         Increasing automation and increasing demand for innovative and customized products has cast a spotlight on the disadvantages of product-line division of tasks common in mid-20thcentury factory workforce.

o   Production-line division of tasks created a workforce that was *discouraged* from thinking about how their work fit into the production process as a whole. The holistic view was concentrated in the hands of the engineers who designed new products and interactions were defined from the top-down.

o   This prevents an organization from foreseeing how an innovation of one part will actually have ripple effects on many other apparently separate production tasks.

o   This greatly hinders an organization’s ability to respond agilely to changing market conditions.

  This fact was realized quite early at Toyota, and led to the invention of the Toyota Production System, the forerunner of Lean Software Development.

o   This is particularly important in the world of software development where production is always production of a novel product

o   The various aspects of Agile / Lean / DevOps production follow from the nature of knowledge workers cooperating to create innovative products.

  Thus, the concepts of *continuous integration*, *software as infrastructure, continual interaction, incremental development*, *continuous deployment*, and *continuous monitoring*were born.

        To successfully respond to changing business requirements is for the people working in each specialization to have a vision of the overall system, an understanding of how other specialized areas function, and to have robust communication channels open between the various specialties: in other words, to break down the silo walls produced by a rigid division of labor, and embrace agile development principles.

        To this end, agile organizations need more “generalizing specialists,” who, while having a specialized skill, possessing a keen understanding of both their business domain and the overall technical environment. Narrowly focused specialists were needed in great numbers in the rigid division of labor that characterized the traditional assembly line; far fewer are needed in agile organizations.