

Sentiment Down – Bad weather ahead?

2016 Outlook study reveals: negative outlook in almost all paper segments ♦ general economic outlook still good ♦ Industry priorities on costs and price & margin ♦ strategic topics with lower priorities ♦ Input costs expected to rise ♦ Industry 4.0 – little practice, high expectations

Results from the 2016 pulp and paper outlook and Industry 4.0 survey

Similar to previous years, StepChange Consulting conducted a survey among industry leaders including the participants of the 18th Annual RISI European Conference. The results of this survey were compared to results of prior years to allow for a multi-year comparison.

The outcome of the survey provides an indication about the perception of current market and economic developments in the industry, and highlights the current priorities in the industry. Additionally the survey included a section on the industry's perception on Industry 4.0.

Highlights of the survey:

- 41% of participants expect the economy in their region to strengthen within the next 12 months. A third of the participants expect the economy to stagnate (move sideways) while 20% expect the economy to decline - a more negative sentiment than in 2015.
- With regards to the expected development in the pulp & paper industry for 2016, participants have very diverse views even though the outlook for this year is more negative compared to last year: 45% of respondents believe their industry will increase or reach a peak (48% in 2015). Paper and paperboard manufacturers have lost optimism from last year as the share foreseeing a positive development has decreased from last year's 52% to this year's 23%. Respondents in groups' merchanting and distribution (69%), printing and publishing (59%) and forestry and wood products have a more negative expectation for 2016.
- On the cost side, there is a shift in expectations. During recent years the growing majority has foreseen a cost decrease in raw material, energy and transportation costs. Still in 2016 the majority anticipates a cost decrease in transportation and energy costs yet there is a growing share of respondents foreseeing a cost increase in energy and transportation costs. A majority

anticipates raw material costs to increase in 2016 (42%). In 2015, 29% expected an increase.

- On the sales side, the demand outlook gives contradictory views: one third of the participants see price and demand growth and one third expect them to decrease. 36% of the recipients see no change (50% last year). Some paper and paperboard manufacturing sub-segments are gloomier with regard to selling price: Uncoated woodfree (45%), coated woodfree (38%) and packaging (42%) have a higher share foreseeing decrease. Also uncoated woodfree, coated woodfree and newsprint foresee a demand decrease in 2016.
- At the same time, 67% of participants anticipate required level of customer service to increase. Paper and paperboard manufacturing sub-segments foresee this development as with all participants, but especially the packaging sub-segment does with a share of 82%.
- Company priorities are focused, as last year, mostly on cost reduction, pricing & margin management and on product development and innovation.
- Mergers and Acquisitions, and restructuring and consolidation have a significantly lower importance in the ranking of the industry's priorities.
- Supply chain development and talent acquisition and development received higher priority this year compared to the previous year but still are among the lesser priority items
- The key industry drivers for the future are changing customer behavior & requirements, capacity consolidation and environmental and sustainability requirements.

Industry 4.0 engagement weak

The industry 4.0 survey reveals the following:

- More than half of the recipients anticipate Industry 4.0 to impact the industry and 43% foresee that it will increase the competitiveness of Europe. However, 42% don't see Industry 4.0 to become a game changer.
- Almost two thirds of the respondents' companies are currently not engaged in Industry 4.0. Nevertheless, participants foresee Industry 4.0 as an opportunity for cost reduction.
- Companies engaged with Industry 4.0 mainly focus on predictive analysis, supply chain integration and digitalization of production processes.

- Less than 10% believe their suppliers and customers are prepared for Industry 4.0.
- Only 8% of participants see Industry 4.0 as their company's current priority.

Survey demographics

Survey participants represent a wide spectrum of the industry including suppliers, manufacturers, converters, distributors, printers & publishers as well as financial services.

32% of the survey respondents are from the paper or paperboard manufacturing sector, 11% from merchanting and distribution and 9% from pulp manufacturing. 8% of participants are from converting, 4% are from forestry and wood products and also 4% from printing and publishing. 13% of participants are from either technical, consulting or financial services,

Within the group of participants from paper and paperboard manufacturing (multiple answers were allowed), 32% are from the packaging sector, 20% from Newsprint, coated & uncoated mechanical and 13% from uncoated woodfree. 12% mention to work in the specialty/engineered paper segment; 12% in the coated woodfree paper segment as well as 10% from tissue.

