

Operations Methods: Activity 5.2B



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5.2 OPERATIONS METHODS: ACTIVITY B

Read the case study information below and answer the questions that follow.

IN SEARCH OF QUALITY IN QUANTITY



The spread of mass customisation techniques across industries is starting to spell an end to the old production line. **Mass/flow production**, based on standardised parts and processes, was introduced by Henry Ford early in the twentieth century. It greatly cuts the costs of making each unit, but the main drawback was that all goods coming off a single production line were identical. In mass customisation the flow

production line can be varied without stopping production (unlike **batch production**) to make different products. It in fact has the benefits of both flow and batch production.

Caterpillar, the US supplier of construction and power equipment, says that virtually all of its 11,000 engines it makes each year are different. The variation comes from changes to 10-20% of the 1,000 parts that go into each product. Software for the engine controls can also be

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varied. Cessna makes a wide range of general aviation aircraft from the single-engine piston to business jets on several different production lines. Of the 17 different models produced last year, Cessna produced and delivered over 1,200 planes to customers. By producing a variety of models, Cessna is able to market its products to a much wider range of customers, meeting their individual requirements and adding higher value to the components used. Being able to customise products within the flow production process needs:

- Advanced and flexible capital equipment; e.g., car paint robots can now paint vehicles in 'one off' colours in between lines of standard colours
- Skilled and well-trained workers able to operate this machinery and adapt it to make different products
- Product designs that contain as many standardised parts as possible in different versions
- Reliable suppliers able to make slight variations in standard parts of components.

The consultancy Strategic Horizons says the ability to customise products in mass production processes has increased greatly in the last few years. "Sometime this century mass customisation will be the main form of manufacturing."

QUESTIONS: 18 MARKS, 30 MINUTES

1. Distinguish between traditional **mass/flow** production and **batch production**. [6 marks]
2. Examine the benefits of mass/flow production to:
 - a. A computer manufacturer
 - b. A dress-making business

[12 marks]