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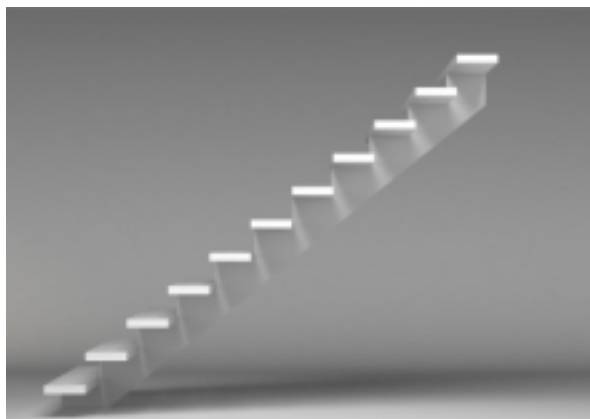


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Lean Kaizen: continuous improvement in the Lean direction



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Lean Kaizen: continuous improvement in the Lean direction

by: Carlo Scodanibbio

lean kaizen: foreword "traditional" kaizen

Kaizen started in the era of **Just in Time** and the **Toyota Production System**; it started - together with other related disciplines (such as *Flow Production, One-Piece Flow, Cell Manufacturing, TPM-Total Productive Maintenance, SMED, etc.*) - in the Manufacturing Industry in Japan (years '70s).

Lean Kaizen, originating in the first years 2000s, is a *Lean* development of "traditional" Kaizen.

"traditional" kaizen the main features

The Japanese word *kaizen* means: *continuous, systematic, step-by-step improvement*.
The key-words are:

- **Continuous**: under the **Kaizen** angle of the view, there is no limit to *improvement* (...*the sky is the limit*...). It can carry on forever and ever, and there will always be more space for extra improvement.
- **Systematic**: Kaizen-style improvement must take place in a rational way - identifying areas needing improvement - prioritising areas needing to be improved - qualifying and quantifying the level of improvement needed - planning improvement actions and initiatives - implementing them in a *systematic* fashion - and measuring the actual improvement achieved, comparing the "*before*" to the "*after*" status.
- **Step-by-step**, meaning: in small, gradual, incremental steps.
Japanese made a clear distinction between **kaizen** and **kayrio**.
Kayrio means "large-size" improvement, generally "costly" (such as in the case of technological revamping) and generally also rather "fast".
Whereas, under the **Kaizen** angle of view, improvement may take time and - mostly - should be "inexpensive" or - at least - "economical" ("*poor-man-approach*": the poor man has no money to throw at things - but he has a "brain", capable of generating ideas and solutions.....).

The most important keyword is *improvement*.

In "traditional" Kaizen, **Improvement** means: increase in **Efficiency** (core parameter of *Productivity*) and/or **Effectiveness** (core parameter of **Quality**) in an "area" under scrutiny.

Improvement can be achieved: A) through *Preventive Actions* or B) *Corrective Actions*.

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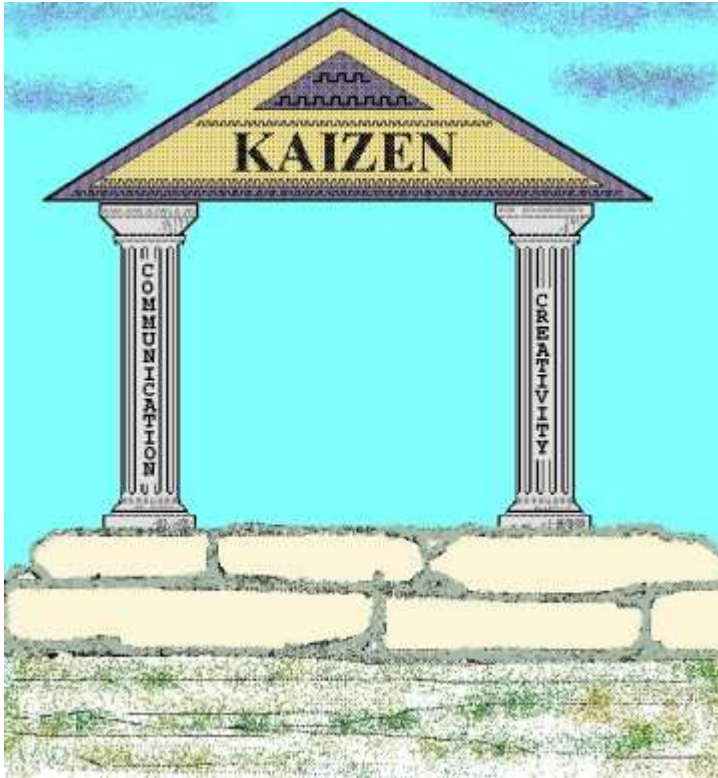
A **Preventive Action** is an initiative addressed to ensure that "something" will not go wrong (for instance, a **Poka-Yoke** device that will prevent a possible malfunction of a machine....).

