Setting solid foundations for integrated management

Ma Steel chooses HP to modernise its IT management in the face of global competition.

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MA STEEL

"We needed to transform every level of our IT management to keep up with increasing competition. The steel and iron industry is one of scale and speed – and the HP consultation team understood that perfectly, and demonstrated a very high level of professionalism throughout the project. With HP's solutions firmly in place, we are now more market-responsive, our operating systems are more integrated, we've managed to significantly cut down our intermediate inventory, and human errors have been appreciably reduced."

– Gao Haijian, Deputy General Manager, Ma Steel

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Ma Steel is one of the largest steel and iron manufacturers in China, and the biggest industrial enterprise in Anhui province. Subdivided into Magang (Group) Holding Company Limited and Maanshan Iron & Steel Company Limited in 1993 as part of national efforts to standardise share-holding reforms, Ma Steel's annual turnover exceeds 8 million tonnes and its total assets top 30 billion RMB. Its advanced, world class production lines conform to the strictest international standards including ISO 9001, and supply quality steel and iron to 48 countries throughout the world.

Closing the gaps

The floodgates of global competition were opened the moment China joined the WTO. Immediately, steel and iron enterprises all over the country began steeling themselves to defend their domestic and international market share. It was against this uncertain backdrop that Ma Steel decided to undergo informatisation to cope with the rapidly changing economic landscape.

As per WTO rules, China had to curtail the amount of economic protection it afforded to state-owned enterprises, including Ma Steel. However, like many other state-owned enterprises, Ma Steel was encumbered with outdated technology and equipment and redundant manpower. How it could surge ahead in the face of increasing competition while shedding the excesses of the past were critical issues that the company needed to resolve to stay competitive. And more than simply installing new equipment, what Ma Steel needed was a complete rehaul of its information management system.

Rolling out changes, one phase at a time

Faced with the double threat of globalisation and outdated practices, Ma Steel started searching for solutions – and turned to HP for three reasons. After several consultation sessions, it became exceedingly clear that HP had a deep understanding of their unique needs, and had good rapport with its technical staff on all levels. Furthermore, HP's excellent track record with other steel and iron giants, especially ThyssenKrupp, gave Ma Steel the confidence to elect HP.

Tasked with Ma Steel's informatisation, HP set down three main goals to achieve based on the company's current stage of IT development: to make technology work harder, to increase production efficiency, and enhance equipment utilisation. HP aimed to streamline Ma Steel's management process based on a "coordinated working procedure" principle, and eventually transform the management structure from one that was function-oriented to workflow-oriented.

At the same time, HP planned to integrate the way its management handled information, accelerate the speed of reform, and put a management mechanism in place that would be highly responsive to the market.

To do this, HP drafted a set of guidelines to meet Ma Steel's diverse IT management needs:

- Build a business management workflow that conforms to specific business needs
- Carry out a stepwise implementation plan with application software developed in parallel
- Synchronise the progress of the Flat Cold-rolled Sheet and Flat Hot-rolled Sheet production lines
- Create project testing methods and testing plans

By evaluating Ma Steel's current status, HP decided to roll out the changes in two separate phases. The first phase would entail changes to the SAP steel solution (sales/quality/production/cost/equipment/materials/enquiry system), level 3 solution (CSP/steel-making/cold-rolled steel), and the system interfaces (level 3 systems/existing sales system/existing financial system), while second phase changes included the SAP financial management system, the supply chain management system, and the implementation of SAP in other branch factories.

Informatisation: Full speed ahead

Ma Steel's overall informatisation project took place in two distinct stages: planning and implementation. Both took over a year to finalise and the project was eventually completed in October 2003.

Planning: A blueprint for success

To facilitate overall IT planning, HP conducted a thorough survey of Ma Steel's management, workflows, production, and informatisation status; and performed a competitive analysis of domestic and international enterprises similar to Ma Steel. With this information in hand, HP then proceeded to design a preliminary structural framework for implementation.