Optimism in Northern Europe, Improvements in South

Overall, respondents have a mixed opinion on the economic development in Europe (Figure 1). Taking a closer look by regions, more optimism comes from Northern Europe incl. the UK, where 59% of participants expect the economy to grow, and only 10% foresee the economy to decline. Compared to 2015, expectations for this region have remained the same with some slight differences (63% expected upwards development and 6% downwards development).

Respondents from Eastern and South East Europe provide a more pessimistic view compared to the other regions with 29% of the respondents expecting the economy to decline (compared to 43% last year). On the other side, 33% of respondents expect the Eastern & South East European economy to increase compared to 43% in 2015. Western & Southern European participants have a very fragmented viewpoint with 43% expecting the economy to increase, 13% expecting a decline and 44% expecting a sideways movement. However, compared to 2015 a significantly higher percentage (10% bp) of respondents expect the economy to grow.

In general, the foreseen economic development implies that the overall sentiment leans toward a further widening of the economic performance gap between Northern & Central, Eastern and Southern Europe.

Macroeconomic development

Where do you see the economy in your region heading in the next 12 months? [%]

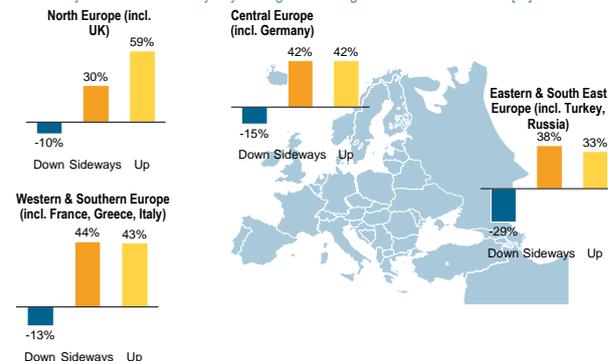


Figure 1 – Economy development expectations by European region

Diverging views on industry development

The specific view on the pulp and paper industry has not improved compared to last year. 45% of all respondents believe their segment of the industry will increase or reach a peak (48% last year). As much as 55% of respondents perceive their respective business segment to be declining or reaching a trough compared to 43% of respondents in 2015. Uncertainty has grown.

Industry development

How will your sector of the pulp and paper industry develop in 2016? [%]

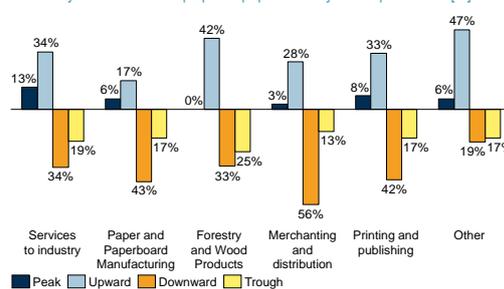


Figure 2 – Pulp and paper industry 2016 development

By industry sector (Figure 2), forestry and wood products are optimistic with a share of 42% and group other with 53% anticipating positive development in 2016 (upward, peak). The group other mainly represents recovery and recycling of paper. However, forestry and wood products optimistic share is slightly less than previous year. Significant change in future development views is paper and paperboard manufacturing: In 2015 52% foresaw a positive development, this year only 23%. A negative outlook can be also observed in printing and publishing, paper and merchanting and distribution (downward, trough). From last year the printing and publishing has increased its pessimism (in 2015 50%, in 2016 59%).

Industry development

How will your sector of the pulp and paper industry develop in 2016? [%]

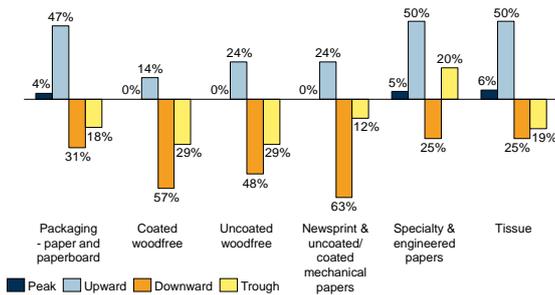


Figure 3 – Pulp and paper 2016 development by paper and paper board manufacturing sub-segments

Expectations (vs. '15) for Packaging, CWF down, News up

Looking in more detail at the paper and paperboard manufacturing sub-segments (Figure 3), respondents from tissue, specialty and engineered papers and packaging are the most optimistic groups (upward, peak). 56% of respondents from tissue, 55% specialty and engineered papers and 51% from packaging sub-segments expect their sector to increase or peak during 2016. These sub-segments have more optimism than last year. Packaging’s share anticipating positive view in 2016 was 62%, this year 52%. This is worrying as there is the expectation for the generally growing packaging sector. Coated woodfree, uncoated woodfree and newsprint/uncoated/coated mechanical papers subgroup are most pessimistic. Especially coated woodfree has become more pessimistic from year 2015 (last year a negative view had 67%, in 2016 86%). Uncoated woodfree’s pessimism last year was 70%, in this year it is 77%).

