

PhD Program: Industrial Engineering- Mechanical

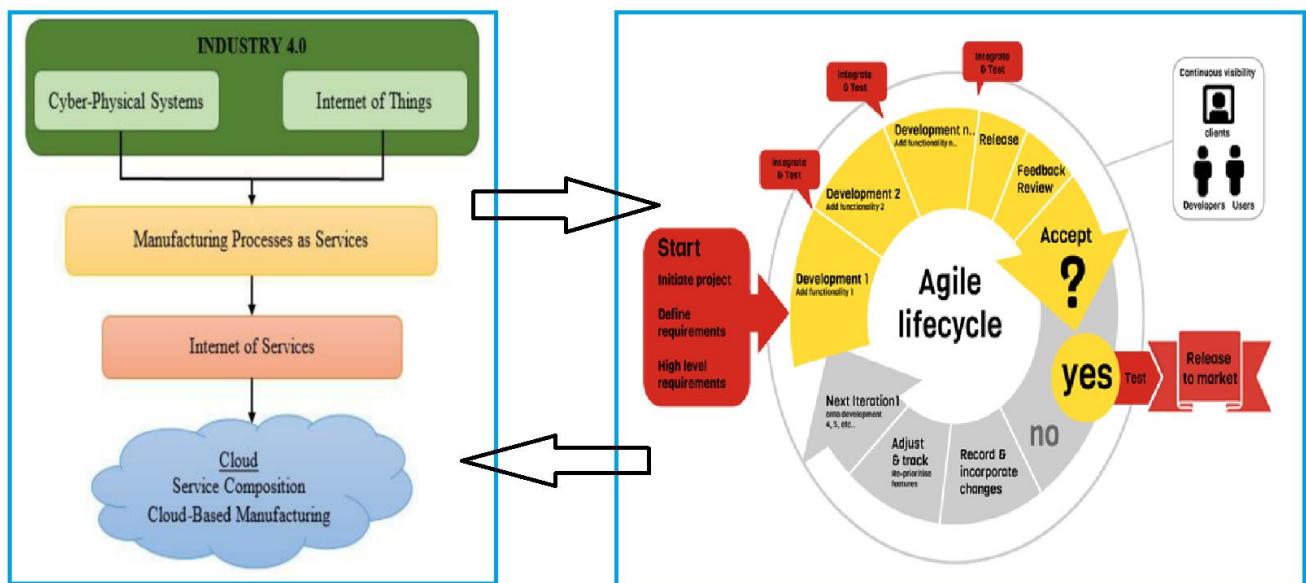
Concurrent Integration of Industry 4.0 in Agile Manufacturing System

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Introduction: Satisfying customer requirements is one of the most important goals for the companies in the competitive economic environment, agile manufacturing system mainly aims to achieve this goal. This system requires using modern technologies to be highly responded to quick changing in the market, so the role of Industry 4.0 will obviously appear to close many gaps in the manufacturing system.

Research Idea and Methodology: The elements of Industry 4.0 such as Cyber- Physical System (CPS), Internet of Things (IoT), Cloud Computing, and Cognitive computing have high manufacturing affects to achieve interconnection, information transparency, decentralization decision, and technical assistances, that will foster the smart factories to perform its missions and tasks with high efficiency and quality, on other hand, applying agile manufacturing philosophy that is aiming directly to satisfy customer requirement, so integrative these two Systems is an opportunity to obtain a new knowledge and it is considered an attempt to accomplish manufacturing and customer goals.



Integrative Industry 4.0 and Agile Manufacturing System

Research Objectives: The proposed study aims to achieve the following research objectives:-

1. To obtain the effects of Industry 4.0 on agile manufacturing systems in Italian firm,
2. To apply Industry 4.0 design principles on agile manufacturing system (AM), and
3. To know what is the Industry 4.0 element that is mostly affected on Agile Manufacturing (AM) system.

The Expected Results:

- 1- Quickest manufacturing response to deliver orders,
- 2- Increase manufacturing company profits for long term plan,
- 3- Better product quality and manufacturing performance to response for changing orders, and
- 4- Achieve high communication among management, manufacturing departments, and customers.