

## Foreword

# Technology and Industry



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While on a trip to Detroit ten odd years ago, I paid a visit to Green Field Village over one weekend. That place may be better understood by the fellow Japanese if I term it as an American version of “Museum Meijimura”. It is a historic park that Henry Ford created funding it out of his own coffers to conserve an American history for the subsequent generations. There I came across a photograph among the exhibits that impressed me in particular. The photo showed Ford, Edison and McCormick together, the trio who may well be said to have laid the groundwork for present American industries.

Thomas A. Edison employed electromagnetics, a new discipline of science in those days, and demonstrated potential of electric industry through patents for his inventions that number more than 1000. He was an entrepreneur in that sense. Henry Ford applied a belt conveyor moving assembly line system to the manufacture of automobiles, a European invention. With that achievement, he as an industrialist greatly contributed to enhancing the national strength of the United States. Meanwhile, Cyrus H. McCormick was the owner of a company manufacturing agricultural equipment. He invented a new sales system called installment sales for the sake of farmers with limited financial resources. His new system helped disseminate agricultural machinery in the United States. Thanks to his innovation, farming was mechanized, bringing about a large-scale agricultural production, and leading to the onset of the contemporary US agriculture that boasts its No. 1 status in the world. Moreover, he added a tint of finance to his manufacturing and turned it into what was a half secondary and half tertiary industry. On the other hand, US agriculture gradually adopted the mass production system for individual products, and as a result, the agriculture as part of the primary industry developed a new business style having a hue of the secondary industry.

Already in the prewar days, Yoshinari Kawai, the former president and later chairman of Komatsu Ltd., took note of the large-scale mechanized agriculture in America and pressed ahead with developing his own agricultural tractors. He decided to change course later on and began to apply the acquired technology to mechanized civil engineering. That was the beginning of the present Komatsu Ltd. as a heavy equipment manufacturer. To think of this episode, we at Komatsu may well position ourselves to be grandsons of McCormick in the history of industry. The three of them differ from each other in a type of personality; one is an entrepreneur, another is an innovator of production engineering and the last is a revolutionary industrialist. Yet the three share a common trait in that they shaped the groundwork for what were to become the present American industries. The photo tells us of the fact that they maintained a good relationship as contemporaries and in the same locality.

In the postwar era, the Japan's business world has developed a new mode of management that revolved around a keyword of “Quality Control”. It was a society-wide creation in the sense that a whole spectrum of business society has participated in its development. “Any activity to bring up quality is costly” That had been the generally accepted perception not only at home but abroad as well. It was this innovation of management through quality control, however, that broke the common sense of so called “higher quality, higher cost”. It has

proven that when quality control activities are pursued to their utmost end, the total production cost is brought down to the minimum. Activities to improve product quality necessarily requires rational business behavior, or for that matter, rational structure of products. In pursuit of rationality from a quality angle, various business activities will naturally converge on an agenda of “minimum total cost” and thus strengthening corporate healthiness will be attained.

TQC was a product which required no less than 30 years for its consummation. (Incidentally, Komatsu advocated TQC and played a leading role at the early stage of its introduction.) However, once its effectiveness had been established, competitors in every field of business lost no time in practicing TQC. The upshot was that the more “KAIZEN” became an international catchword, the less superiority TQC could wield on the scene of worldwide competition.

I wonder what will be keywords to express traction forces that pull technology and industries through the next generation. I feel secretly at heart that the next generation keywords will be environment conservation measures. While the quality control effort used to be a driving force for attaining the minimum total cost of products on the part of individual companies, environmental conservation measures will be efforts in pursuit of the minimum total cost by means that sustain a healthy global environment. When generators of industrial or household wastes and their victims stand on an equal footing and share this view, a search for true solutions to environmental problems will be commenced. The Internet will increasingly help promote information sharing, and as a result the gap in the power of control over information between businesses and individuals must be narrowed down. That trend will serve to bring various environmental problems to daylight.

As environmental awareness in the society heightens, economic principles begin to function naturally. Consequently people grow conscious of a cost for the solution. As was the case with quality improvement activities that manufacturers once tried to steer clear of for fear of immediate cost increases, an assortment of environmental conservation measures may invite a similar cost increase, temporary though. Yet in the long-term perspective, only such commodities and technology that will squarely face environmental problems will eventually succeed in achieving the minimum total cost. As a country of high population density, Japan enjoys a high consumption propensity, but this fact also means it is a society which is highly conscious of environmental problems. Japan’s industries at large should continue to hold high environmental awareness and strive to become “a highly developed country” in environmental issues. I believe that should be a model for the Japan’s industries from now on.

It is my hope to see that Komatsu, which once worked out unique quality control techniques in the TQC age, will innovate the environmental management skills in the 21st Century, through which it will prosper and go down history of industry as a leader of industry.