Macroeconomic development

Where do you see the economy in your region heading in the next 12 months? [%]

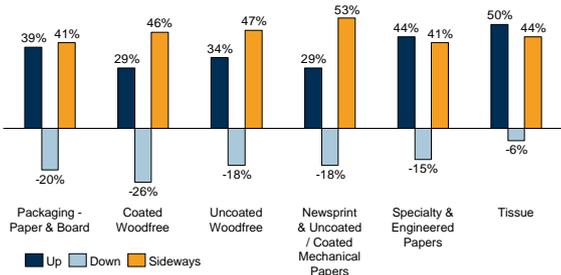


Figure 4 – Pulp and paper 2016 economic development expectations by paper and paper board manufacturing sub-segments

Sub-segments in pulp and paper manufacturing foresee diverse economic development in their regions (Figure 4). Almost half of all sub segment respondents foresee a stagnation in their region (sideways). Most optimistic expecting growth are tissue (50%), specialty and engineered paper (44%) and packaging (39%).

Change in cost trends

The survey covered questions inquiring how respondents see the development of market parameters and which priorities have been defined to deal with business challenges.

On the cost side, the trends indicate diverse views on cost development. The majority see energy and transportation costs to decrease in 2016. There is a clear change in 2016: 42% expect a cost increase in raw materials vs. 29% in 2015.

Industry development

Cost side: What trends are you seeing in the market for the coming year? [%]

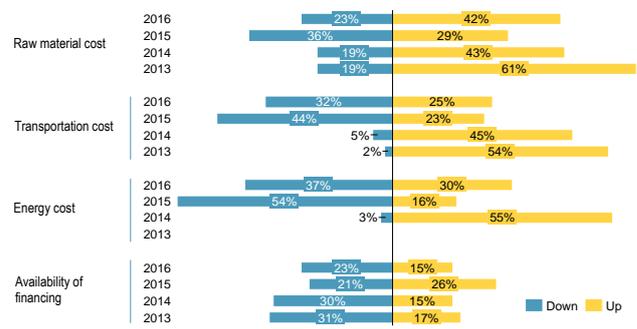


Figure 5 – Historical comparison of cost related trends

Looking more detailed on the cost side shows that there is a shift in the cost trends (Figure 5). During last year, the growing majority has foreseen a cost decrease in raw material, energy and transportation costs. Still in 2016 the majority anticipates a cost decrease in transportation and energy costs yet there is a growing share of respondents foreseeing a cost increase in these items.

In paper and paperboard manufacturing sub-segments, packaging has a slightly larger share of respondents expecting energy cost increase. Uncoated woodfree and coated woodfree producers anticipate higher transportation costs (27% and 29%) in 2016. The expectation for availability of financing is more pessimistic than in 2015.

Packaging, CWF down, News up compared to 2015

On the sales side, respondents were asked which trends are expected in 2016 versus 2015, 67% responded that customer service level requirements are expected to increase further (Figure 6).

Industry development

Sales side: What trends are you seeing in the market for the coming year? [%]

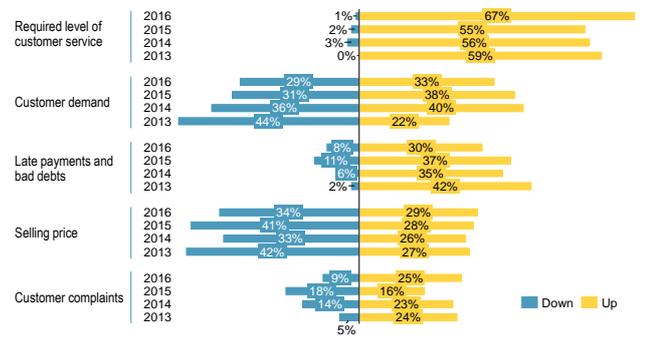


Figure 6 – Historical comparison of sales related trends

For customer demand there is a diverging view. For customer demand, 33% foresee a demand growth and 29% a decline. Uncertainty in demand development is increasing within the industry. Some of the paper and paperboard manufacturing sub-segments see customer demand development in 2016 especially gloomy: Higher shares in uncoated woodfree 55% newsprint and uncoated/ coated mechanical paper 50% and coated woodfree 43% foresee negative trend.

