



Chongqing Cummins
Engine Co., Ltd.



Benefits at a glance

- ▶ Inventory cut by a third
- ▶ Class A accreditation
- ▶ New manufacturing site to open
- ▶ Forecast accuracy up from 59.9% to 81.6%
- ▶ On time delivery to promise up from 87.4% to 97.8%

Customer Profile

Powering up for success

Having evolved from a state-owned enterprise, Chongqing Cummins Engine Co., Ltd. (CCEC) has a long history which can be traced back to 1951 as a start-up SEO company in downtown Chongqing repairing trucks and then engine manufacturing in 1962. With a culture embedded in its historic past and old management methods, CCEC has now ignited new behaviors amongst its employees and reinvented itself, with a turnover of 400million USD. Helping CCEC on its journey were business transformation specialists Oliver Wight, implementing, a major Integrated Business Planning (IBP) improvement program. Just four years later, CCEC has reaffirmed its position as industry leaders helping make China one of Cummins' largest and fastest growing overseas markets.

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realize the **potential**.[®]

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Cummins in China

A long dynasty

Established in 1995, CCEC is a joint venture of Chongqing Machinery & Electronics Holding (Group) Co. Ltd (CQME) and Cummins Inc. With years of development in the Chinese market, the company has built up a local reputation for designing and manufacturing heavy-duty and high-horse power diesel engines, for use in power generation, heavy-duty vehicles, large buses, construction machinery, rail, mining machinery and port machinery. With a single manufacturing site in Chongqing, CCEC employs 1,300 skilled staff who all play an integral part in Cummins global position as ‘power leaders’ in China. Today, CCEC is one of Cummins’ 30 legal entities in China and the only high horsepower engine manufacturing plant, producing around 15,000 units annually.

Cummins’ connections in China, date back to the end of 1944 when a company in Chongqing sent a letter to Cummins seeking a potential business venture for Cummins engines to be manufactured in China. Mr. Irwin Miller, who was then the General Manager of Cummins Engine showed great interest in this opportunity and had plans to set up a plant in China after the Sino-Japanese War. For some reason, his plan for the market in China was halted for 30 years. It was not until the 1970s, with the thaw of Sino-US relations, the business cooperation opportunity between US and Chinese enterprises reopened again.

Prior to the establishment of CCEC, Cummins and the former China National Heavy-Duty Truck Group, officially signed a license agreement to start producing Cummins heavy-duty and high-horse power diesel engines in Chongqing in 1981. Development of this partnership led to an expansion of its licensing agreement in 1995, creating a 50-50 joint venture called Chongqing Cummins Engine Co., Ltd. (CCEC), which was established on a site in downtown Chongqing. Here, CCEC produced three series of Cummins N, K, M diesel engines, generator sets and other power units, setting out to establish itself as a leader within the industry and the go-to company for engines.

Internal Combustion

While CCEC had firmly established itself in the market, its internal operation needed to be addressed, particularly when it came to the company’s processes and roles. For instance, it was important that employees across different functions knew what they ‘had to do’ but also to work towards the common goals of the company, which were unclear. “Staff worked in silos and needed to think more about the future impact of their actions. Systematic processes were badly needed to enhance cross-functional cooperation,” explains Leo Zhao, General Manager at CCEC.



“With enforcement from the top-down the team finally started to take SBP seriously. The management structure was built around SBP, with all decisions made through the process.”

Leo Zhao, CCEC General Manager

Making a change would be a big challenge for a company the size of CCEC. There was a sense of fear in individual actions, because people didn't want to bear a loss for issues in case of failure. A good example was sandbagging within CCEC's sales team. Sales used Annual Objective Planning (AOP) as the sales target confusing it with the sales (demand) plan. With pressure from leaders for them to hit the forecast and the sales team's concern that supply may not meet customer demand, they would inflate the requirement to ensure they could deliver what they had promised the customer.

The knock-on-effect of this approach was excess inventory. For instance, faced with a potential order for 100 units, the sales team emailed its requirements to the supply chain department for the parts to be prepared. The supply chain department placed an order of 70-part sets, because of the sales department's previous reputation for sandbagging. In the end, the customer confirmed an order for just 22 units. Nobody in the business communicated this to supply chain so it could change the original order. As a result more parts were received than required and this was only picked up in an inventory check at the end of year. It took a further four years to consume the inventory.

“To overcome issues like excess inventory we needed an integrated business process to help the decision makers make better choices and strategy to leverage the resources and benefit the company as a whole for the long-term,” describes Leo Zhao.

