Chapter 15
**Whatever happened to Homer Sarasohn?**

*"Had Deming and I stayed at home, the Japanese would have achieved world quality leadership all the same."*
*—Joseph Juran*

On the afternoon of 21 November 1949, in Osaka, Japan, a young radio engineer from Raytheon stood in front of a classroom full of Japanese telecommunications experts and began to lecture them on the fundamentals of business management. The engineer's name was Homer Sarasohn. He and a few other electronics experts had been co-opted from their companies and assigned to the command headquarters of General Douglas MacArthur in Japan. The victors were teaching the vanquished.

It was not a day too soon. Immediately after the end of World War II in 1945 the big family corporations in Japan, the so-called Zaibatsu companies, had been dissolved by the U.S. high command, determined to prevent any reestablishment of the kind of economic and military co-operation that had characterized the Japanese military regime during the war.

This anti-capitalist policy, however, had played straight into the hands of socialist militants and trade unions. Strikes and agitation were commonplace in Japanese companies as they struggled to rebuild their industries. Communism was dominating Eastern Europe and China, and by late 1948 the United States had changed its policy. If Japan was to see off the communist threat, reasoned Washington, it would need a strong capitalist base. The corporate sector needed to succeed, preferably in the American way.

But just what was this American way? What were the Japanese to learn? Scientific management all over again? Japanese companies were in serious trouble. A series of case studies in the telecommunications sector carried out by a group of American engineers made dismal reading. Some 75 percent of Japanese telecommunications infrastructure had been destroyed by bombing. Even where it survived it was not working to capacity. Three years after the end of the war the telephone lines between Tokyo and Osaka were open twenty-four hours a day, but they were only manned for nine hours a day, the duration of a single shift.[1] The companies, the engineers reported, were over-staffed and their management was inefficient and weak. Delegation of authority was nonexistent. "The weaknesses of management were causing a tide of regression which, allowed to go unchecked, might well culminate in the collapse of the industry," warned the engineers.[2]

The engineers, led by Frank Polkinghorn, a radar and communications design expert at Bell Laboratories, the research arm of AT&T, were attached to the headquarters' Civil Communications Section (CCS). Their study led to a proposal for a series of seminars in Tokyo and Osaka designed initially for the telecommunications industry. Not everyone among the occupation authorities was supportive of the classes. Officers in the Economics and Social Section (ESS) were worried the seminars could be too successful, giving the Japanese a competitive edge. MacArthur heard the opposing arguments put by Homer Sarasohn, the group's

radio adviser, and an ESS official. As the meeting ended the general turned to Sarasohn and said, "Go do it."[3]

With Charles Protzman, the telephone engineering adviser also seconded from Western Electric, Sarasohn put together a textbook for the seminars. Sarasohn covered the section on management philosophy, which he would use for the first lecture.[4]

When Sarasohn entered the wooden-framed lecture room to deliver his first class he was just thirty-three years old. In front of him was the cream of Japanese telecommunications talent, people like Masaharu Matsushita, the adopted son of Konosuke Matsushita, the charismatic founder of Matsushita Electrical. It would not be an overestimation of the importance of the occasion to say that when this young American radio engineer mounted the podium, paper in hand, the hopes of Japan were assembled at his feet.[5]

An occasion of such significance demanded something special, but management texts cannot normally be relied upon to deliver anything out of the ordinary. The class was expecting an outline of management processes sprinkled with technical language. Sarasohn was an engineer and young to boot, with little experience of management. But perhaps he felt there was a need to approach the subject from its roots. He was, after all, working with an almost blank sheet. So Sarasohn's lecture began with the most fundamental of questions: "Why does any company exist?" Pursuing the theme, he continued:

"What is the reason for being of any enterprise? Many people would probably answer these questions by saying that the purpose of a company is to make profit. In fact, if I were to ask you to write down right now the principal reason why your companies are in business I suppose that most of the answers would be something of this sort.

"But such a statement is not a complete idea, nor is it a satisfactory answer, because it does not clearly state the objective of the company, the principal goal that the company management is to strive for. A company's objective should be stated in a way that will not permit of any uncertainty as to its real fundamental purpose. For example, there are two ways of looking at that statement about profit. One is to make the product for a cost less than the price at which it is to be sold. The other is to sell the product for a price higher than it costs to make.

"These two views are almost the same. But not quite. The first implies a cost-conscious attitude on the part of the company. The second seems to say whatever the product costs, it will be sold at a higher price.

