*MEMORANDUM: Additive Manufacturing Product Development at GE*

1. Develop and design their products via more effective prototyping
    a. Customer: Department of Defense
    b. Product: FATE Engine
    c. In 2017, GE Aviation and the US Army "completed prototype testing of the Future Affordable Turbine Engine," which used additive manufacturing throughout the design and production phases. [16]
2. Produce products with more complexity and fewer parts
    a. Customer: Airbus
    b. Product: Fuel Nozzles for LEAP Engine
    c. Summary: Since 2016, Airbus has submitted 12,000 orders for the "LEAP Engine" which uses GE Additive Manufacturing Fuel Nozzles that reduce "the number of parts in a jet engine fuel nozzle from 20 to one, leading to a 25 percent weight reduction and reduced assembly times." These fuel nozzles are critical components in the jet engine fueling Airbus' new A320 passenger jet. [17]
3. Repair broken parts and produce spare parts
    a. Customer: Aerospace Market
    b. Product: Avio Aero Additive Repair Techniques
    c. Summary: Since 2010, GE Aviation's Avio Aero project has worked to develop "additive repair techniques" that scan a broken part, determine what repair needs to occur, and then use Cold Spray or Laser Deposition to layer on metallic powders to fix the broken part. [18]

*Note: Prepared by case writer.*