Late payments and bad debts are predicted to remain a challenge yet on a smaller scale.

The perspectives on selling prices are also diverging. 34% expect them to decrease while 29% foresee them to rise. Here the survey reveals interesting data among the industry sub-segments. More gloomy expectations of the 2016 selling price have: Uncoated woodfree (45%) and packaging (42%). All sub-segments in converting are pessimistic about the selling price. More positive expectations exist in the sub-segments newsprint, coated woodfree and specialty and engineered papers.

Customer complaints are predicted to slightly increase from previous year, which show a shift in the trend from decrease to increase.

Overall as a summary, the survey reveals changed views on the cost side, uncertainty in demand and even stronger requirement levels of customer service. Raw material costs are foreseen after a few years of decrease to rise. Overall, the combination of unclear demand development, possible increments on the cost side and strong demands on customer requirement levels keep challenging the industry.

Company priorities largely unchanged, less “strategic”

Companies take both internal and external measures in order to manage profitability. Directly focusing on costs and margins

remains the top priority (Figure 7). Cost reduction this year being the most important priority (57%) together with pricing and margin management initiatives (48%). New product development and innovation keeps its position compared to 2015 with 44%. Cash flow and working capital decreased in priority further; 30% 2016 vs. 36% in 2015.

Industry priorities

What are your company's current priorities? [%]

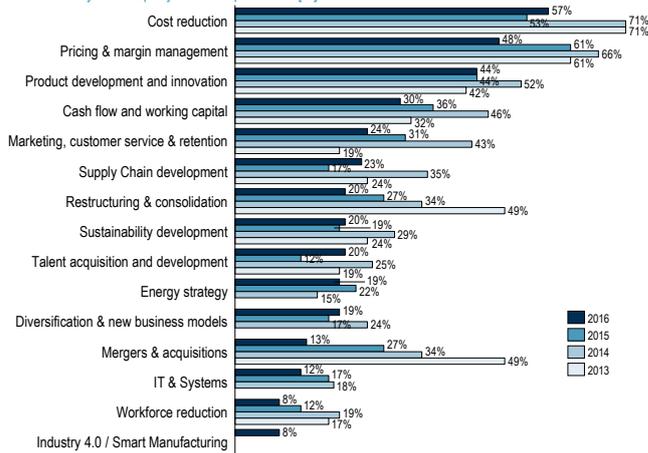


Figure 7 - Historical comparison of current priorities

Many of the top priorities have changed from previous years, but supply chain development, diversification and new business models, sustainability development and especially talent acquisition and development have moved up in priority compared to last year. A significantly decreasing priority trend is in mergers and acquisitions and surprisingly restructuring and consolidation. When participants were asked to answer freely in regard to the single most important driver that will impact their segment over the next 5 years (Figure 8) most concerns exist around customer demand and development of capacities. 20% of participants consider the second most important driver to be capacity development and consolidation. However, the participants noted changes in customer demand as the main driver (23%), followed in third place by availability and cost of inputs (18%) and digitalization and macroeconomic factors (10% each).

Industry drivers

What is the single most important driver for change that will impact your area over the next 5 years? [%]

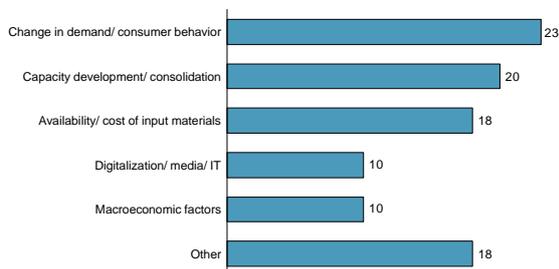


Figure 8 - Single most important driver of business in next 5 years

Industry drivers - Outlook for the next five years

The majority of the industry expects a positive influence of changing customer behavior and requirements (66%, positive, very positive). Also the respondents see capacity consolidation in the industry (53%) in the next 5 years despite its low ranking on industry priorities. On the other side the impact from new capacities (43%), fiber costs (46%) and prices and margins (58%) are seen as a threat to the industry. Respondents have named also drivers from the operational environment that have more of a negative impact on the industry: energy costs and legislation (47%) and digitalization (44%).

