Integrated Manufacturing System Design for Food Production Facilities in Palestine

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Abstract:

The purpose of this study was to develop a framework for designing an Integrated Manufacturing System which can live and interact through research environment special conditions. A successful manufacturing system designs must be capable of satisfying the strategic objectives of a company. The current manufacturing systems especially those systems used in foodstuff enterprises within this research environment, Palestine, suffer from many problems and difficulties.

Both qualitative and quantitative research methodology was utilized in this study. The qualitative research data consisted of three in-depth interviews with research sample companies' managers. The quantitative research data was gathered with the aid of a online survey. Fifty two surveys were sent to foodstuff enterprises in Palestine and thirty six responses were received. The response rate was sixty nine percent.

The results of the interviews and survey revealed a high level of weaknesses in planning process prior to the establishment of Palestine foodstuff production enterprises. There is also a mismatching between markets need, production capacity, and process technology in the current enterprises. Sixty two of the responses said that they do not have any strategic objectives. More than forty per cent of the responses utilized less than fifty per cent of their production lines.

In order to treat these weaknesses the researcher introduces a framework for designing an Integrated Manufacturing System (IMS) for foodstuff enterprises in Palestine. The framework develops a tool to help manufacturing system designers (1) clearly understand the different components and levels of the manufacturing system design, (2) link low-level activities and decisions to high-level goals and requirements, (3) understand the interrelationships and the integration among the different elements of a system design. Such manufacturing system enables a firm to simultaneously achieve cost, quality, flexibility, and delivery responsiveness to the customer objectives. The application section illustrates how the Integrated Manufacturing System Design (IMSD) can be applied through concurrent activities between its different functions and level

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