"There is another fault I would find in such a statement. It is entirely selfish and one-sided. It ignores entirely the sociological aspects which should be a part of a company's thinking. A business enterprise should be based on its responsibility to the public, upon service to its customers and upon the realization that it can and does exert some influence on the life of the community in which it is located. These things are just as important to consider as is the profit motive.

"The founder of the Newport News Shipbuilding and Dry Dock Company, when he was starting his company many years ago, wrote down his idea of the objective—the purpose—of the enterprise. He put it this way. 'We shall build good ships here; at a profit if we can; at a loss if we must; but always good ships.'

"This is the guiding principle of this company and its fundamental policy. And it is a good one too because in a very few words it tells the whole reason for existence of the enterprise. And yet inherent in these few words there is a wealth of meaning. The determination to put quality ahead of profit. A promise to stay in business in spite of adversity. A determination to find the best production methods.

"Every business enterprise should have as its very basic policy a simple clear statement, something of this nature, which will set forth its reason for being. In fact, it is imperative that it should have such a fundamental pronouncement because there are some very definite and important uses to which it can be put. The most important use of basic policy is to aim the entire resources and efforts of the company toward a well-defined target."[6]

Each member of the class was asked to go away and draft a corporate philosophy for the company, what later became known as a "mission statement." The only member there who had no need of such homework was Masaharu Matsushita. His company was already running to a well-defined philosophy outlined by Konosuke Matsushita some years earlier.

Matsushita's basic management objective is worth noting, because it was drawn up in 1929 when Japan, like much of the West, was in the depths of depression. It was enough, at the time, for most companies to survive, never mind searching their souls for the meaning of their existence. Konosuke Matsushita thought otherwise. "Recognizing our responsibilities as industrialists," he wrote, "we will devote ourselves to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world."[7]

There followed the company creed: "Progress and development can be realized only through the combined efforts and co-operation of each employee of our company. United in spirit, we pledge to perform our corporate duties with dedication, diligence and integrity."[8] Not bad for a company that started with a single simple product—an extension connection to a light-bulb socket. Even today, with a product range numbering in the thousands, the objective, the creed and an additional seven guiding principles are recited each day like corporate prayers by Matsushita employees as they begin work.

Sarasohn was surprised and impressed to discover Masaharu Matsushita's guiding philosophy. "He alone among all the students who attended the CCS seminar classes knew and understood the essential importance of the basic beliefs of an organization as the starting point for the successful management of any company," Sarasohn later recalled.[9] In the light of subsequent developments it is worth emphasizing Sarasohn's point about quality, when he spoke about the "determination to put quality ahead of profit." These classes predated the lecture tours of W Edwards Deming and Joseph Juran that would bring both men fame and recognition in Japan for their contribution to the postwar quality movement. Sarasohn's reputation, like that of his contemporaries schooled in the quality developments pioneered in Western Electric, was eclipsed by the subsequent appearance of Deming. Deming became the first American to be honored with the Order of the Sacred Treasure, an honor later awarded to Juran but never to Sarasohn. So why has Sarasohn's inspirational contribution been so overlooked?

The answer is partly related to Sarasohn's age and status. He was a comparatively junior executive, seconded in mid-career. Deming was an academic thoroughbred, accustomed to

making presentations and writing up research. He was certainly no management specialist. As a statistician his first visit to Japan in 1949 was to advise on the census. He received little co-operation at that stage from the Japanese. He returned in 1950 at the invitation of the Union of Japanese Scientists and Engineers (JUSE) to lecture on statistical methods for industry. Deming blamed the problems of industry on management's failure to eliminate waste. His answer was a process-driven approach that proved both appealing and understandable to Japanese managements familiar with the emphasis on measurement stressed in scientific management. Moreover he had an important sponsor in the Japan Federation of Economic Organizations, an association of Japanese chief executives known as *Keidanren*. He was speaking to the people who could make a difference in their companies.

Deming was strongly influenced by Walter Shewhart, a statistician at Bell Laboratories, and by Joseph Juran, one of the rising stars in Western Electric's community of management excellence. Deming adapted his ideas to recognize the vital contribution of employees who, he argued, should no longer be treated as commodities. He set himself against performance-related pay schemes, which he called "fear schemes," and advocated co-operative problem-solving in teams. But Deming remained fundamentally attached to scientific management. He had worked briefly as an intern at Western Electric at the same time as Juran in the 1920s, although their paths did not cross until they met in Washington during the war and, even though they were good friends, they never collaborated professionally.

