

NUMMI and Uddevalla Debate

The debate organized by your review between Paul Adler/Robert Cole and Christian Berggren has for me the merit of drawing attention on Uddevalla's factory and its original industrial principles, an holistic and reflexive work, material kit preparation and automatized logistic and administration, that could be forgotten after it closes down.

However, the discussion, as it has begun, could last long without leading to any useful conclusion if it confines to the comparison of the number of employee hours per car. Even though, we had comparable data at our disposal, whatever the results would be, they wouldn't prove anything. The ratio used has two main disadvantages. First of all, it varies too much according to the market conjuncture of each carmaker during the year of the enquiry. Moreover, the ratio is not directly in relation with the global performance of the company. The relevance of a system can only be appreciated according to the structural problems it resolves and creates in a each particular economical and social environment. It can also be appreciated according to the control of the technical evolution that it allows.

Such an analysis¹ shows that the toyotist innovations in organization allowed to reduce the loss of time, the defects, the delays and wastes inherent in the additive production on mobile line in a variable and diversified market. But this system does not remove the first causes of these wastes, in other words, the principles of additivity and production on line, that it have in common with fordist system. T. Ohno has forgotten a sixth "Why"! Uddevalla's modernity exactly lies in its capacity to understand that the present economic, technical and social limits of the toyotist production rest in these principles. Uddevalla is replacing them by holistic and cognitive principles. Therefore, one can demonstrate in an analytical way that the fixed and reflexive production of a product requires less time, investments, delays and indirect costs. It also allows a better quality, flexibility, communication and participation of the workers. This production style leads to a different strategy of automatization, that consists in automatizing above all the simple and not value-added things (handling and administrative tasks). And furthermore, it allows to design an anthropocentred and performant automatization.

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¹Michel Freyssenet, "Uddevalla, analyseur du toyotisme et du fordisme" *Actes du GERPISA*, Paris, n°9, Février 1994.