In condition •1•, if $(s_{A^*}(SAP \cup \{a\}), -c(SAP \cup \{a\})) \ntriangleleft \mathcal{D}$ we store $SAP \cup \{a\}$ in $\mathcal{D}$ and we remove all dominated elements from $\mathcal{D}$.

All the solutions given in $\mathcal{D}$ are α-admissible action plans. We can still decide if we prefer action plans with the highest admissibility degree whatever their costs or the ones with the lowest cost as soon as they are α-admissible.

6. Discussion

This paper is devoted to propose a tradeoff between the managerial and implementation aspects of industrial improvements. The MAUT model discussed in sections 3 enables synthesizing manager preferences with respect to the partial performances to be improved first. Manager preferences are indeed recorded in an analytical form that facilitates the search for strategic improvements in terms of optimization problems, and this therefore provides a powerful artifact for recording overall company performance and deriving a rationale from a managerial perspective. In our opinion, the MAUT model is incompatible with operational constraints, thus requiring it to be complemented with other models that take into account the operational context. More specifically, a model of relationships between the objectives and potential improvement action plans is needed to successfully complete the implementation component of the improvement. It is explained herein how both models must be used in an iterative procedure to design an efficient improvement of a system. Many choices have been made at different stages of the decision making procedure. These local choices clearly impact the computation of the best action plan. The choice of the min operator in equations 3 and 5 is the most influential because the branch & bound heuristics depend on it. All these choices require further semantic analyses to propose a more robust model. This is the concern of our futur works.

In conclusion, the way in which these models are conjointly used within our entire design procedure is intended to prove that both models must be used in tandem in order to address the managerial and implementation issues involved in an improvement project. The challenge consists of developing the consensual transition from motivation to action, between managerial decisions and operational capabilities. This challenge constituted the source of our proposal.

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