents disagreeing that there will be a consolidation in BHK as can be seen in Figure 4. In particular, BEK producers themselves believe that consolidation will happen in their own segment.

Consolidation of market pulp producers in the industry by 2020

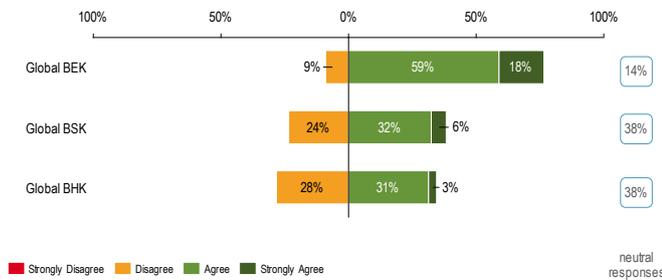


Figure 4: Consolidation of market pulp producers

Second, looking at supply and demand levels, participants of the study expect market pulp demand to increase by 0,5 -3,5% depending on the pulp grade. For BEK, 57% of buyers indicated expected demand growth in the 2,0-3,5% range, whereas for BSK, slightly slower growth rates are expected. For BHK, responses are more ambivalent. Looking at the results in detail, sellers foresee higher demand growth rates in BEK than buyers. In BSK and BHK buyers and sellers have similar views as visible in Figure 5.

Until 2020 I expect market pulp demand to grow (annually) by

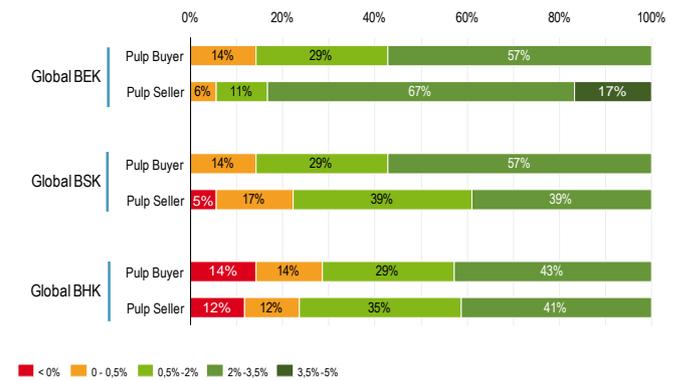


Figure 5: Expected demand growth of market pulp

For pulp supply (Figure 6) the majority of respondents expects the supply side to grow by 2,0-3,5% annually until 2020. The highest growth is expected in the BEK segment, with 100% of respondents expecting overall growth in that segment. Respondents are more wary regarding the BHK segment, with 13% predicting a decline in capacities. However, 68% predict a growth rate higher than 0,5%, primarily in the range of 2,0-3,5%. Looking at the detailed expected supply changes of pulp buyers and sellers, it becomes visible that BEK sellers view growth more positively than buyers. Negative growth rates are predicted by both BHK buyers and sellers, slightly more strongly so by buyers.

Until 2020 I expect market pulp supply to grow (annually) by

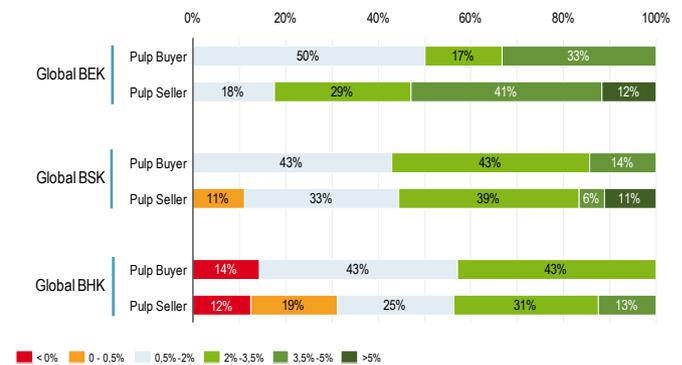


Figure 6: Expected supply growth of market pulp (split by Buyer and Seller)

When it comes to price developments until 2020, overall, more respondents expect pulp price increases than decreases. However, differences become visible between the expectations of buyers and sellers as can be seen in Figure 7. Pulp sellers expect higher price increases, on average by \$50, whereas the majority of buyers expect lower prices by on average \$50 per ton for BSK and BHK. Views on BEK are more ambiguous, with about one third expecting a price increase of \$100 by 2020 compared to October 2016 prices and another third expecting to pay \$50 per ton less.

