

We THINK

We DO

We LIFT

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DIECI
embraces
KAIZEN

the philosophy of
"Continuous Improvement"



A short history of Kaizen

Kaizen was born from the encounter between the American and the Japanese Cultures, creating a melting pot between two ways of life which may seem distant and irreconcilable but in some respects are surprisingly close. We will briefly review the parallel history of the two nations that have contributed to its birth.

The day of the Black Ships

In the 19th century Japan was still a medieval society, divided into castes and isolated from the outside world. The Tokugawa Shogun (emperor) ruled over a country divided between the warring Daymo (feudal lords), who fought for power through the Samurai warrior caste. Japan had consistently repelled with hostility all attempts by European merchants to establish trading links with it, until a breakthrough in its isolationist policy was finally achieved with the arrival (in July 1853) of American gunships under the command of Commodore Matthew Perry. The fledgling American nation needed markets in which it could exercise its growing economic power, including by force, and pressured the Shogun into signing a treaty that brought Japan's isolation to an end. In the subsequent century both countries were shaken by Civil War. In Japan this was followed by rapid industrialization, the creation of the empire and the birth of Modern Japan. At the same time, however, this created tensions with the United States eventually culminating in the outbreak of the Second World War. On September 2, 1945, the Japanese Government signed its Instrument of Surrender on the deck of the battleship USS Missouri, anchored in Tokyo Bay. Flying on the battleship's mast were two American flags. One was the almost new, 48-star flag that flew over the White House on the day of the attack on Pearl Harbor. The other was a worn and tattered flag featuring only 31 stars. It was the one that flew over Commodore Perry's ship in that very same spot 92 years earlier, on July 8, 1853.

Eiji Toyoda and Kaizen

In 1945 Japan was a devastated country, both physically and in terms of its morale. Although Japan was under American occupation, the United States was committed to its reconstruction from the very outset. America systematically employed its technology and industrial know-how, as well as U.S. technical personnel trained during the New Deal and wartime period, in its effort to secure Japan's industrial reconstruction. It was the American engineer Edward Deming (the creator of the problem-solving method known as the "Deming Cycle" or PDCA, Plan-Do-Study-Act) who introduced a new work model geared towards the improvement of quality and the elimination of non-value added activities. Thanks to the particular Japanese mentality, the system was so successful that it was immediately adopted in Japan, most notably by Eiji Toyoda, Toyota's "shogun", who redesigned the PDCA model in order to make it better suited the company's needs. Having observed that the drive for action moves from the bottom up, Toyoda introduced a system whereby the company and all its employees are deeply involved in product and process improvement, aware that there is always a better way of doing things but confident that a small step will be made in that direction every day. It is a "soft" and gradual method that stands in stark contrast with the Western approach, which focuses on large-scale investments, and "scraps" anything that appears not to be working well before starting over from scratch. Renamed "KAIZEN Eno Yon Dankai" (Improvement in 4 steps), the method was soon applied to the entire Japanese economic system, and was eventually to make its way back to the country that provided the original inspiration for it, the United States, thanks to the leading economist Masaaki Imai. And thus, Kaizen was born.



DIECI embraces 改 KAIZEN 善 the philosophy of "Continuous Improvement"

The Japanese word "Kaizen" is made up of the terms Kai (change) and Zen (better). It might sound like one of the many words with an exotic flavor that are used to describe one of the many fashions of the day, and which are doomed to oblivion once the novelty has worn off. Instead, for over 70 years Kaizen has been a "Business Philosophy" underpinning the economic success not only of Japan but also of the United States, a philosophy that has subsequently been extended from the economic domain to other areas of "management", including in the Health Care, Sports and Quaternary sectors.

THE KAIZEN PROJECT

What does Kaizen consist of today? In a nutshell, it is a daily process of quality improvement and work simplification based on a progressive but ongoing "drive for improvement from the bottom up", insofar as it is all those who work on an assembly line or department, in every sector and at every level, that actually define and put into effect the changes which improve their work. Management, for its part, has the fundamental task of supporting and providing incentives to the Kaizen teams, supplying them with the necessary resources to that end.

Kaizen is based on:

- 1) Detecting and eliminating from the activities we carry out those that are non-value added for the end customer (handling, transportation, hold-ups, defective products, leftover stocks, machine stoppages, and overproduction)
- 2) Working towards continuous improvement at every corporate level
- 3) Rationalization and standardization of production lines (with greater comfort for workers)
- 4) Continuous training of the whole workforce through work placements and expansion of skills
- 5) Training workers to take the right decision autonomously whenever an anomaly occurs or when problem-solving is required (PDCA cycle)
- 6) Engaging the whole workforce as part of a single Team with a single goal

The "culture of improvement", fueled by a proliferation of Kaizen work-sites throughout the company, naturally leads to a change in mindset, develops motivation, instills a sense of belonging, and creates a situation in which individual interests and group interests coincide. According to the principles of Kaizen:

- 1) The process leads to the results
- 2) The system should be analyzed as a whole
- 3) There should be neither blaming nor judging

