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Influence of motivation factors on tasks duration estimation process – is Goldratt always correct?

One of the major factors in successful Project Management is to achieve the project delivery date. In the concept of Critical Chain, Dr. M. Goldratt assimilated the time buffers method to ensure the project due date can be achieved on time (Leach, 2000:118). Buffers represent the inflation or exaggeration of the tasks duration estimation, and are identified and derived from the tasks themselves and are allocated at the end of the schedule paths in order to protect the delivery date. According to the Goldratt, one of the mechanisms supporting inflation is that “the time estimates are based on a pessimistic experience” (Goldratt, 1997: 50). This pessimistic experience could be of course part of the hidden motivation system. For instance, could it be that someone by overestimating would like to secure himself against the effects of missing the deadline and being punished/ “motivated” by her/his supervisor? Likewise, could it be caused by the subsequent task duration reduction - so called “global cut”? The problem with looking for the answer to those questions is that, in terms of the Goldratt concept, “papers that seek to study the good and the bad together - exactly what we need! -are rare.” (Trietsch, 2005: 28).

To shed some light on the above mentioned research topic it was necessary to make a decision on the research method. For this project management case an ethnographic approach was not undertaken because it would need to be embedded in the work environment of the researched companies and societies. In an ethnographic approach “people are studied for a long period of time in their own natural environment.” (Robson, 2002: 186). In general, so called mini-ethnographies are criticized (Robson, 2002: 187).

Nevertheless sponsored and contractually regulated research was based in two companies, each represented by a team of eight people; consisting of team members, project managers and a department director. One company was representing the international automotive industry and will be called here for reasons of anonymity ‘Company T’. The other was representing a telecommunications business and will be called in this essay for the same reason ‘Company P’.

Practical and ethical problems encountered

In both companies during accomplishment of the survey and subsequent interviewing process departments directors were present. The level of anonymity was defined on the cover page of the survey, in which full anonymity and voluntary participation was provided.

In the case of the interviews, the anonymity of the focus group was unfortunately not achieved because directors were present during the discussion. The focus group discussion took place in the conference rooms with a whole group of people at once. Individuals' anonymity could be discussed in case of such an organised interviewing process (Robson, 2002: 285). The author of this small-scale research suggested that it would be best if at least during the interviews, discussions could be maintained with the team members individually. Unfortunately, in both companies sponsors did not accept this proposition and so it could be considered as a breach of anonymity. We could assume that open and free conversation about pessimism and inflation or destabilisation of the tasks duration estimations could imply a certain threat to the team members. They of course would expose their estimation practises to the department directors. The situation could be discussed ethically because team members were to "be faced with situation that cause stress or anxiety" (Robson, 2002: 65).

Another practical issue would be that the directors' presence could also cause a lack of openness during the interviewing process. This introduces another ethical concern; because some interesting qualitative data has been gathered outside the unstructured interview, during off-the-record discussions done out of the conference rooms. Should it be used in the business report since it could not be proved where exactly it was taken from?

To be self critical - the author of this research has recognised that some participants did develop a hope for change during the discussions about the hidden motivation system. The target of the research was not to create a change but to find a link between the hidden motivation system and the tasks duration estimation practises. Even though the target was well communicated, it somehow evolved. During the unstructured interviewing process comments that the motivation system in fact does not exist, is not controlled or is unclear, were very common. The author unfortunately followed that pattern, tempted by a situation that intensified involvement of the group in the discussion. Participants thought that the moderator was moving towards change.

Results

As already discussed the sequence of the research has been applied in the less popular (Robson, 2002: 87) manner, at first the fixed design followed by the flexible design. The fixed design was organised as non-experimental, done by survey (Robson, 2002: 232). It was managed individually with the group from Company P and afterwards with Company T. Quantitative data collected from sixteen persons was analysed statistically. Analysis was done from many perspectives to find any correlation between variables. Unfortunately the quantitative data did not prove any fixed correlation between the factors (i.e. pessimistic experience) of the earlier discussed hidden motivation system and the inflation of the tasks duration estimation. It would also be very problematic to talk about causality. So is Goldratt

not totally correct or maybe his assumptions are too simplified, or maybe the whole result is conditioned by some other unknown contextual variables?

