

THE BELLA FABBRICA® TRANSFORMATION MUST BE PART OF THE ESG JOURNEY

It's time for beauty, a great Italian value, to spread in the industry as well. In manufacturing factories this means going beyond the aesthetics and functionality of new machinery and assembly lines, taking care of the details that define how workers and managers collaborate to ensure economic, social, and environmental **sustainability** over time. Therefore, in the horizon of the modern factory, which can only be reformist, the obstacle represented by the paradigm according to which productivity and physical fatigue of workers are always in open opposition must be removed.

SOMETHING HAS CHANGED

Can productivity be increased by reducing fatigue? Definitely YES! Last year a technical report was published by ISO (the International Organization for Standardization) which describes how to combine productivity and ergonomics based on a scientific model (**Ergo-MTM®**) and common data (human motion analysis): the model benefits from a tool with a complicated name, **EAWS®**, which allows the measurement of fatigue or, as experts say, the biomechanical load. The calculation is not abstract but based on the tasks assigned to the operators and the level of performance required by the production rhythms (human performance).

In the factory all this is innovative. And on the assembly lines it is a no brainer, if the proper capabilities are available; it's a win-win game.

By linking traditional time measurement tools with EAWS®, the classic paradigms are overcome: the most strenuous processes are assigned longer times to ensure adequate recovery periods and, consequently, an ergonomic improvement allows the reduction of time and costs. Hence, how it was said, more productivity and less effort.

Possible? The best answer to doubts and poisonous questions comes from companies of the likes of Volkswagen, which has adopted EAWS® in all its factories around the world after a rigorous selection process among the best ergonomic tools, Bosch, Miele or, in Italy, Leonardo, Whirlpool, Marelli and Stellantis (or at least that's how FCA and Magneti Marelli did when the property was still Italian under the umbrella of the Exor group – what is happening in Stellantis and Marelli will be the focus of a next article).

THE ERGONOMIC EVALUATION

At this point it will be useful to reveal what EAWS® means, which stands for Ergonomic Assessment Worksheet, translatable into Tool for Ergonomic Assessment. The added value of this system is simple and disruptive: the fatigue generated by each movement is measured with fussiness engineering, especially the repetitive movements, which in the long run, can damage muscles and tendons. Companies, therefore, are driven both for their own interest and to better protect their employees to design ergonomic workstations, but also products to be assembled in the most fluid and simple way possible.

For this reason, the ISO working group of international experts on ergonomics (ISO/TC 159/SC 3/WG 4 "Human physical strength: manual handling and force limits") has included EAWS® in the publication of the

most recent and important technical reports, effectively recognizing a sort of “blue flag” for products and production processes that meet the standards of safety and excellence defined via EAWS®. In particular, the Technical Report ISO TR 23076 dedicated to "Ergonomics — Recovery model for cyclical industrial work"; further clears EAWS® as a valid method both for designing an ergonomic work method and for mapping the risk of biomechanical overload, as required by the Italian Legislative Decree 9 April 2008, no. 81 (LAW ON HEALTH AND SAFETY AT WORK). This is a very important novelty for occupational physicians and Local Health Authorities for whom EAWS® becomes a recognized biomechanical overload risk assessment system.

A system which, among other things, assures doctors certain and verifiable data on the health risks of workers on which often, today, every doctor regulates himself based on informal and subjective elements, sometimes assuming undue responsibilities or producing responses unrelated to what it really happens on assembly lines.

"The study of ergonomics must integrate with that complex ecosystem that is the modern factory - explains Francesco Saverio Violante, professor of occupational medicine in Bologna - It is important that it uses the same database used by the management of all the other processes (e.g. product/process costing and production planning), adding value with his recommendations".

A NEW FRONTIER OF WORK

Therefore, we are not dealing with a simple technical topic. The formula used by ISO TR 23076 for EAWS® concretely means that thousands of factories, and not only the largest ones, will be able to raise their work organization to the world class level where, as demonstrated by the Volkswagen case, **the adoption of ergonomic tools integrated with own production system is also seen as a way to encourage workers' participation in the improvement of production processes** (the “Good Productivity”).

EAWS®, in fact, provides data (e.g. motion frequency and duration of human motion and intensity in each position/geometry) that can be easily verified by all stakeholders: managers, workers, trade unionists, and occupational doctors; furthermore, EAWS® influencing factors, if combined with planning work analysis data (e.g. MTM®) can provide a detailed digital analysis in the process design phase, avoiding critical situations in the production phase, when any change would cost money and have a limited feasibility. This integrated process provides a new frontier in the balance between corporate productivity and workers' protection. A frontier that can be challenged by all the parties involved, because the verification can be easily performed even on each workstation and movement by movement, producing that rare but strategic asset in the factory, which is transparency, the essential precondition for generating trust, commitment, and alignment on a common goal among all stakeholders.

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