

PRODUCT LIFECYCLE FORECASTING USING SYSTEM'S INDICATORS

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Abstract

The concept of product lifecycle is one of the tools of strategic management and gives a company the guidelines for marketing their product. It is very important that companies know in which lifecycle stage their product is. When conceiving a product platform, companies rely on the researches of socio-economic parameters. These parameters are called influence parameters, because by changing through time they influence the sales of the product and consequently the lifecycle curve, and require the company to change its business model, business strategy or their product. The changes of influence parameters reflect the changes of consumer needs, which is why in most cases the product needs to be adapted to the new parameters. In order for companies to know in which lifecycle stage the product is or will be, they often use forecasting methods. In this process, all the socio-economic parameters are projected that were valid in that specific period. The purpose of the article is to develop a model that takes into account the changing of influence parameters and gives reliable medium-term forecasts of the sales of a given product (attached is an example of a built-in oven lifecycle).

(Received in April 2016, accepted in November 2016. This paper was with the authors 2 months for 1 revision.)

Key Words: Product Lifecycle, Simulation, Forecasting, Mathematical Modelling, System's Indicators

1. INTRODUCTION

A product lifecycle can be defined as demand for the product or the scope of sales in time. The time of presence of the product on the market depends largely on the factors that impact the sales of the product. A product's lifecycle is graphically represented by an "S" curve that is determined by influence parameters. The latter are different on different markets and change through time, just like the trends change. In the stage of introducing a product on the market, the costs are the highest, as companies need to invest in market research, product conception and development, new production technologies, marketing and the development of a sales network. Product conception is the first stage in the development process and is of key significance, having a major impact on whether or not the product will achieve the set objectives [1]. Therefore, the conception of a platform for a multi-generation product (MGP) requires clear starting points that are called influence parameters. They change throughout the lifecycle of the product, so the product needs to be modified through time. In developing a new generation of a MGP we use starting points, i.e. new influence parameters valid at that moment. This way the new product placed on the market is contemporary and fits the current global trends. Companies that prepare and introduce a new generation of MGP early enough have competitive advantage. That is why they need reliable forecasts of sales fluctuation for a certain product platform. Companies use diffusion simulation models based on data on the sales of the past generation of products sold on the market. The models project the sales patterns of the previous generation to the sales of the future generation. If we want to simulate