Industry drivers

What influence do you expect the following drivers to have on the industry in the next 5 years? [%]

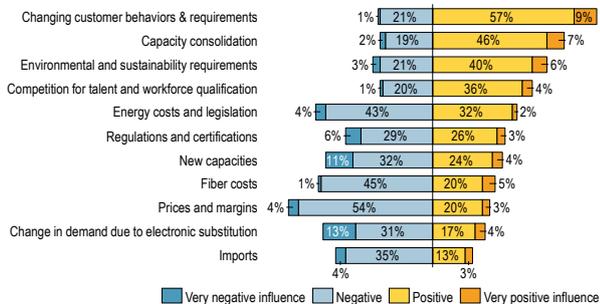


Figure 9 – Expected influence by external drivers

The Packaging segment foresees with a 70% share positive changing customer behavior. On the other side newsprint & uncoated/ coated mechanical papers are more pessimistic as 33% anticipate this driver to be negative.

Companies seem to have aligned some of their priorities according to the influence of the most important industry drivers. Costs and margin management priorities together with customer focus have a high priority in 2016 as shown previously in figure 7. On the other side, drivers like capacity consolidation seem to have lost priority compared to 2015 despite the considerable influence of this parameter as an industry driver.

Industry 4.0 – little practice, high expectations

Two thirds of the participants are familiar with the term Industry 4.0 (Smart Manufacturing). There are higher expectations among the industry than practical implementation of Industry 4.0. Figure 10 shows that 57% of respondents have no work in progress on this topic. Every tenth respondent is strategically aware of Industry 4.0 and is in a project or a research phase.

Industry 4.0

How is your company currently engaged with Industry 4.0 / Smart Manufacturing? [%]

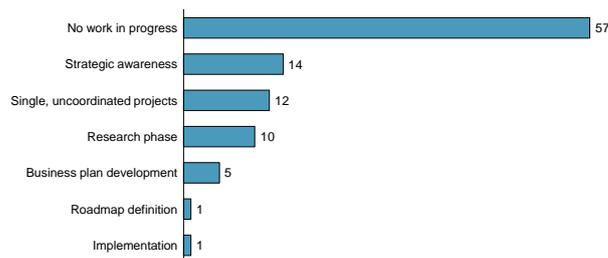


Figure 10 – Engagement of Industry 4.0

Approximately half of the industry believes Industry 4.0 to impact the industry and to increase its competitiveness in Europe (Figure 11). Nonetheless, the respondents are more doubtful about the impact of Industry 4.0 on supply chain transformation (33% foresee a change; 26% not) and more than 40% don't believe that Industry 4.0 will be a game changer.

Industry 4.0

What are your expectations regarding Industry 4.0 / Smart Manufacturing? [%]



Figure 11 – Expectations of Industry 4.0

Looking more closely at the answers, forest and wood products and paper and paperboard manufacturers expect a greater impact of Industry 4.0 on the supply chain (43%).

When looking closer at companies engaged in Industry 4.0 most of the work is in predictive analytics (19%), supply chain integration (16%) and digitalization of production processes (14%). A few are working with smart machinery, digital marketing and smart products (Figure 12).

Industry 4.0

What projects concerning Industry 4.0 / Smart Manufacturing is your company currently engaged with? (multiple answers allowed) [%]

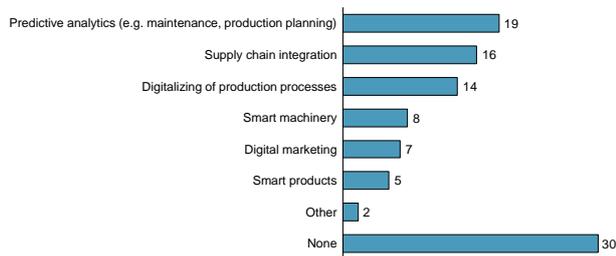


Figure 12 – Current projects under Industry 4.0

Some industry sub-segments in paper and paperboard manufacturing are above average in engaging in Industry 4.0: Packaging, printing, coating and laminating and paperboard containers and boxes.

Participants consider that only 8% of their suppliers and 4% of their customers are prepared for Industry 4.0. Half of the rest are considered to be somewhat prepared and the other half not at all prepared.