A **Corrective Action** is an initiative targeting at eliminating some malfunction already experienced and noticed.

MAIN FEATURES OF "TRADITIONAL" KAIZEN

- **Kaizen** is a *systematic* and *methodical* approach to **continuous improvement**
- **Kaizen** is top-driven, co-ordinated and supported, but
- with deep, active involvement of those concerned in each improvement area (**bottom-up approach**)
- **Kaizen** target is **excellence**

THE PIERS OF KAIZEN



Possibly, the most important feature of "traditional" *Kaizen* is the **bottom-up** approach.

The assumption is: "*.....the person doing the job knows far more than anyone else as to the best way of doing that job, and therefore is the one person best fit to improve it...*".

- "*.....if he/she only knew how.....!*" (i.e. Technical Training is required!)

- "*..and if he/she was given the opportunity.....!*" (i.e. people must be empowered to act for improvement initiatives!)

In a **top-driven** mode, the **Kaizen** approach gives people at all levels, in each area needing improvement, the training, the space, the power, and the tools required to produce, working in team, creative ideas and solutions required for such

improvement.

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The rather famous **Gemba** approach summarised the main feature of the **Kaizen** Methodology. With Managers from various Levels and from different Functions going on a daily basis to the Shop Floor (and not only) and meeting (formally and informally) with workers and other personnel: to discuss about the problems surfaced during the day and other ongoing problems - to launch together possible **Kaizen** initiatives addressed to rectify/confine/resolve those problems - to assess results - and to praise those more committed and more effective in tackling problems.

Therefore, the "**piers**" of effective **Kaizen** are: **Communication** and **Creativity**.

Communication is of paramount importance to work efficiently and effectively in team during each **Kaizen** session.

As it is **Creativity**, in order to produce - in team - valid ideas and solutions.

Certainly, **Tools** (see below) are very important. As it is the **Kaizen Method/Approach**, as well as People **commitment** to improvement.

But possibly the most important factor for real improvement is **Brainpower!**
Because of the *poor-man-approach*, ideas and creative solutions are the real "heart" of **Kaizen!**

TOOLS FOR KAIZEN

In "traditional" (and not only) **Kaizen**, people are well trained to use the necessary tools and available disciplines. They include (to mention the most important):

- Tools to collect/organise/classify data, to measure, to assess, such as:

Data Collection Chart, Scatter Diagram, Control Charts, Flow-Charts, Graphs, Histograms, Pareto Diagram, ABC Analysis, Radar (Spider) Charts

- Tools to solve problems, to tackle complexity, to produce creative ideas, such as:

K-T method, Critical Examination & other "global" Problem-Solvers, Brainstorming & other Creative P/S techniques, Cause and Effect (Ishikawa) Diagram, Relations Diagram, Affinity Diagram, CEDAC, Arrow Diagram, Matrix Diagrams, Poka-Yoke, Quality Circles, P-M Analysis, FMEA/FMECA Methods

- Methodologies to approach the decision-making process, such as:

Archer Method, Optimisation Methods, Elimination and Evaluation Charts, Decision Trial-Balance Method, Matrix techniques, Tree (Systematic) Diagram

"TRADITIONAL" KAIZEN - THE BENEFITS

Kaizen brought a large number of benefits to Industry - not only in Japan - where it all started, but also to the Western world (where **Kaizen** was subsequently adopted with some touch-ups, necessary to adapt the methodology to western culture and style.....).

