

## **STANDARDS: The only antidote to chaos**

**By Roberto Giardini**

### **Abstract**

*What are standards, and why they are they so important? Why are standards the only known antidote to chaos? What do we really mean by “standards” in business? These are the questions we are going to address in this article.*



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## STANDARDS: WHAT ARE THEY AND WHY ARE THEY EXTREMELY IMPORTANT?

The Google definition of the word “standard” is: *“something used as measure, norm or model in comparative evaluations”*. Due to such a broadly accepted definition, the word “standard” has acquired a negative connotation since it is associated to something that is normalized, impersonal, unimpressive, almost boring. **However, “standards” are seriously underrated. Humans evolved and are still evolving because they can set standards and improve them.** We would be uncivilized without standards. Languages are standards, as they assign common accepted meanings to letters, words and grammar rules, in writings and in sounds. Without standard common language, we can’t communicate and therefore organize. Money is a standard. Our economy wouldn’t function without a common value given to a certain currency at a given time. Religions, Constitutions, Governments, Laws and Justice are all standards. We couldn’t function as society in the absence of common rules to apply to everyone’s behavior. Marriage is a standard. The education system is a standard, traffic rules are standards. Business rules and company policies are standards.

Cooking recipes are standards. Even music and art are founded in standards. Notes, colors, shapes and materials are standards. And of course, math and physical laws are standards as well. Interestingly and unambiguously every time humans fail to set and follow standards, there are negative consequences. In fact, even if our languages and laws are good standards, they are still loose enough to allow miscommunication and misinterpretation. Most of the relational and social problems between humans, from the fights between individuals and families to the wars between nations are caused by loose standards. When a critical mass of people does not follow existing standard norms, laws and rules, social problems are always guaranteed. The misconception that standards are boring is because we are not encouraged to think how standards are fundamental for living meaningful lives. Also, we don’t think that improving existing standards or creating new ones, is the definition of being creative. This is exactly what creative people do all the time. Any meaningful innovation will improve existing standards or create new ones, even when the creators are unaware of it.

## STANDARDS ARE THE ONLY ANTIDOTE TO CHAOS

It is intuitive that standards enable meaningful exchange of information since they assign common shared meaning or value to certain objects or symbols. However, it is less intuitive that **standards are the only known antidote to chaos**. Distortion or loss of Information is the main generator of chaos in nature, especially among humans who are the most developed communicators. This is intuitively obvious to anyone who experiences the social impact of lies

and fake news, but also to anyone who deals with the consequences of wrong information passed (or right information not passed) by genuine mistakes, unchecked bias or political, religious fanaticism. There are three ways in which distortion or loss of information generates chaos, all because information loses the connection with its physical reality. The first type of distortion happens when humans can’t properly measure or interpret observations in the real world. We don’t



observe and measure events correctly in the real world. Either because we don't know how to measure them, or because we are biased, and we want to give the observations an interpretation that fits with a view of the world that is convenient to us. This type of distortion of information is called the **"Perception Gap"**. It is the most common and can be observed everywhere all the time. Humans rarely look at facts objectively. When it happens, it is the definition of a pure authentic scientific approach.

The second type of distortion of information happens when we use the wrong model or theory to interpret the information that we have available from observations of facts. In this case, we have the right information and we don't have bias. The right theory exists to interpret the facts, but we don't use it because we don't know it. This is the case for people who try to explain what happens in the world by using superstition, magic, astrology or other myths instead of science. This is the **"Training Gap"**. This gap can be resolved by providing knowledge of correct theories, especially scientific ones.

The third and last type of distortion of Information happens when there is no available known theory to explain the facts we observe. This is unfortunately what occurs when observing complex systems, like stock markets, or political elections. It is very hard to interpret the reality of complex systems when there is no scientific theory that can describe their behavior mathematically. This is the **"Knowledge Gap"**. When there is no knowledge available to explain the reality.