Expectations on prices in 2020 (on average per ton)\*

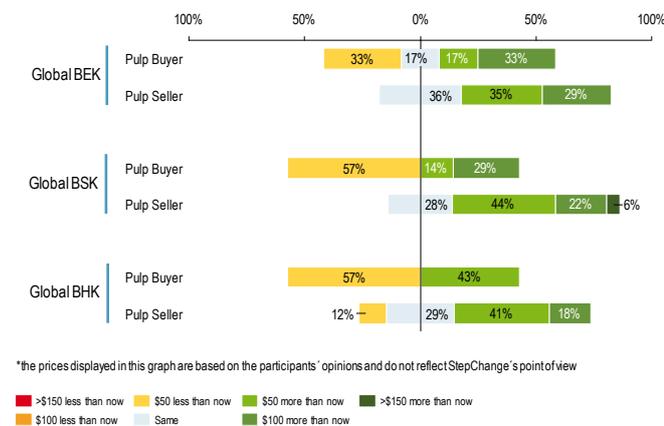


Figure 7: Expectations about prices in 2020

Third, the desire for more pricing transparency and stability becomes apparent. Asked about what would benefit the business, 64% believe that more stability in pulp prices would be positive. Furthermore, 63% think that contracts should not have significant amounts of off-invoice adjustments and rebates. Similarly, 59% of respondents believe a more transparent benchmarking system for pulp price would be beneficial as can be seen in Figure 8.

My business would benefit if ...

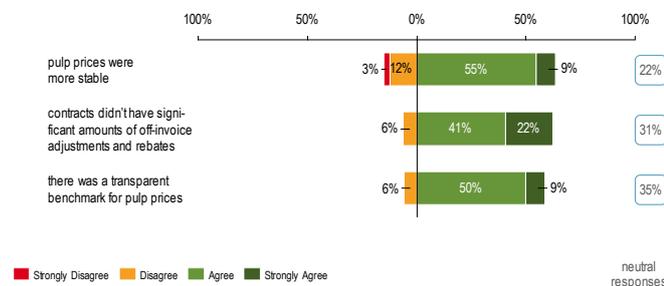


Figure 8: Benefits by price stability, transparency and less off-invoice adjustments

The reason why increased transparency and stability is requested also results from insecurities around the accuracy of published price indices. Pulp buyers and traders have little trust in published price indices with 86% of pulp buyers and 80% of traders not believing they are accurate. Pulp sellers

place more trust in them, with 47% stating that indices represent the price realities accurately as seen in Figure 9.

Published indices represent price realities accurately

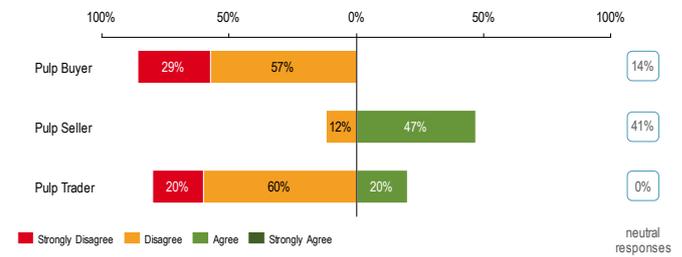


Figure 9: Accuracy of published indices

In addition, stability on the pulp market has been rated as a key priority as seen in Figure 10. 62% of pulp sellers view the stability of the supply chain as more important than price for customers. Buyers have mixed views. 43% state that prices are more important and another 43% agree that stability of supply over the cycle is more important than prices.

Stability of supply is more important to customers than price

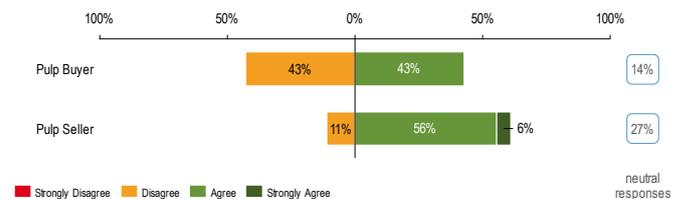


Figure 10: Stability vs. Price

Fourth, looking into changes in pulp transaction modes, currently used sales channels are seen as efficient: As seen in Figure 11, 71% of pulp sellers and 80% of pulp traders consider their currently used sales channels as appropriate. Pulp buyers have a more ambivalent view, with 33% considering market pulp channels as efficient and 33% not.