Unlike Deming, Juran had a corporate background. He began looking at quality when he was asked to help establish a quality inspection team at the Hawthorne works in the 1930s. He defined two areas of quality —quality of design and quality of conformance. The recognition of these distinctions became vital in the innovation and production of goods. Too many companies and too many standards—the European ISO 9000 standard, for example—would concentrate on conformance while ignoring design. Companies, therefore, that produced an average product might be able to boast a high degree of consistency in the quality of their product, thereby achieving a quality standard, without necessarily having produced any great excellence in the quality of design.

Juran explained these differences in his seminal work on quality, the *Quality Control Handbook* of 1951. When Deming drew the attention of Japanese companies to the work, JUSE extended an invitation to Juran, who began to outline his own ideas on quality to business audiences in Japan. Much has been written on the distinctions between the work of Deming and Juran but it has perhaps been exaggerated. The real distinction was in their approach: Deming was the academic, leaning heavily on statistical method; Juran was the corporate manager, schooled on cost controlling and the practical elimination of waste. The stronger recognition of Deming depended on two factors: he was the first to tour Japan, and he had an award named after him— the Deming prize, inaugurated by JUSE in 1951. JUSE, more a professional body than a trade union, wanted the award to increase its influence and market its training programs in Japanese companies.

Juran has dismissed as a popular myth the notion that he and Deming were together responsible for Japan's success in driving quality standards throughout its industries. "In my view there is not a shred of truth in such assertions," he said. "Had Deming and I stayed at home, the Japanese would have achieved world quality leadership all the same. We did provide a jump start, without which the Japanese would have been put to more work and the job might have taken longer, but

they would still be ahead of the United States in the quality revolution."[10]

The Matsushita approach would underline this belief. Japan's postwar progress moved in a series of steps. Quality circles, for example, were introduced by neither Juran nor Deming, but by Japanese companies building on the earlier work on quality. By the 1960s the groundwork of these two influential experts had been completed. So had that of the CCS under Polkinghorn.

How did Japanese companies leap ahead under the noses of U.S. industrialists? Why didn't American companies move so rapidly? The answer has everything to do with approach. As already noted, the Japanese were starting from virtually a clean sheet. They had been humbled by defeat. Their industries were shattered. Just as British trade unionists were able to create a model for industrial partnership in postwar German industries—but not in their own—the American engineers gathered in the CCS were schooled in companies that had deliberately promoted management innovation. They were given the time and the opportunity to put their ideas into practice. Rarely are individuals given so much freedom in their working lives.

These were young men working at the cutting edge of management thought. They weren't sitting in the boardroom contemplating the realities of corporate and personal competition. They were able to create a blueprint, unrestrained by the individual foibles, bickering, politics and entrenched attitudes residing in day-to-day company management. All of them proved capable of synthesizing the best aspects of contemporary American management and presenting them to the Japanese. They had the time to work out their plans and their ideas were refreshing, described by Bunzaemon Inoue, who became technical director of Sumitomo Electric, as "the light that illuminated everything."[11]

The CCS lectures became famous throughout Japanese manufacturing. Those who attended were sent out like disciples to preach the management message in other sectors.
Their names read, according to *Forbes* magazine, like a *Who's Who* of Japan's electronics Industry; men like Takeo Kato of Mitsubishi Electric and Hanzou Omi of Fujitsu. Akio Morita and Masaru Ibuka, the founders of Sony Corporation, were schooled separately by Sarasohn.[12]
The word fanned out across industry. It meant that Deming and Juran were able to enjoy the advantage of preaching to the converted when they followed on the heels of these CCS pioneers. Sarasohn by that time had returned from what his company would have considered a useful learning experience in Japan. But he did not go back to his old job building radars. He joined Booz Allen as a consultant.[13]

In the United States and Europe, the quality movement was stifled by the concentration among top management on sales. Juran discovered this when he was invited by Rolls-Royce in the U.K. to deliver a training course for its managers during the 1960s. While touring the aero-engine factories he noticed high levels of waste. He told the then-chief executive, Sir Peason Deming, that were he to invest as much energy in reducing waste as he did to the design and build of the engines, he could cut the cost of waste by half within five years. "It was a huge opportunity," said Juran, "but they did nothing. In this company the way for a man to work his way to the top was to increase sales. Reducing costs in the factories was seen as a form of dry drudgery that wouldn't interest most top managers. I was dealing here with a caste system, and the Samurai at the top were the people able to identify sales."[14]