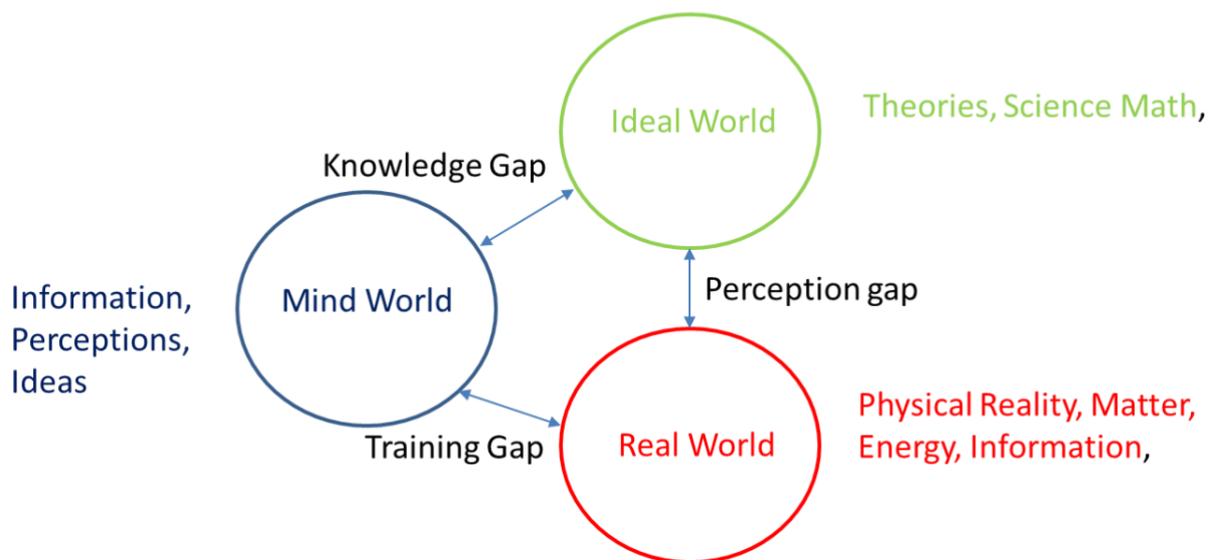
Digitization and Social Media have caused these three types of information distortion to grow exponentially in the last thirty years. They have

created a world of Information - the famous virtual world - that has an existence independent from the physical world. Digitization and Social Media enable biased points of view and self-reinforcement within their inner circles, the use of unfounded theories to interpret the world and the continuous flow of new unfounded theories created every day to explain what happens.

Standards play a key role in minimizing these three types of information distortion, especially when they are based on scientific knowledge. The Perception gap is solved by ensuring that rigorous standard measuring systems are established, and objective standard analysis of data is used to interpret the world. The Training gap is solved by ensuring that people are trained on standards. The Knowledge gap is solved by formulating hypothesis or theories that will be validated only by the observation of facts in accordance with the standards. If the facts don't match with the standards, the theory must be discarded. Note that the concept of standard is the very core of the scientific method: without standards there is no real science, learning or improving. Also note, the only way to turn Digitization and Social Media into engines for good information sharing is to force them to follow solid standards that connect the real and virtual worlds. This is called by the media themselves "fact checking". Unfortunately, there are no solid standards in place on how to "fact check" and frequently the "fact checkers" do not eliminate the distortion of information

**The key message is that distortion or loss of information generates chaos. Standards are the only antidote to chaos as they minimize distortion of information.**

### The Three Worlds Model



### STANDARDS IN BUSINESS

We give the word “standard” a special meaning when we talk about it in business. In general, the concept is the same: standard exists to ensure that we give common meanings to the same words, so we can handle our complex systems. When we use the word standard in manufacturing and in the supply chain, we normally refer to “operational standards”. When we say that an operation unit has “high standards”, we mean that housekeeping is always excellent on the floor and in the offices – it looks good, nice and clean - that all people execute their work right the first time, always in the same way, with no mistakes. This guarantees a strictly repeatable outcome and minimizes losses. So, at floor level the best way to define “high standards” is that the value adding tasks – the ones that produce value for business

– are well documented step by step and that people follow these steps rigorously all the time.

This is true for tasks that require a physical action in the real world, like in manufacturing transforming raw materials into finished products, and for tasks that require only handling information, like designing a new product, engineering a new technology, planning and scheduling production or communicating with suppliers and customers. **We have hundreds of years’ experience in industry to prove that to drive operational excellence we need critical tasks to be standardized, documented and executed with extreme precision.** In the absence of standards not only repeatability of results cannot be guaranteed but there will be no way to learn and improve as explained above. As



per all standards, there could be the misconception that operational standards are boring and rigid, but standards are there to be improved or radically changed all the time by creative people who find better or new ways to perform critical tasks. The process of innovation, learning and improving can be technically defined as the process of improving or totally changing existing standards. **When we use the term “standard” in business we mean in the most**

**general form “a well-documented, step by step sequence of tasks that people must follow to add value to business without generating losses”.**

Leaders who understand this concept and set high standards for their organizations will always have a competitive advantage, as there is no way to grow and sustain a business without having high standards.



STANDARDS must be in place to ensure connection between real and information worlds