Overall, I find that market pulp sales channels are efficient

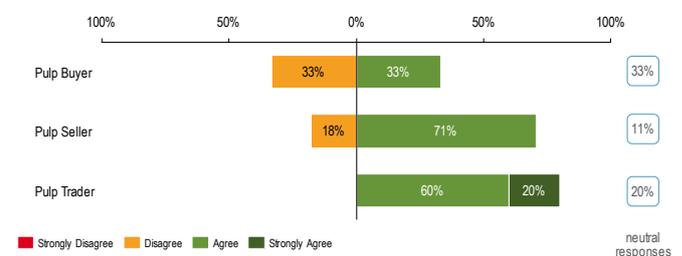


Figure 11: Efficiency of sales channels

Despite this sentiment, there is an understanding that sales channels will change drastically until 2020. 44% of pulp sellers and 43% of buyers expect that traditional buying and selling channels will be modified over the next decade. On the other

side 39% of sellers and 29% of buyers believe the opposite. Pulp traders have the strongest view with 80% don't expecting changes to traditional sales channels as can be seen in Figure 12.

**By 2020, I expect that the traditional channels of buying and selling market pulp will have changed significantly**

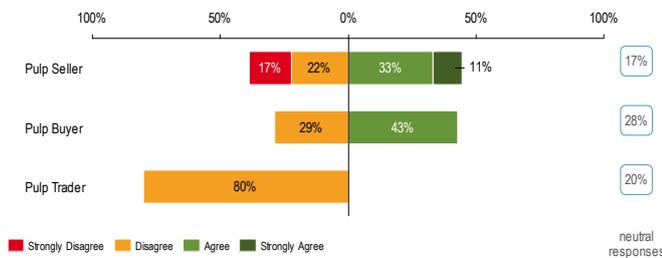


Figure 12: Expectations on the channels of buying and selling

Mixed feelings exist on the use of trading platforms as seen in Figure 13. More than half of all pulp buyers would consider using an electronic trading platform, whereas on the other side 43% disagree. Pulp sellers are overall less in favor. Only 24% of pulp sellers state that they would consider using an electronic trading platform for market pulp, whereas 30% are opposed to it. For pulp traders, 40% are in favor and 20% would not consider using a platform.

**I would consider using an electr. trading platform for market pulp**

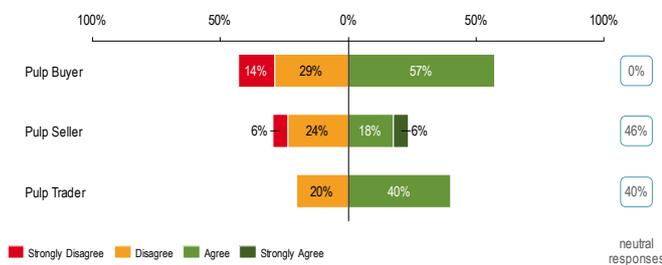


Figure 13: Electronic trading platform

Overall, buyers would appreciate the possibility to interact electronically with their suppliers (57%). Sellers and traders have ambivalent views with traders less interested as can be seen in Figure 14.

**I would like to transact electronically with my supplier/customer**

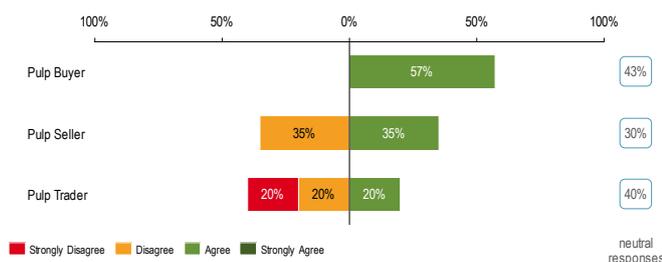


Figure 14: Electronic transaction with Supplier/Customer

Fifth, looking at buyer-seller relationship it becomes clear that direct and personal contact is still highly valued in the industry. Overall, establishing strong contacts with market pulp suppliers is considered critical to all survey participants. 86% of pulp buyers agree that a long term relationship is important, and 14% even strongly agree. Of the pulp sellers, 67% agree that customers prefer to establish long-term relationships with 22% even agreeing strongly. Only 11% of pulp sellers neither agree nor disagree as seen in Figure 15.