Not everyone in U.S. management had been asleep to the quality movement. Shewhart, Deming and Juran had shared an obsessive concern for waste that had been recognized, for example, at

Western Electric. Henry Ford, too, would have applauded their efforts in another era. Quality, after all, was nothing new—the medieval guilds had introduced hallmarks to certify the quality of their craftsmen's work. But the quality movement, focusing on continuous and systematic improvements throughout the whole organization, had evaded the attention of western management. But in 1980, against a backdrop of falling sales and performance in contrast with the success of its Japanese competitors, U.S. industry was wondering where it had gone wrong.

America's own Samurai cadre was shocked by the answer delivered in an NBC television documentary, "If Japan Can, Why Can't We?" Suddenly America woke up en masse to the Japanese quality revolution. While American companies had been locking horns in a struggle to sell, their Japanese counterparts, concentrating on continuous improvement and value for money, had shed their reputation for cheaply made shoddy goods, winning increasing consumer admiration for dependability and performance. For thousands of U.S. companies the documentary was a revelation of Damascene proportions. And here was the irony—Americans, who had failed to find an enthusiastic response in their own country, had given the Japanese all their ideas. Deming's phone was buzzing continuously the next day.

The quality movement was not stamped on Japan in one easy lesson. It made its way gradually in a series of steps, and these steps, perhaps because of their graduated advances, had been overlooked by western companies. Companies like Matsushita and Toyota had been quality-conscious before the Second World War. Scientific management was also understood and practiced in some Japanese companies before the war. But the spiritual ethic of Bushido guiding the immediate prewar military regime denounced anything scientific and viewed the ideas of scientific management with suspicion.[15] After the war, therefore, Japanese companies were obliged to relearn the scientific management principles that had contributed to their defeat.

Polkinghorn's team laid down the postwar groundwork. Deming and Juran preached it to the most senior people across the Japanese manufacturing sector, outlining their methods of statistical analysis, and big Japanese companies refined and developed the ideas within their own production systems. Toyota, for example, had been looking at the idea of *just-in-time* delivery of parts as a way of reducing inventory and waste, before the outbreak of war, but it did not perfect the idea until Taichii Ohno outlined the principles in the 1960s. Inspired by Henry Ford's concerns to keep his inventory to a minimum, Ohno redesigned the workplace so that workers manufacturing parts could access several operations at once, and parts could be drawn down on to the assembly line as and when they were needed. Ford referred to the supply of parts in transit as the "float."[16] Ohno, attracted to the way supermarket shoppers pulled products from shelves that were quickly replenished, developed the *Kanban* wall at Toyota's Nagoya plants in 1955. The perfection of these systems means that today the Toyota production line is making cars to order. Instead of a line of uniform models, different models are worked on in succession, depending on the sequence in which they were ordered. There may come a time soon when a car assembly line is an open process allowing access and input by the customer, either directly or via an internet video link, affording greater customization as the manufacture is in progress. Assembly line work may change, but the line itself remains the most efficient way of producing motor cars.

The processes of scientific management, including quality systems that would have met with the hearty approval of Frederick Taylor, were arguably better fitted to the Japanese production mentality than they were to that of the West, although their importance worldwide must be accepted. As Will Hutton, head of Britain's Industrial Society, recognized in *The State We're In,*

a polemic on the pitfalls of contemporary capitalism, Japanese companies can be characterized by their reliance on "trust, continuity, reputation and co-operation in economic relationships." In spite of these relationships the companies maintain a healthy competition. The Japanese call it *kyoryoku shi nagara kyosa* —co-operating while competing.[17]

Herein lie the clues to the strength of the postwar Japanese revival. But what lies at the heart of such concepts? Should we believe that Japanese workers are somehow more dedicated and industrious than their western counterparts? Are they imbued with the one-company family spirit that cannot be replicated in the West? Is this the real secret of their success? The answer here is yes and no. The background to the Japanese work ethic is not so very different to that of the West. There are strong parallels between the rise of the work ethic in western nonconformism and the way that different social classes under the Tokugawa Shogunate drew on elements of Confucianism and Buddhism to deal with a strictly imposed social order. The work ethic in Zen Buddhism was used as a kind of coping mechanism after 1600, when the Tokugawa family, based in Edo (modern day Tokyo) seized the power they would hold for more than 250 years. The policies of the earliest Tokugawa rulers were designed to preserve their continuity and prevent the rise of an opposing local ruler among the feudal lords, the daimyo.

