

Augmented Reality as one of the effective solutions to strengthen the link between design and production

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Abstract

The products manufacturing companies aim to increase their production capacity as well as the quality of their products in order to achieve their marketing plans and increase their competitiveness with other companies. In order to achieve this, companies strive to move forward in the processes of facilitating production processes and reduce the cost of production through multiple locations of implementation of product parts and components according to the nature of Each part and raw materials used in its production, as well as the number of labor required to manufacture it and the cost of that labor.

In addition to the tendency of some companies to assign the implementation of some of these components and parts to multiple countries according to what they are distinguished geographically and logistically ... etc., which resulted in the distribution of some industrial institutions to produce components of their products to become in multiple regions around the world.

Although the productive institutions have achieved that desired goal of reducing the cost of production, but they are a front for new problems in the process of communication and exchange of information between multiple production points spread around the world, especially with the multiplicity of languages, cultures, time differences ... etc., and this resulted in wasting more time in Facilitating the communication process and transferring the information necessary to complete the manufacturing and assembly operations in the optimum way and with the required quality, which must be carried out quickly within the life cycle of the product during its production, from design and production planning to manufacturing and assembly.

Perhaps the stage of assembling the components and parts of the product is the most important articulated stage in the production process because of its high accuracy and good communication between both (the design and production stages) and (the production stages of each other). With pictures and diagrams, which imposes on the workers the sequence between reading these instructions and realizing them correctly, then implementing the assembly process in practice, which results in a high probability of distracting and slowing the production process, which results in wasting time and thus reduces the efficiency of the production line.

From the above, the importance of adopting augmented reality emerges as one of the effective solutions in achieving communication and information transfer between parts and components designers and those who manufacture and assemble them and carry out maintenance operations for them.

Keywords:

Augmented Reality, Virtual Reality, Product Development