**Customers prefer to establish long term relationships with key market pulp suppliers**

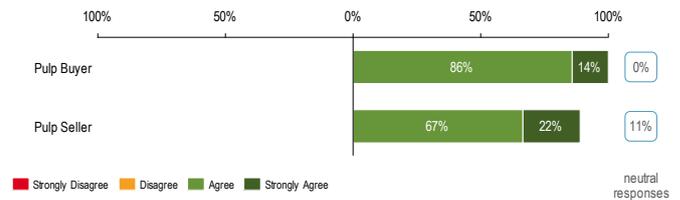


Figure 15: View on long term relationships with suppliers

Furthermore, direct contact is key. 94% of pulp sellers state that customers prefer to deal directly with the market pulp supplier, rather than via an agent or representative office and the majority (58%) of pulp buyers agree. 29% of pulp buyers, on the contrary, disagree with this statement.

Sixth, looking at customer satisfaction levels, 84% of pulp sellers believe that customers are satisfied with the service provided to customers. To a similar extent 71% of buyers are satisfied with the service received as seen in Figure 16.

**Overall, customers are satisfied with the service that they get from market pulp suppliers**

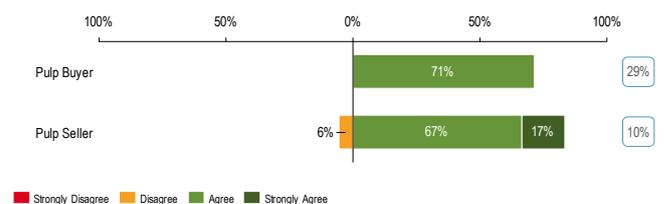


Figure 16: Satisfaction with suppliers' service

When it comes to the response rate to short term needs, there is a mismatch of perceptions between buyers and sellers as shown in Figure 17. Conflicting answers were received. Although 89% of pulp sellers believe that customers are happy

with the responsiveness they receive, only 14% of pulp buyers confirm this and 43% even disagree.

Overall, customers feel that market pulp suppliers are responsive to short-term changes in their needs

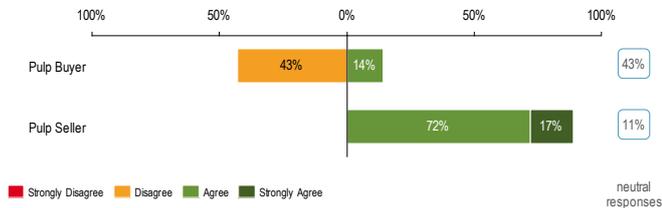


Figure 17: Responsiveness on short-term changes

Lead times are generally perceived as acceptable, however, there is room for improvement (Figure 18). 55% of pulp sellers believe that customers are happy with the order lead time they receive from suppliers. 57% of pulp buyers agree but 29% are not satisfied with order lead times received.

Overall, customers are satisfied with the order lead time that they receive from market pulp suppliers

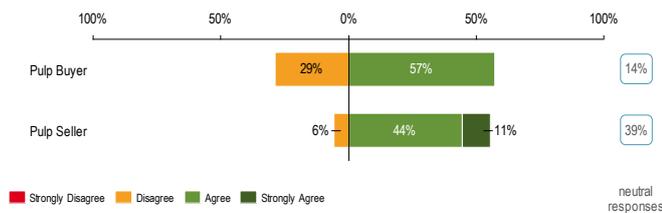


Figure 18: Satisfaction with order lead time

Concluding this chapter, it became visible that expected BEK producer consolidation, lower pulp utilization rates and price increased are predicted by the industry for the years to come. Furthermore, respondents agree that the pulp business environment would be positively impacted by more stability, accuracy and transparency of pulp prices. Reluctance to engage in electronic pulp transaction platforms persists. From a customer side, direct contact and relationship maintenance is a high priority.

## Chapter 2 – China as target destination country – place to be?

This chapter highlights that China is considered the most attractive sales region due to the perceived low complexity of doing business in China, particularly for traders. According to 55% of survey’s participants, China currently is and in the near

future will be the “go-to” sales region. China is followed by Europe with 21% and Asia (excluding China) and South America in third place as seen in Figure 19.

In your opinion, which region is the most attractive for market pulp sales 2017 to 2020?