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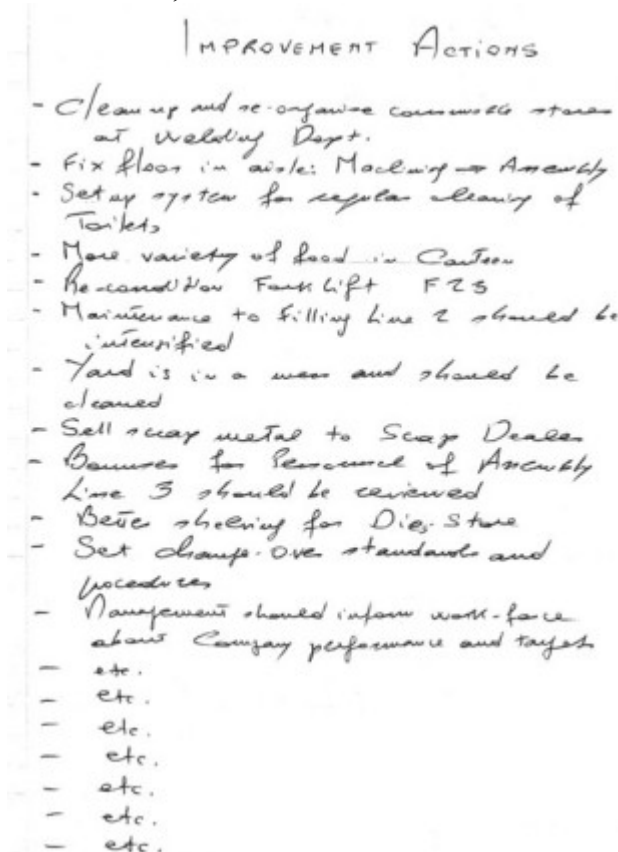
Two major ones, worth to mention:

- Possibly for the first time in industrial history, **Kaizen** introduced a systematic methodology to "query" the status quo (given practically for granted by people too busy to produce, to work, to manage, to do things.... in a routine-style) - and then to change the present situation for the better.
- Possibly for the first time in industrial history, **Kaizen** opened the doors to **Personnel Involvement** (**bottom-up approach**)).

Two major benefits indeed.

lean kaizen the main features

"Traditional" **Kaizen** came to the western world like a lightning: people in industry got fascinated by the concept of "continuous improvement", a bit less - perhaps - by its "bottom-up" approach. Nevertheless, they went for it!



In a "westernized" fashion, they invented the famous *Suggestion Box* scheme (whereby personnel at all levels would be "involved" by inserting written, most often anonymous, suggestions regarding "items" to be improved.....) And they invented *Kaizen Board Meetings* (where middle/high-level managers would meet - even on a weekly frequency - to attend to items to be improved.....) And, obviously, there was an **improvements list**, with all items requiring improvement.... And so on..... Surely, only few industries in the West practised *Kaizen* with its original "spirit" and "methodology".

I recall an old story regarding *Western Kaizen*: In a "Mediterranean" Country, I was conducting training seminars followed by a day's consulting visit to participating companies premises (to give advice related to the seminar's content). The previous year I had presented a well successful seminar on "traditional" *Kaizen*. This time, the same participants of the previous year -

all from a company I had already visited - attended the new training seminar.

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I remember very well the CEO of that Company (attending previous year and this year) telling me:
"....Dr. Carlo, when you will visit us next week, you will be amazed to see how we put into practice the Kaizen messages you gave us last year!"

