

A Real Case Study Describing a Methodology for Selection of Computing Production Scheduling Approach in a Factory with Combined Production Schemes of Flexible Job Shop Within Semi-Independent Production Lines in Low Systemized and Digitalized Environment

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Abstract: Despite the production scheduling problem has been broadly analyzed; most of the body of knowledge remains highly theoretical and, when it comes to field applications it gets nurtured from production structures, organizational cultures and practices disconnected from Latin American factories. The described disconnection becomes more obvious when the production scheduling problem belongs to a factory with low degree of process systematization and data digitalization which is the case of most of the facilities of the mentioned region.

Additionally, the current available commercial and theoretical tools fail to consider the production scheduling process as a part of whole company management macro-process, and, by not doing that, they ignore essential information like, for example, the behavioral pattern of the human component and the noise generated by unadjusted sales forecasting methods. If production scheduling continues being considered just as an applied mathematical and computing problem, it will continue deriving in unachieved user's expectations and numerical results far from optimal.

In those systems like the described in this paper, the optimization techniques available in the state of the art publications, had been proved as inadequate. This paper aims to communicate a methodology and approach which had shown much better performance in low systemized, low digitalized and highly complex production systems.

Keywords: Optimization, operations, scheduling, factories, industry, Latin America