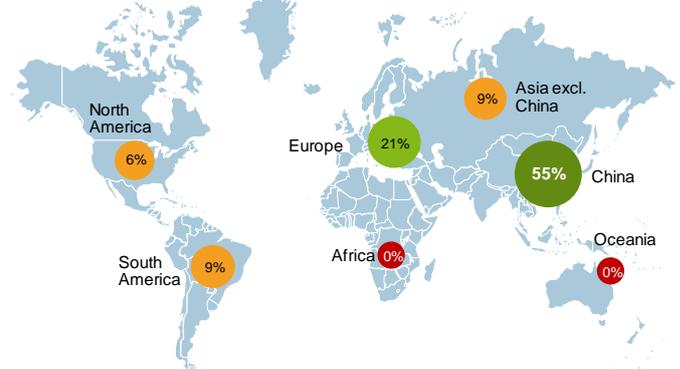


Figure 19: Most attractive regions for selling pulp

The majority of survey respondents is already active in China or has a significant interest in China as a target market. 50% of respondents already have a presence on the Chinese market regarding production and/or sales. A further 23% have expressed an interest in China. 27% do not want to engage in the Chinese market as seen in Figure 20.

Does your company have an interest in producing/selling market pulp in China?

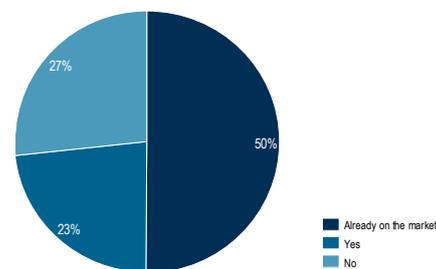


Figure 20: Interest on producing/selling in China

For the majority of companies participating in the survey, China is a key market. All pulp traders see China as a priority market for their company. 63% of pulp sellers see China as a priority market, with only 19% signaling China not being a priority as illustrated in Figure 21.

China is a priority market for our company

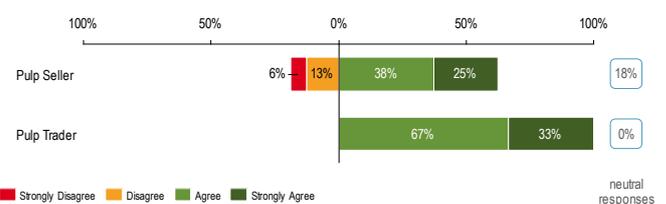


Figure 21: Economic importance of China as market

Selling pulp to China is considered economical for both sellers and traders, although there is some difference visible. 100% of traders agree or strongly agree that selling to China is economical for them. “Only” 57% of sellers agree or strongly agree and 13% of pulp sellers even disagree as seen in Figure 22.

Currently, selling market pulp to China is economical for us

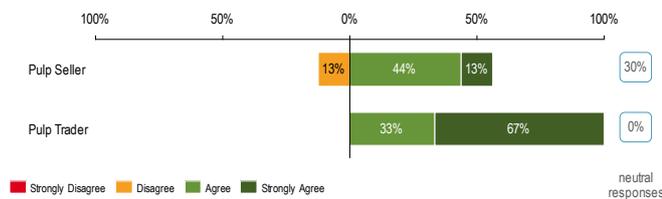


Figure 22: Profitability of selling to China

Overall, pulp sellers believe that doing business in China is more complex than doing business in the EU or North America. Only 15% believe it is easier. Among pulp traders, views are split with 50% considering it more complex and 50% considering it simpler as depicted in Figure 23.

Doing business in China is simpler / same / more complex than in EU / North America

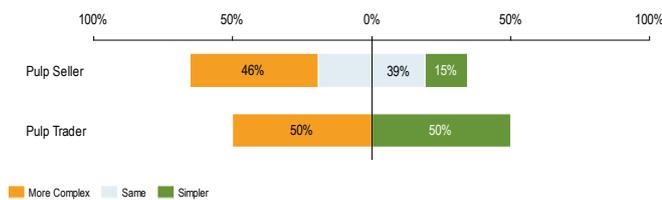


Figure 23: Complexity of doing business in China

Despite this complexity, finding business partners is considered as relatively simple. Overall, both traders and pulp producing sellers consider it fairly simple to find business partners in China. As seen in Figure 24, only 8% of pulp sellers strongly disagree.