The daimyo were forced to alternate their time between their fiefdoms and Edo, where their wives and children were kept. This restriction of family movements was designed to repress rebellious intent. Ieyasu, the first Tokugawa Shogun, threw out Christian missionaries and issued laws preventing Japanese people from leaving their country. Boat construction was limited to vessels no larger than fishing boats. Only one avenue for trade and contact with the West was left open: a Dutch trade mission was maintained in Nagasaki. Social classes were narrowly defined. Even the daimyo were split into three classes, depending on past support for the rulers. Peasants were required to surrender their swords.

Tokugawan rule sought to stifle movement between social classes. It also stifled conflict, neutering the Samurai warrior creed. The more intellectual Samurai explored historical Chinese writings and revived medieval warrior skills such as archery and fencing. Their Bushido code, derived from the teachings of Zen Buddhism, emphasized loyalty, obedience, courtesy, and the importance of learning. The strong moral ethic that emerged melded effortlessly with Confucian principles that stressed a natural order in society. This mixture of Confucian and Buddhist practices was welcomed by the merchant class as a way of accommodating its ambitions in Tokagawan society.[18]

*"*If it was the decree of heaven that they should remain within the merchant class and do their duty without jealous striving to attain another rank, then their lust for life was, after all, divinely sanctioned and was not merely an imposition of Tokagawa,"[19] wrote the MIT economist, Everett Hagen, who explored the similarity between this ethic and western nonconformism in his book, *On The Theory of Social Change*.

Just as western society cannot escape the Puritan spirit, the Japanese workforce retains powerful links with attitudes framed during the same period that western nonconformist sects were overturning the existing social mores of northern Europe in the seventeenth and eighteenth centuries. The big difference between the Japanese work ethic and its western counterpart is the absence of any accompanying Protestant guilt implied by the burden of religious devotion. On the other hand, traditional Japanese loyalty and acceptance of rank has a much stronger historical

underpinning than that expected from the Protestant work ethic.

There has also been the occasional Japanese rebel against the unquestioning acceptance of work. Rarely has the futility and purposeless of an overblown bureaucratic system been outlined so prosaically as it was in Akira Kurosawa's 1952 feature film, *Ikiru*—Japanese for "to live." *Ikiru* tells the story of Kanji Watanabe, a town hall department head who discovers he has terminal bowel cancer. Watanabe has a certificate recording thirty years' loyal service to the authority. But he concedes that in all that time he has been effectively dead, merely rubber-stamping reports and passing them to the next department. The procedure is the same throughout the town hall—problems are passed from one department to another by unenthusiastic officials.

Watanabe wants to experience what life can be like before he dies. He is guided on a drunken tour of immediate postwar Tokyo nightlife that can only offer short-term diversion. He sees one member of his department swap her desk job for the sweat shop conditions of a toy factory producing clockwork rabbits. At least here, she argues, she can imagine the joy the product gives to so many children.

What joy do Watanabe or his colleagues give to anyone? In the final part of the film he returns to his desk, but instead of passing the buck he intervenes personally to help a community secure a park on a prime development site where there are plans to build a nightclub. Even in death, however, his achievements go unacknowledged. The kudos is claimed by others, such as the deputy mayor who, but for Watanabe's pleading and persistence, would not have sanctioned the project. Finally Watanabe's colleagues recognize his work and promise to reform their own approaches. The reality is quite different. Back at their desks they quickly return to the safety of the rubber stamp.

*Ikiru* is a commentary on petty officialdom everywhere. But it also raises questions about the way we live our lives. Is this all there is? Whenever man has questioned the meaning of his existence, the answers have been supplied traditionally through religion. Work adds a physical dimension to the spiritual meaning—the medium of the message. Luther's belief in work as a "calling" had been a strong enough rationale when people devoted themselves to their craft. But industrialization, with its repetitive actions, had, in the words of Studs Terkel, the American social commentator, "perverted the work ethic"[20] in its "planned obsolescence of people."[21] The meaning of work for so many people had been lost in the search for industrial efficiency. One of Terkel's interviewees, Nora Watson, an editor, put the workers' condition like this: "Most of us, like the assembly line worker, have jobs that are too small for our spirit. Jobs are not big enough for people."