With costs gradually increasing across inventory and freight, it was clear that CCEC needed to take a close look at its operations and culture in order to improve and grow. Fortunately, Cummins had a strategic objective in place for the whole of its Chinese operation called BFG – Big Future Growth, with the goal of opening a new plant and introducing new products in the region. Cummins was also working with business transformation specialists Oliver Wight on a global IBP program (known internally as Synchronized Business Planning - SBP), which was to be rolled out in CCEC. With a focus from Cummins internationally on improving its entire matrix, CCEC could start setting the wheels in motion for its own transformation.

Planning to succeed

CCECs' journey began in October 2013 based on the five key pillars that would contribute to transforming the company; SBP, R&D, Oracle (database management system), 5C&SCM and the new plant which it planned to open in 2020 – all of which would help with the ambitious target of doubling the business by 2026. First and foremost, the company needed to tackle its culture and engage its people. Cue Oliver Wight who supported CCEC in meeting its aims - implementing SBP to drive common processes of working internally and collaboratively with suppliers. The objective was to increase



visibility across the organization, and work from one set of numbers to improve forecasts.

At the beginning of CCEC's road to recovery the team was struggling with adopting new processes. It struggled to change and was reliant on IT for results rather than gaining results based on its own efforts. Having always previously worked in the short-term, it was also a big change for staff to focus their attention to the mid-to-long-term plans, required of SBP.

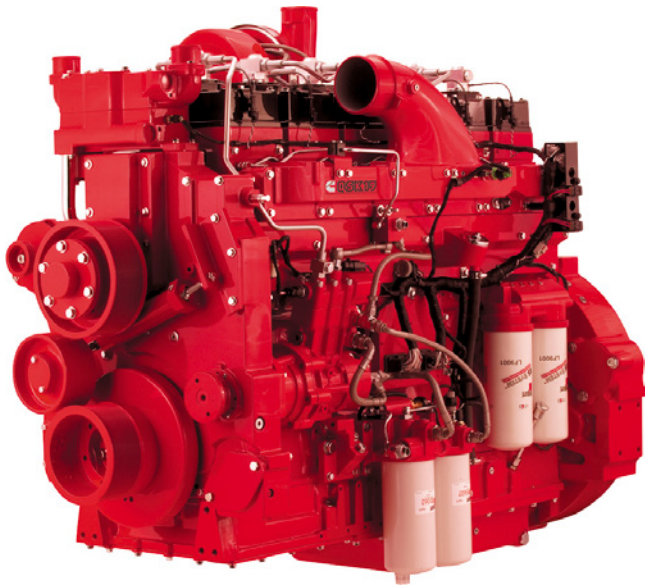
Management recognized the importance of SBP for the strategic direction of the company and that it required the engagement from all functions in the organization, "It was a must" asserts Mr. Yu Hai, Sales and Marketing Director at CCEC. It was the discipline and determination of the leadership team that ultimately led to a change of attitude amongst staff.

It wasn't until two years into the change program that things got serious. "With enforcement from the top-down, the team finally started to take SBP seriously. The management structure was built around SBP, with all decisions made through the process." states Zhao. One person who was instrumental in getting control of the situation and making things happen was CCEC's SBP leader, Mr Peng who came

on board in 2015, "Our SBP leader was most influential. The discipline he brought to bear meant that no one was allowed to miss SBP review meetings and through his persistence, behaviors did slowly begin to change as team started to taste the benefits." explains Leo Zhao.

A monthly management business review (MBR) meeting was scheduled with all 13 leaders in the business discussing internal relationships, strategy and plans. These meeting gave each function a voice and forced decisions to be made within the SBP forum, rather than being discussed 'off line' between individual departments. "This proved very powerful" states CCEC's Finance Director Robert Hou. He continues "Our GM joined every meeting to see for himself what was happening. He also got the finance team to interact more with the business teams through SBP to help drive business growth."

It wasn't just the review meetings that proved beneficial for CCEC. Education, workshops, and coaching sessions provided by Oliver Wight and Cummins internal SBP consultant Songhua Mao, were critical to the company's success. This was supported by Oliver Wight's Class A Business Excellence Checklist scoring system which forced the team to follow best practice with a common goal to achieving business excellence.



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“It was an honor working with the CCEC team to make the transformation a reality. This wouldn’t have happened without the leadership’s full recognition of and engagement with SBP,” explains Songhua Mao. “It also would have taken a lot longer for CCEC to achieve excellence without the support from other Cummins sites.”

CCEC’s SBP leader Canlin Peng also recognised the importance of those involved, noting that “GEP and ABO SBP team were in full support of the program throughout the journey providing plenty of onsite education, coaching and lots of process and solution development. In particular CCEC recognise the dedication provided by Debbie Climer, Chris Cox, David Song and Songhua Mao from Corp GEP and the ABO team.”

