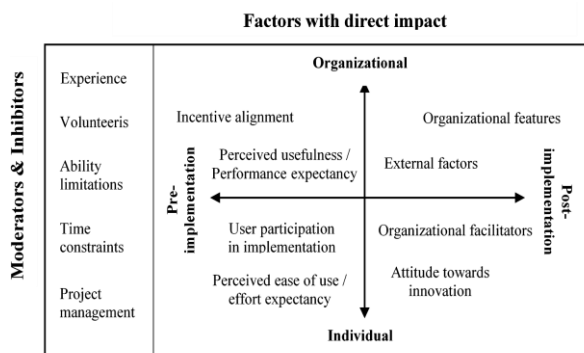


How to Increase Acceptance of Simulation in a DES Project?

Simulation is a useful tool for manufacturing companies to analyze the current system and make decisions without implementing new resources. However, in order to use simulation, the tool has to be adopted and accepted first. There are many factors and activities that can affect the acceptance of simulation, but it is just as important to keep track of the aspects that affect these factors and activities.

Companies are daily facing challenges to become more efficient and to gain markets shares. One alternative to solve these challenges is to use discrete event simulation (DES) as a strategic and tactical decision-making tool. Using the tool will result in; more cost effective analyses, less resources spent on implementation in reality and a better understanding of why things happen in the system. However, there still remains some hesitance to use it even if simulation has many advantages.

The theory within acceptance of simulation includes a lot of factors necessary to keep in mind when performing a DES project. Except from these factors, strategic decisions could affect acceptance. These factors and decisions have been summarized below in the frame of reference.



Factors with direct impact on acceptance could be seen in the right section of the figure. In this section, four main dimensions have been used to structure these factors; the pre-implementation, the post-implementation, the organizational, and the individual dimension. These dimensions describe whether the factor is important before or after the implementation process has begun, and if it occurs on an organizational or individual level. The factors are then placed along how and when they affect the DES project and the acceptance.

Factors with indirect impact are also included in the figure. These are represented in the left section, and are referred to as inhibitors or moderators. Instead of directly affecting the decision process, they will impact factors that in turn affect the acceptance of simulation. If these factors are understood correctly, they will become moderators. Otherwise they will become inhibitors.

There are a lot of activities related to the factors that could be performed in order to affect the acceptance of simulation. These activities should be carried out in various steps during a DES project, hopefully leading to increased acceptance. Apart from this, three more general conclusions can be drawn;

- Acceptance of simulation is dependent on several factors and therefore it requires a great understanding and involvement to achieve good acceptance of simulation.
- Factors with indirect impact on acceptance, known as moderators and inhibitors, are very important to consider to obtain acceptance.
- The relationship between acceptance of simulation and certain activities can be seen as a catch 22. In order to perform an activity to increase the acceptance, some initial acceptance is required to get funds to carry out the activity.

To read more about the recommendations and guidelines stated to increase acceptance of simulation in a DES project, see the full master thesis *Acceptance of Simulation; Insights and Guidelines from a DES Project*, E. Trulsson & E. Varga. The paper is published by the Department of Design Sciences, Faculty of Engineering at Lund University (LTH) in 2016.