It is easy to find business partners in China

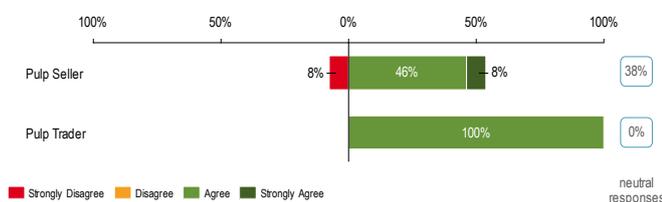


Figure 24: Finding business partners in China

Concluding this chapter, a desire to further explore or deepen the industry’s presence in China is prevalent among survey participants with more than half not seeing any obstacles in doing so. Thus, China is described as an attractive sales and

business location, which the industry keeps under close surveillance.

Chapter 3 – Developments in the field of Industry 4.0

A separate section of the 2016 StepChange Pulp Market Survey addressed the industry’s awareness of and readiness for Industry 4.0. Industry 4.0 is a digital manufacturing revolution, leveraging the unrealized value potential available from the digitalization of industrial processes, products, and services. Throughout the survey, it became clear that not everybody feels well informed about the topic, however, Industry 4.0 is expected to bring change to the industry.

First, as seen in Figure 25, not all participants feel well informed about Industry 4.0. 57% of pulp sellers consider themselves well informed about Industry 4.0. Also, other suppliers rate their knowledge level positively. Pulp buyers and pulp traders, on the other hand, do not feel well informed about Industry 4.0 (67% of buyers and 80% of traders).

I feel well informed about Industry 4.0

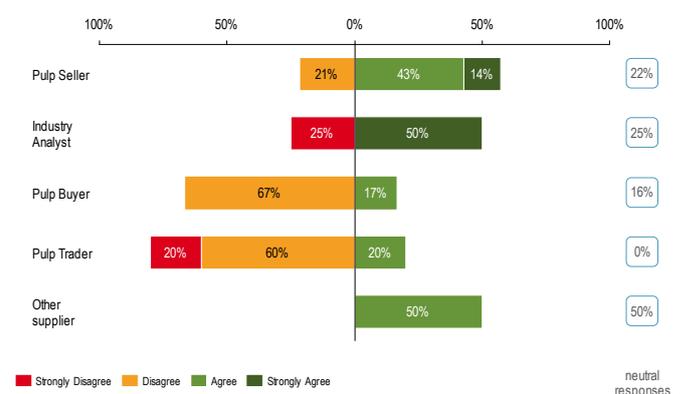


Figure 25: Information level on Industry 4.0

Second, although the awareness varies significantly, the future impact of industry 4.0 on the way business will be conducted is considered significant across all respondent groups (Figure 26). 42% of pulp sellers, 40% of pulp buyers and 66% of industry analysts believe that change will be brought about by Industry 4.0. Only 8% of pulp sellers and 25% of pulp traders disagree.

**My company believes that Industry 4.0 will change the way in which we do business significantly**

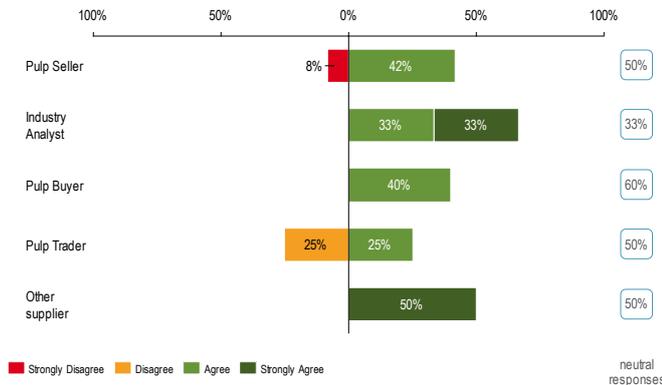


Figure 26: Business modalities and Industry 4.0

The overall benefits of Industry 4.0 are seen in the supply chain, followed by cost reduction and the introduction of new business models. Only 4% of the participants don't expect any benefit of Industry 4.0 as seen in Figure 27.

**Please select the areas where you expect the highest benefits from Industry 4.0 for your business**

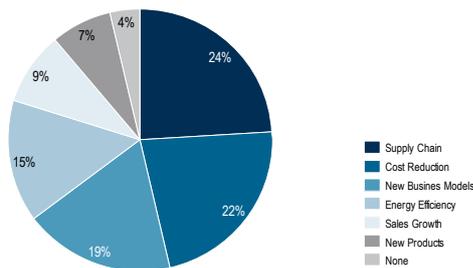


Figure 27: Benefits through Industry 4.0

One particular benefit of Industry 4.0 is considered to be value chain integration (Figure 28). The survey shows that the majority of pulp sellers are concerned about the integration of their suppliers / customers into the value chain. 60% of pulp sellers and 33% of pulp buyers consider this an important topic.