Revving up performance

Once the entire company had embraced the new undertaking and fully grasped the mechanics of SBP, the true value of the journey was becoming evident. Leadership had taken control and there was a single plan and one set of numbers to run the business. “With SBP we had a clearer vision on what needed

to do for the mid and long-term period, while ensuring we didn’t miss our short-term targets,” says Mr. Yu Hai, Sales and Marketing Director. Product Review Owner, Guan Rong, agrees: “With SBP we can look into the future and identify any significant changes that may be critical to our product development and product life cycle,” he says. “With the benefit of SBP providing early awareness of delayed projects and expenditure, the team can then agree which projects to prioritize.”

Four years into SBP CCEC was significantly benefiting from its hard work, especially the sales team which now had a clear understanding of what was happening throughout the company. It communicated with the supply chain for opportunities and updated them when there were changes in demand, so they could adjust accordingly. AOP was no longer confused with demand and used as a sales target, instead all data for AOP and the company’s five-year strategy was coming from SBP using the single set of numbers. “All leaders trust the data,” asserts Guan Rong. Sales had also changed its approach to become more customer-driven, looking forward to future needs rather than just simply responding to orders.

“With an integrated plan to run the business, we now have the confidence to open and manage the new plant.”

Leo Zhao, CCEC General Manager



“Across the company firefighting has dropped considerably, and raw material shortages dramatically reduced,” explains Li Zhaohui, Supply Chain Review Leader. “KPI settings are now driving cross-functional integration with improved planning across all operations.” Better planning meant that service was vastly improved - rushed customer orders have been eliminated with on time delivery to promise improving from 87.4% in 2012 to 97.8% in 2017 (see figure 1). Forecast accuracy also improved significantly from 59.9% in 2014 to 81.6% in 2017 (see figure 1).

Four years after it began its journey, “CCEC was using SBP as a single common language,” says Li Zhaohui. Its effectiveness to run the business meant the company also reached the milestone of the Class A standard - internally branded as ‘Cummins Excellent’ - for SBP. This was the proof it had

achieved its aim of transformation, both in terms of cultural behavior and performance.

In recognition of the company’s achievements all employees received a financial bonus from the GM for their contributions to SBP implementation at the end of 2017, highlighting the success of the company and contributing further to staff morale.

Taking note of CCEC’s improvements, were other subsidiary companies in CQME, with the 50 percent shareholder of CCEC now keen to use CCEC as a benchmark for their own transformation programs. CCEC had become a ‘star company’ and was invited to ‘share its secret’ on how it had become so profitable, a great honor for the people in the business.

Performance metric	2012	2013	2014	2015	2016	2017
On time delivery - to original promise to order	87.43	94.93	96.57	95.32	96.78	97.8
Premium freight = % of total freight =	7.7%	8.2%	7.7%	8.3%	8.2%	4.1%
Forecast accuracy			59.9%	65.0%	75.5%	81.6%

Figure 1: Performance impact of SBP



Underpinning Oliver Wight’s transformative philosophies is the concept of people, processes and tools, and cultivating the right environment to enable a top-down, bottom-up approach. This was fundamental for CCEC. Agreeing that empowered people can influence change Leo Zhao enthuses, “For companies worldwide, regardless of culture or language, SBP can be used to resolve issues through a standard process. It is more about people and those who lead; consistency of leadership is vital.”

Gearing up for the future

CCEC is now full speed ahead working towards the opening of its new plant in 2020. The new site, located 20km from the current site, will eventually replace the old plant offering a better environment and facilities for its future manufacturing. Plans are underway for the new site’s operational model design in line with SBP and how the site will be managed. This includes linking with CCEC’s existing Oracle system. “With an integrated

plan to run the business, we now have the confidence to open and manage the new plant.” states Leo Zhao.

Having overcome traditional thinking and brought itself into the 21st century, CCEC is making its own contribution to the modernization of China’s engine industry. The company’s manufacturing capabilities is synchronized with the developments of Cummins globally and its products are recognized in the Chinese market for their power, economy, reliability, durability, safety and environmental performance.



When you talk to Oliver Wight about improving your business, we'll assume you want results, not just better processes - things like increased revenues and margins and greater market share. If you have the ambition, it is possible to make improvements that truly transform the performance of your organization and create more fulfilling roles for the people within it. We believe this can only be delivered by your own people. So, unlike other consultancy firms, we transfer our knowledge to you; knowledge that comes from nearly 50 years of working with some of the world's best-known companies.



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