Even more important is the fact that the practices introduced and results achieved need to be further improved in order to be sustained, otherwise they are destined to deteriorate. Kaizen is very different from the corporate organization system that has been in place until today (the offspring of the ideas of Taylor and Ford), which assumes that to achieve overall optimization people have to be divided into sectors and given specialist training accordingly, in order to find their optimal setting. This culture had led to a corporate structure based on clear divisions between those who decide (and therefore improve) and those who work. This system induces workers to see their department as "detached" from the rest of the company, like a "separate body" behaving independently and disconnectedly from the rest of the factory. With Kaizen, the old "plant", full of busy people, noise and scattered materials, is set to become a memory, a past that we can certainly be proud of, but which is not longer suited to the needs of Man and Industry.

But is it possible to apply Kaizen to a particular industrial organization such as ours? Not only is it possible, but change is already underway: DIECI srl, located in Montecchio Emilia, has put in place its very own "Kaizen Project", one of

the many milestones in the constant drive for innovation that is the underlying philosophy of this Emilia-based company. Dieci's corporate facilities cover an area of over 120,000 square meters, including a modern Test Field, Warehouses, Research Centers, and everything necessary for the operations of this large metalworking and mechanical engineering company that produces Telehandlers, Dumpers, Concrete Mixers, and Special Machinery for Construction and Agriculture, in 9 assembly lines plus 4 finishing departments, as well as 2 metalwork departments, 2 varnishing departments, and 4 pre-assembly departments. The sprawling plants and spatial distribution of the means of production inevitably meant that (under the "traditional" organization of the work) workers and machines were frequently moving about, resulting in disruption, waste and delays. Not to speak of unforeseen events (albeit part and parcel of any manufacturing company) such as machinery breakdowns, defective items and consequent repairs, and the repercussions of the delays along the entire production chain as well as the stress experienced by workers. Thanks to Kaizen, all this is going to change: the "old" production lines and 4 downstream departments are about to be replaced (in line with the rationalization and standardization criteria) by 6 modern "integrated FLOW CHANNELS" that will turn out the finished product, ready for transportation. Every workstation along these Flow Channels will have its own specially assigned workers, and the necessary materials will be supplied to them on dedicated carts. Thus, there will be no more interruptions due to searches for materials and no more clutter in the work areas, two conditions that led to time being wasted and caused inconvenience to the workers. The workplace will be reorganized according to the Kaizen 5 S framework:

- Seiri (Sort), i.e. the elimination of all unnecessary work tools or materials.
- Seiton (Set in order), i.e. a place for everything and everything in its place, also for the benefit of those who will be working in the station during the next shifts.
- Seiso (Clean), i.e. regular maintenance and elimination of sources of dirt after every shift.
- Seiketsu (Standardize), i.e. all workstations performing identical functions have to be identical and interchangeable, so that workers from other flows can find the same working conditions.
- (Sustain), i.e. once "good habits" have been acquired, they need to be sustained and, if possible, improved.

In practice, the group of workers engaged in every Flow will become an actual Team, capable of proposing changes and improvements,



analyzing any problems, and solving them in partnership with the Leaders of the other Flows and the Managers of each of the Company's 5 vital nerve centers: Human Resources, Procurement, Sales, Product Design, and Management. Daily and regularly scheduled Meetings (Daily and Weekly Kaizen) between Workers and Flow Managers will become the norm, so as to boost "bottom-up" communication, analyze problems and rapidly resolve them, gather suggestions, and apply operating solutions with immediate effect.

Any improvements will then be collected and analyzed during the subsequent meeting, in that endless "circle" of slow but continuous improvement that lies at the heart of Kaizen philosophy.

Obviously all this cannot be created out of thin air: Professional Training for staff members at EVERY LEVEL (which has always been a feather in the cap for Dieci) will be increased. The first goal will be to create the kind of "team spirit" that is essential for change, and at the same time provide Technical training for the adoption of the new technologies to be applied to work Flows. There are already some examples in Italy where Kaizen has been introduced, and with positive results, even in much-criticized sectors like the public administration.

One Public Administration organization in northern Italy with over 1,500 employees has adopted this new approach. At first, it was received with a certain amount of defiance, but that initial diffidence was replaced by curiosity during the training courses, a curiosity that then turned into active and enthusiastic staff participation, and eventually, according to the trainer, even secured the engagement "of town councilors!" Of course it will take a little time, but in Kaizen philosophy, time is not an enemy but a precious ally...



DIECI  *News!*
in the World!

DIECI is awarded the "Silver Medal" prize at the TECHAGRO fair in Brno

Another important distinction boosts DIECI's record of achievements. At the **TECHAGRO** Trade Fair, held in Brno (Czech Republic) on April 3 – 7, 2016, the **Agri Farmer 30.7 VS** exhibited by **Agrozet České Budejovice** was awarded the "**SILVER MEDAL SPECIAL MENTION**" at the **GRAND PRIX TECHAGRO** for the **BEST TECHNOLOGICAL INNOVATIONS**.



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