Implementation: A three-level plan

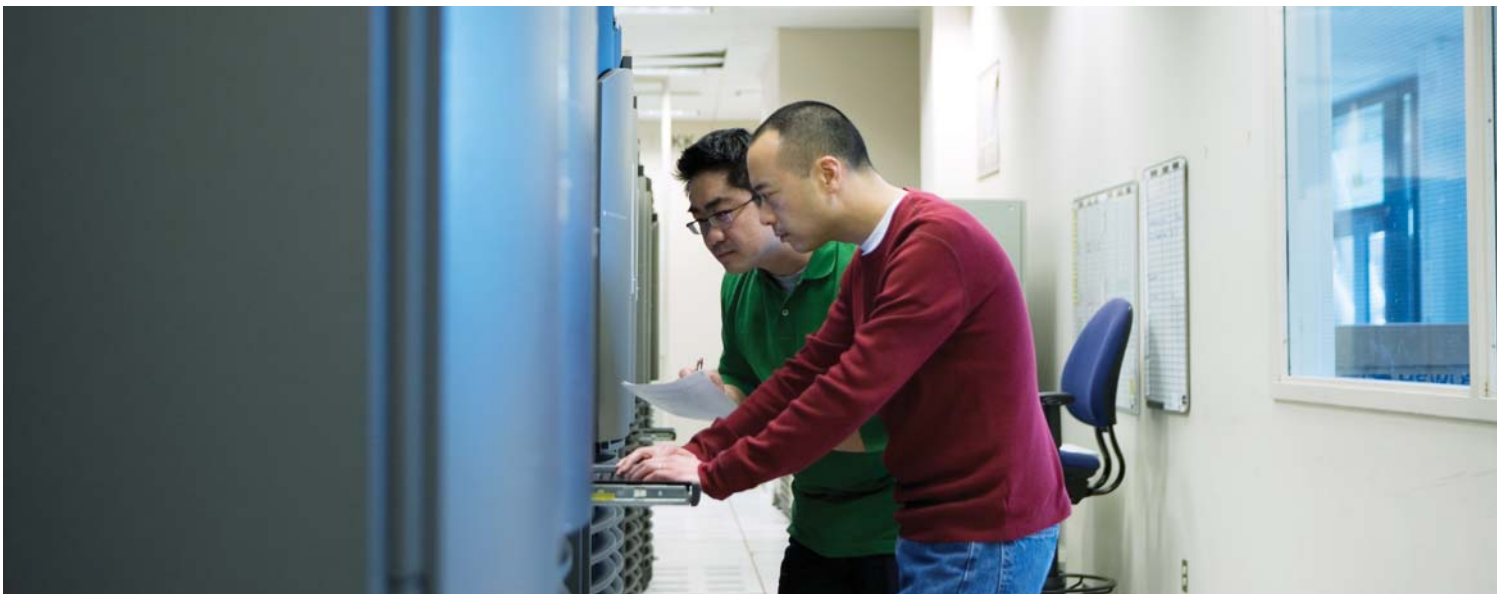
HP planned and designed a three-level implementation system that would ensure that the working procedures of the CSP and cold-rolling production lines could be seamlessly integrated, that the equipment installed could be fully utilised, and so that the highest investment returns possible could be achieved.

Central to HP's initiative was a level 3 MES system of the CSP production line featuring a semi-endless rolling technique – a technical innovation that all but sealed Ma Steel's success. By adopting this technique in CSP, the company not only kept running costs manageable and sidestepped the problems plaguing conventional hot continuous rolling lines using the endless rolling technique, but it also helped Ma Steel avoid the inherent complications of single slab rolling processes.

The level 3 MES system proved so effective and economical that in that very same year, Ma Steel was successful in manufacturing electrical sheets via the CSP process – a first in China. Electrical sheets, a functional metal, are difficult to produce and so are in constant short supply. But with Ma Steel's new level 3 MES system in place, CSP has quickly risen to become a new and powerful driving force, boosting the company's production and business growth to greater heights.

Poised to compete

By implementing an integrated solution built on the SAP software platform, Ma Steel was able to standardise information sharing across the manufacturing, selling, and research processes. With advanced technology on its side, Ma Steel also became the first steel and iron enterprise in China to graduate from fundamental automation (level 1), process control (level 2), manufacturing execution (level 3) to specialised management (level 4). System information is now shared across all four levels, enabling real-time monitoring of production changes. With information sharing and material flow now streamlined in a unified manner, the production cycle has been effectively shortened, and Ma Steel is now poised to compete in a rapidly evolving global environment.



Challenges

- Rise above domestic and international competition due to China's entry into the WTO
- Modernise Ma Steel's outdated technology, equipment, and streamline its redundant manpower
- Update the management information system

Solutions

- Planning
  - In-depth surveys of management, workflows, production, and informatisation status, including a competitive analysis
- Implementation
  - SAP steel solution
  - Level 3 MES system
  - System interfaces
  - SAP financial management system and supply chain management system
  - Implementation of SAP in other branch factories

Benefits

- Simplicity
  - Integrated information sharing across manufacturing, selling, and research processes
- Agility
  - Ma Steel became the first steel and iron enterprise in China to successfully achieve full integration across all four levels of fundamental automation, process control, manufacturing execution, and specialised management
- Value
  - Real-time monitoring of production changes
  - Shortened production cycle

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