Very intrigued, I asked (as I always do) if I could carry my Video Camera with me.

"Of course! You are welcome!"

So, company visit's day comes, and I am welcomed at the Company premises, then accompanied to the Board Room.

I was told the *Kaizen* "committee" would now start one of the weekly meetings on *Kaizen* improvements, as per "agenda" of the day. My comments would be welcome.....

The day's item in the "agenda" was "**How to improve and rationalize the distribution of toilet paper and other hygiene products throughout the Company** (large-size Company - huge factory....).

Rather astonished, I kept quiet and started my video recording.....

Perhaps you won't believe me, but - for over 1 solid hour (my 1 hour Video Camera tape ran out....) - the 12 persons in the "committee" debated and debated (in a rather well conducted team work) on "toilet paper" matters (from supply chain issues - to stock management, with great attention to "FIFO" practices - to factory-key-personnel in charge of giving "early warning" signals/notifications on each "area shortages" - etc. etc. etc.)!

I kept very quiet until the end of the meeting, but then grabbed my "stick" (and my 5 lbs hammer....) and started tapping on fingers.....

Over 1 hour of *Kaizen* meeting to deal with toilet paper internal distribution system (sigh), when they had many and much more important improvement items to deal with!!

They explained: "*that was the 'next' item in the Kaizen Agenda.....*".

Me: "*and what about prioritizing?*"

They: "*....we prefer to deal with suggested improvements in the same order in which suggestions have been given, in order to give timely feed-backs to those making suggestions.....*"

Me: "*throw away the Suggestion Box Scheme!*"

They: "*What? That's the way we involve people 'bottom-up', as you recommended.....*"

Me: "*Perhaps I should explain again what 'bottom-up' really means, although I thought my message of last year (and case studies, and videos....) was rather clear..... - so: I shall explain again.....*" - which I did.....

YES, that could be the negative effect of "*traditional Improvement Lists*" and "*Suggestion Box Schemes*".....

Verified regularly over many years, in a dozen different Countries, in many, many industrial/business concerns.....

That's where **Lean Kaizen** comes to the rescue, and that's why **Lean Kaizen** is so much needed!

Lean Kaizen: continuous improvement in the Lean direction

The definition of *Lean Kaizen* is very similar to that of "traditional" Kaizen, but with a small "addendum":

Lean Kaizen means:

continuous, systematic, step-by-step improvement in the Lean direction (in a "bottom-up" style)

The small "addendum" is: in the Lean direction!
Which makes an enormous difference!!

5

Because, taking into consideration the Lean Direction:

- **Improvement** now means: increase in *Efficiency* (core parameter of Productivity) and/or *Effectiveness* (core parameter of Quality) of a **Process!** (not of a vague "area"!)
- Maximising the *Process' output Value*
- While simultaneously minimizing/eliminating the "*in-Process*" **Waste**

Lean is the missing link, and the new key-word is **PROCESS!**

Under the *Lean* angle of view, Processes need to be improved! Processes *fragmented* and almost disappeared after decades of enforcing the *First Industrial Revolution* principles - *Smith/Sloan/Taylor* style.

Processes full of "processing *Waste*" - *Processes* that **MUST** create output *VALUE!*

