

IMPROVING PRODUCTIVITY BY SIMULATE FACILITY LAYOUT: A CASE STUDY IN A CAR COMPONENT MANUFACTURER

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ABSTRACT

Facility layout is an important component of a manufacturer's operations especially in terms of maximizing the effectiveness of the production process. The key of good facility layout is the integration of the needs of people, materials and machinery in such a way that it does create a single well-functioning system. An effective layout can help an organization achieve a strategy that supports differentiation, low cost or response while wrong layout planning will lead to lack of space in key areas, poor placement of key activities, excessive material handling, and increased operating costs. In this case study, ARENA software has been used to simulate the production time requires in completing the assembly process. Several options from re-layout activities have been tested in order to find the best outcomes that can optimize the output since the existing layout creates lots of wastes. The result shows the productivity increase from 68.2% to 81.5% and production efficiency also rises by 20%. Simulators are able to provide the