The job could be enlarged with a degree of self-management. Peter Drucker made the point at General Motors in the 1940s, but it would be largely ignored for decades. In fact worker participation in production planning was still so rare among western companies in the 1990s that Masaakai Imai, the Japanese management theorist, used the introduction of participative working at Leyland Trucks in the U.K. as a case study in progressive production methods.[22] John Oliver, the head of truck production at the company, described the change in attitudes: "We used to expect our workers to hang their brains on the coat hook when they came into work. We didn't want them to think. That's changed. Today they get involved in planning new lines or improvements to the assembly process."[23]

This inclusiveness in approach to the whole workforce dramatically changed employee-management relations. But it did not occur without some often painful adjustment among managers. It was management, not the production workers, who needed to recognize that the creative potential of a large section of the workforce had been wasted for years.

Why did it take so long for companies to respond to the best ideas of management theorists? The answer lies in the legacy of mistrust and resistance created by assembly line efficiency and the blind faith that would be placed in management throughout the twentieth century. This was the century of management, a hundred years of management dominance in big business. Management's belief in its own superiority had created a seemingly intractable spirit of antagonism among production line workers. Management command and control produced results but it was a wasteful system, wasting most of the human ingenuity residing in the workforce. Tapping this ingenuity would become a lifelong mission for some who became committed to reviving the human spirit at work. In the meantime, only the most thorough examination of the managerial role would create any momentum towards a solution.

[1] Author's interview with Masaharu Matsushita, June, 1999.

[2] Memorandum on the need for management training courses in the communications and manufacturing industry, 6.8.49, research and development division, General Headquarters, Supreme Commander for The Allied Powers Civil Communications Section, declassified document.

[3] Will Hopper interview with Sarasohn, May 22, 1993. A version of this meeting is recalled in Robert Chapman Wood's feature, "A Lesson Learned and a Lesson Forgotten" in *Forbes Magazine*, 6.2.89. The feature, rightly, credits Kenneth Hopper, a British-born management consultant who lives and works in the US, with much of the original research into the CCS. A detailed article by Hopper, covering the work of Sarasohn, Polkinghorn and Protzman, was published in *Human Resources Management*, Summer, 1982. Ken's brother, Will has been assisting him in his researches.

[4] Author's interview with Masaharu Matsushita, June, 1999.

[5] Will Hopper interview with Sarasohn, May 22, 1993. A version of this meeting is recalled in Robert Chapman Wood's feature, "A Lesson Learned and a Lesson Forgotten" in *Forbes Magazine*, 6.2.89. The feature, rightly, credits Kenneth Hopper, a British-born management consultant who lives and works in the US, with much of the original research into the CCS. A detailed article by Hopper, covering the work of Sarasohn, Polkinghorn and Protzman, was published in *Human Resources Management*, Summer, 1982. Ken's brother, Will has been assisting him in his researches.

[6] Text of the lecture supplied by Masaharu Matsushita.

[7] Quoted from the Personnel Policy of Matsushita Electrical.

[8] Ibid.

[9] Typed recollections of Homer Sarasohn supplied to Masaharu Matsushita.

[10] *Financial Times*, December 30, 1993, quoted in *The Handbook of Management Thinking*, edited by Malcolm Warner, 1998, International Thomson Business Press, p 337.

[11] Chapman Wood.

[12] Interviews and correspondence with Ken and Will Hopper.

[13] Ibid.

[14] Interview with the author, 6.5.00

[15] This view about the impact of Japanese militarism is source to the author's interview with Toshio Goto, professor of Shizouka Industrial University in Tokyo in May, 1999. According to Prof Goto the adoption of several US management ideas, including scientific management and standard cost accounting came to their peak in Japan in 1935 when the military set itself against these ideas. "The military people were against anything named "scientific"," he said. But some companies quietly resisted this military opposition. Sumitomo, for example, persisted with standard cost accounting for its cost control, concealing its methods from the attention of the military.

[16] Ford factories did not achieve JIT. In practice the workshops built up over-large inventories.

[17] *The State We're In*, Will Hutton, Vintage, p 269

[18] *On The Theory of Social Change*, E E Hagan, p 341

[19] Ibid. p 341

[20] *Working*, 1972, Pantheon Books, p. xxiii.

[21] Ibid, p xviii.

[22] Gemba Kaizen, *A Commonsense, Low-Cost Approach to Management*, 1997, McGraw-Hill, p 237-247.

[23] Interview with the author, June 1997.