**My company is concerned about the integration of our suppliers or customers into the value chain**

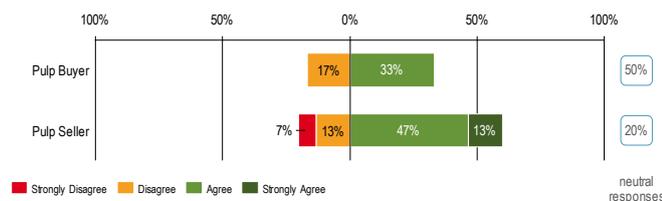


Figure 28: Buyers and sellers as part of the value chain

It is believed that Industry 4.0 will change the way that pulp buyers and sellers interact, as well as pulp distribution modalities. According to 35% of the participants, Industry 4.0 will

change the way that pulp users and producers interact. A further 29% believe that the way that pulp is distributed will be influenced. Only 18% believe that production modalities and buying/selling channels will be affected by Industry 4.0 as seen in Figure 29. This result is in line the results presented in Chapter 1.

**Industry 4.0 will change the way**

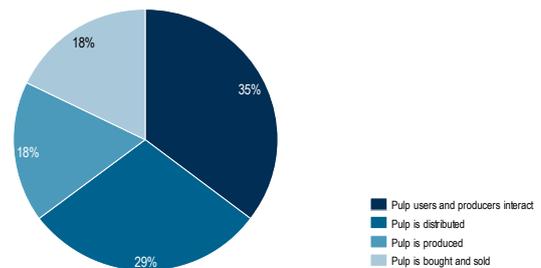


Figure 29: Changes through Industry 4.0

Despite these benefits and opportunities, across all respondent groups – the perception is that not enough investments are being made in the topic – neither in resources, systems or equipment as depicted in Figure 30. 38% of pulp sellers, 66% of pulp buyers and 50% of pulp traders, express doubts that sufficient resources are invested in Industry 4.0. Vague positive views come from some pulp sellers (23%) and other stakeholder groups.

**My company is investing significant resources (people, equipment, systems) in developing Industry 4.0 solutions**

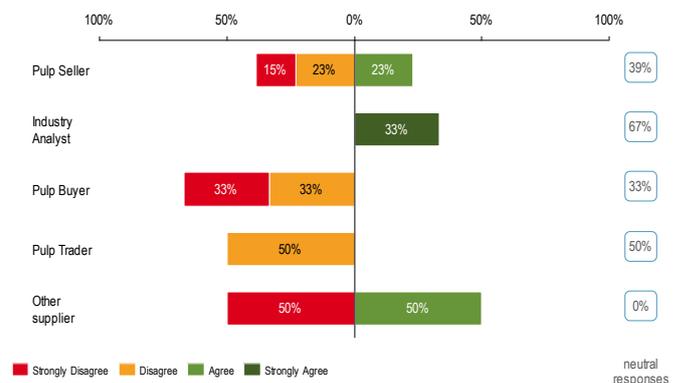


Figure 30: Investments in Industry 4.0

Further obstacles to the implementation of industry 4.0 are considered to be a lack of resources (24%), closely followed by the lack of business cases (22%) and missing technical know-how or skilled employees (22%) as seen in Figure 31. Multiple answers were allowed in this question.

My company faces the following internal obstacles in implementing Industry 4.0

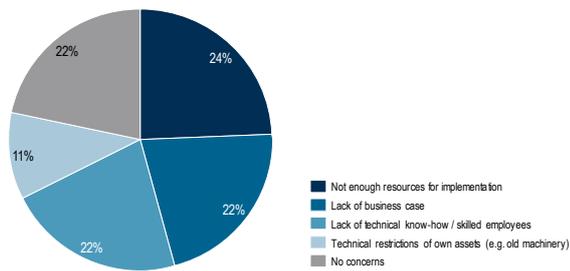


Figure 31: Obstacles to Industry 4.0

In conclusion, inconsistent awareness levels on Industry 4.0 and limited investments as well as internal limitations hold back the positive impact of Industry 4.0.