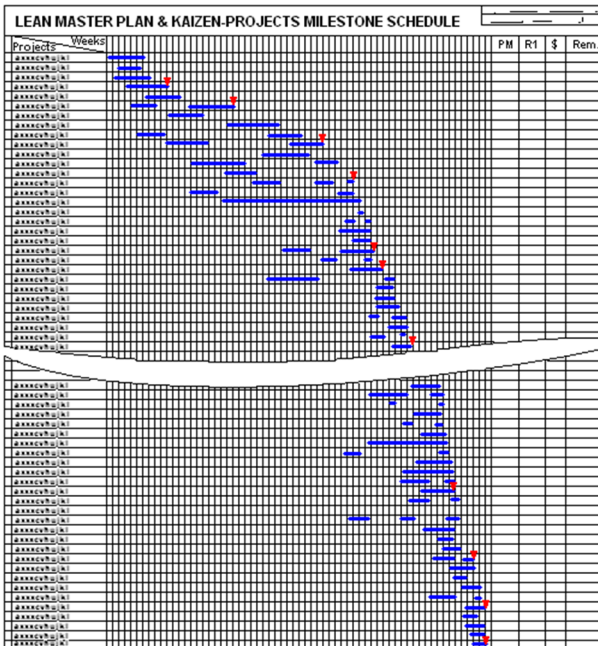
Processes that must become *Lean!*

With *Lean Kaizen* the direction for improvement becomes finally crisp and clear - priorities can be set - challenging improvement targets have meaning and foundations - bottom-up involvement can be easily generated among people with lean minds....

In every Organisation - besides the *Central Process* (the *money generation process*), there are **Core Processes** (those that "touch" the Client) and **Support Processes** (invisible to Clients, but essential to make the entire Organisation function).

Obviously, under the *Lean Kaizen* approach, Improvement must primarily be directed to *Core Processes* - although certain *Support Processes* may also deserve high improvement priority.....

Lean Kaizen: continuous improvement in the Lean direction



Now - and only now - a real **Improvement Plan** can be made! A **Lean Master Plan!**

Everything required is there:

- ALL (at a certain date) **Improvement Projects** are listed: each of them has a clear, meaningful title
- With the necessary **priorities**, with the wanted **sequence** (i.e. you cannot launch a **TPM Autonomous Maintenance** project, unless you first provide the necessary training to the concerned operators....)
- With **time durations** for each project
- With a **time-frame/schedule** and a **deadline** for each project - NB: a **deadline** is vital: without it, an

improvement project can last forever and ever.....

- With "**milestones**"

- Displaying the **Improvement Team** and the **Team Leader** for each project - And attached: an estimated **budget** of costs - potential **savings** (= Waste eliminated) - and whatever necessary **remarks**

Wow, what a beauty!

All what is to be done, when, for how long, in what sequence, led by whom, costing how much, etc. etc. All is there!

This is a true **Lean Kaizen-style Plan**.

What a difference compared to the "**traditional improvement list**" - maybe resulting from a "**suggestion box**" scheme! That meaningless list of items to be improved.....

Lean Kaizen is the most essential ingredient of the **Lean Management/Lean Thinking** philosophies: still today, there isn't a single Organisation in the entire world that can proclaim itself **100% Lean**.

Lean is a permanently moving target, there is no end to a **Lean Program**; every bit and piece of every **process** can be perfected, **Lean** is an endless road.....

Lean Kaizen: continuous improvement in the Lean direction



Carlo Scodanibbio, born in Macerata (Italy) in 1944, holds an Italian doctor degree in Electrical Engineering (Politecnico di Milano - 1970).

He has over 49 years of experience in Plant Engineering, Project Engineering and Project Management, as well as Industrial Engineering and Operations Management.

Free-lance Consultant since 1979, he has worked in a wide spectrum of companies and industries in many countries (Southern Africa - Italy - Cape Verde - Romania - Malta - Cyprus - Lebanon - Mauritius - Malaysia - Nigeria - Kenya - India - Saudi Arabia - Seychelles), and operates as an Independent Professional Consultant and Human Resources Trainer to industry. His area of intervention is:

He has co-operated, inter-alia, with the Cyprus Chamber of Commerce, the Cyprus Productivity Centre, the Malta Federation of Industry, the Mauritius Employers' Federation, the Romanian Paper Industry Association, the United Nations Industrial Development Organisation and the University of Cape Town.

His courses and seminars, conducted in English, Italian and French, have been attended by well over 20.000 Entrepreneurs, Managers, Supervisors and Workers. They feature a very high level of interaction, and are rich in simulations, exercising and real case studies. The approach is invariably "hands-on" and addressed to immediate, practical application.

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