

representation is used here as well based on general time theory which is consistent. Abstract process model proposed here is mapped to a real world instance of a particular abstract process as a set of real occurrences with real time-stamps using graphical representation. With this mapping, if the deduced temporal constraints represented by the abstract temporal model hold, then we say that the real world process is an instance of the abstract business process. Time structure does not allow loop behavior and to overcome this problem we have used a loop graphical construct. Additionally, we have used reachability analysis to show that the BPTG has the ability to provide a new process instance whenever it has been invoked without conflicting it with the temporal structure.

We have also provided a comparison of our formal system with the prevailing BPM tools and found that our framework is general and expressive than others. This comparison also shows that the formal system can serve as a standard for the BPM. The formal system introduced here is based on a general temporal theory that treats time point and time interval on equal footing.

It is also noted that the BPTG is akin to many BPM tools, and techniques such as flow-chart, activity, Gantt and Pert charts, UML AD and BPMN. The BPTG allows for the expression of both absolute and relative temporal relationship between the time elements, and includes both logical conjunction and disjunction to indicate alternative branching pathways. It can serve as a standard for the BPM, with a clear syntax and semantics of the formal system.

8. References

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