Conclusion: Is the pulp market a paradox or are we embarking on a new horizon?

This study has captured overall industry sentiments on market developments, China as destination market and Industry 4.0. A number of general trends emerged from it:

- 1) **Maintaining customer-seller relationships:** Direct contact between buyers and sellers remains highly valued in the industry.
- 2) **Improving price stability and transparency:** More price transparency is desired.
- 3) **Keeping an eye on China:** Easy market access and the development of business relationships make China an attractive location.
- 4) **Driving Industry 4.0:** Industry 4.0 is on the radar of most companies, with a wish for more investments and knowledge transfer regarding implementation opportunities.

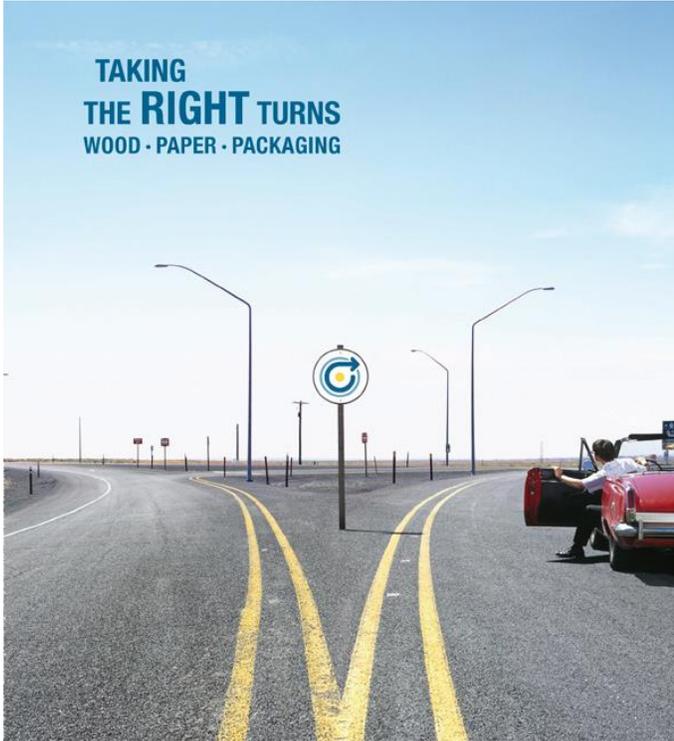
The results of the study show that changes on pulp buying and selling modalities is arriving at slow speed.

Throughout this study, it has become visible that some paradoxes in the pulp buying and selling behavior exist. Although the desire for increased transparency on the pulp market are a concern for respondents, especially sellers are reluctant to engage in using pulp exchanges that would favor transparency. Similarly, although pulp trading is strongly driven by personal relationships trading pulp on the spot market is aspired. As personal relationships are highly valued, however, they seem to be put aside at the expense of cheaper prices.

This gap between sellers' expectations and buyers' realities is particularly widening when looking at suppliers' responsiveness to short term changes. Although all suppliers believe that they handle flexibility requirements well, buyers disagree.

Moreover, this study has shown that customers' satisfactions levels are lower than pulp sellers expect. an immediate opportunity for pulp sellers to pursue and improve satisfaction levels.

Despite these paradoxes, the pulp market is not a paradox in itself, it can rather be considered to be slowly but steadily adapting to the technology driven realities.



### About StepChange Consulting

StepChange is an industry focused and independent management consulting company with a proven track record in supporting clients to achieve sustainable value. StepChange provides support to top tier organizations in the industry from strategy development to implementation of operational improvements.

With an international team of industry experts StepChange can hit the ground running. StepChange provides innovative and yet pragmatic solutions, placing an emphasis on delivering measurable business results.

For further inquiries and comments regarding this Point of View please contact us at [leapfrog@stepchange.com](mailto:leapfrog@stepchange.com).

**Dr. Veronica Schey** is COO at StepChange Consulting. She has over 15 years of global management consulting experience, concentrating on strategic industry topics, sourcing of strategic raw materials as well as managing performance improvements. Besides her client work, she closely monitors the pulp market developments.

**Sarah Rabl** is a consultant at StepChange Consulting. In addition to her client work, she focuses on M&A and operational & performance benchmarking of companies in the pulp, paper and packaging segments.



**DRIVING CHANGE  
TO DELIVER RESULTS**