The respondents are also considering the benefits of Industry 4.0 from the perspective of their business and society. They foresee benefits for their business especially in cost reduction (Figure 13): 35% consider Industry 4.0 to contribute here the highest business benefits. Energy efficiency and new business models follow.

Industry 4.0

Please select the areas where you expect the highest benefits from Industry 4.0 / Smart Manufacturing for your business? (multiple answers allowed)? [%]

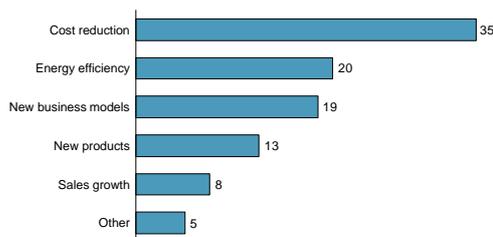


Figure 13 – Benefits of Industry 4.0 for the business

Figure 14 shows the industry’s expectations on benefits for the society of Industry 4.0. The participants anticipate the Industry 4.0 to improve sustainability (27%) followed by a higher skilled workforce (24%). One fifth of the response consider the society to benefit through improved working conditions and re-industrialization of Europe.

Industry 4.0

Please select the areas where you expect the highest benefits from Industry 4.0 / Smart Manufacturing for society? (multiple answers allowed)[%]

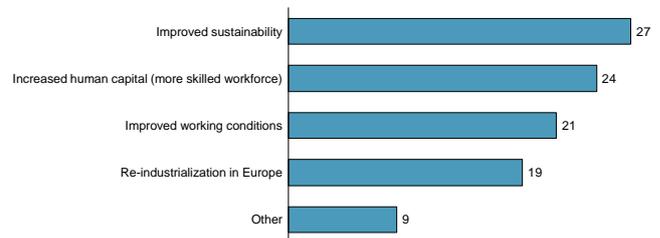


Figure 14 – Benefits of Industry 4.0 for the society

The participants were also asked to evaluate the performance of the industry compared to other sectors under Industry 4.0. Only 11% consider the pulp and paper industry to perform better and 21% equally compared to other sectors. 30% of respondents estimate to do worse.

Summary and Conclusions

The pulp and paper survey continues to reveal a very diverse view about the macroeconomic development in 2016. Northern Europe as a region is more optimistic about the economic development compared to Southern European or Eastern Europe. However the sentiment has changed. The expectations have improved especially in Southern Europe compared to 2015 whereas the expectations in Northern and Central Europe have declined.

The pulp and paper industry’s view on development in 2016 has changed somewhat to last year. While the general trend remains the same (tissue and packaging more positive, graphic paper more negative), there is a changing trend. The packaging sector is less optimistic than in 2015 whereas the newsprint sector is more optimistic compared to 2016.

The survey shows some interesting trend shifts. The previous years’ decreasing cost trend in raw materials, energy and transportation is expected to be coming to an end. The picture is clearest in raw materials where the majority of respondents anticipate a cost increase in 2016. A growing share of participants see transportation and energy costs to rise.

For 2016, the required level of customer service is expected to yet increase further. Customer demand provided a very mixed picture depending on industry sub-segment but with a changing trend in the growth sectors.

Industry priorities remain the same as in 2015: cost reduction, price and margin management and product development. However, their share is decreasing. Mergers and acquisitions are facing a steep decline in the ranking of the industry’s priorities as well as re-structuring and consolidation. Supply

chain development and talent acquisition and development received higher priority this year compared to the previous year. The key future drivers for the industry are believed to be changing customer behavior and requirements, capacity consolidation and availability/cost of input materials.

With regards to Industry 4.0, two thirds of the respondents are familiar with the term. The participants foresee that Industry 4.0 will impact the industry and increase the competitiveness of Europe. However, Industry 4.0 isn't seen as a game changer. Pulp and paper manufacturers are expecting Industry 4.0 to transform their supply chain. Currently only few are engaged in Industry 4.0. Those who are implementing Industry 4.0 are working on predictive analytics, supply chain integration or digitalization. The main benefit from Industry 4.0 is seen especially in cost reduction, but also in energy efficiency and new business models. Keeping the high focus on cost reduction on the priority ladder of the companies in mind, it appears surprising that not more industry players invest in exploiting the potentials of Industry 4.0.



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.

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DRIVING CHANGE
TO DELIVER RESULTS