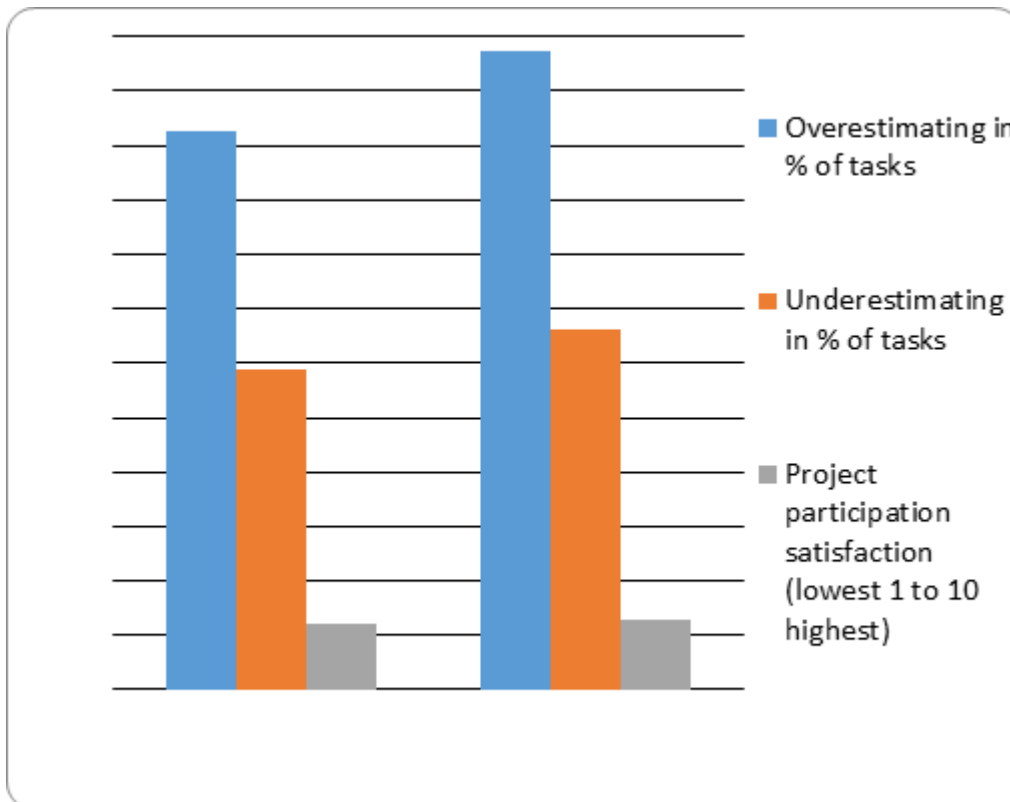


Table 1 Quantitative data correlation; together - Company T and Company P

In Table 1 there is no evident correlation between task duration overestimating and the hidden motivation system understood here as being under threat of potential penalties for missing the project deadline. Regardless of the Goldratt assumptions and very surprisingly - employees also very often tend to underestimate! So not only inflation and willingness to secure designate the problem.

Main research output

In the next step, flexible design technique has been chosen to qualitatively verify the quantitative results with the two heterogeneous (Robson, 2002: 286) focus groups. Unstructured interview was used to identify “what they think, feel and/or believe” (Robson, 2002: 224) in terms of the research subject.

The results were almost overwhelming. In qualitative interviews, it was shown that a lack of control over the hidden motivation system is something what causes destabilization of the estimating process and in fact most often leads not only to overestimation and inflation, but also very often to underestimation. Therefore qualitative analysis has confirmed quantitative survey outputs. The higher the number of over or underestimated tasks the more unstable schedules tend to be. The current finding is that without control of the motivation system the number of faulty duration estimations tends to increase. This should be observed as an

increasing ratio of inflated or deflated tasks. We should not say however that motivation system does not exist. It would be rather more reasonable to consider that it may create itself without our control.

The author of this research would like to ask a question - should the stability, exchange the Goldratt's overestimation paradigm?

It seems that so often presented during project management training or mentoring programs, explanations to Goldratt's critical chain and buffers management are maybe too simplistic or sometimes, sorry for being controversial, or even too naive ... Other interesting and awaiting closer analysis issues are contextual aspects of estimating process as well as how to recognise and schedule underestimations? These topics will be discussed later in the next articles. For instance should we call an underestimation a negative buffer? How to treat this practically? Nevertheless we should start to ask the questions to avoid the risk that "the world will have become a habit." (Gaarder, 2007: 18).