

Schedule Analysis, The case for Edge Activities

By Farid Saddik

For a variety of reasons, it is often the case that only a subset of the schedule activities is analyzed. Sometimes a specific operation is under scrutiny, other times a specific subcontractor's tasks are examined, or a fragment of a specific collection of activities is analyzed. Additionally, schedules with several thousand activities, or even several tens of thousands of activities are becoming increasingly common. Such jumbo or mega schedules are inherently difficult, if not impossible, to analyze at a meaningful level of detail without breaking them down first.

Analyzing a subset layer of activities introduces a new set of assumptions and challenges. To name only a couple of such assumptions and consequent challenges, the dates of the first activities of the various subset paths are assumed to be accurate and fixed. Exclusion of activities which are not a part of the subset but are in the middle of a path may cause an artificial path discontinuity.

The concept of Edge Activities is to introduce a necessary companion subset of activities that are connected as predecessors, successors, or both to one or more of the primary selected subset of activities being examined. An Edge Activity, as such, is defined as an activity which is not part of, but is directly connected to one or more of, the activities in the selected subset.

An analysis of a subset of activities can never be complete or accurate without first understanding, analyzing, and evaluating all of its Edge Activities. What activities hand off dates and how, what dates are the subset activities handing off to the rest of the schedule and how, how accurate and reliable are such dates and relationship types, and how reflective are such relationships of the planned or actual sequences are all critical factors in establishing the validity of the subset analysis.

While the reason behind an Edge Activity actual date might be outside the scope of a specific subset analysis, the accuracy of the hand-off date, for instance, may be a determining factor of the validity of the entire analysis. Similarly, how an edge activity is connected to an activity in the subset may affect dates within the subset activities.

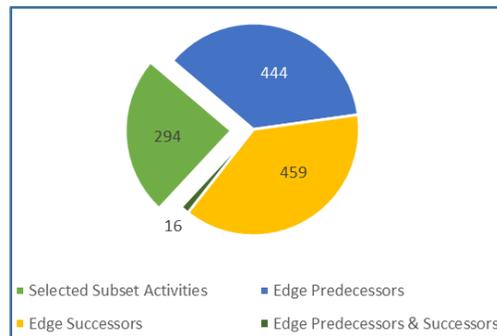
Activity Detail

Project: Big Rock Hospital, Report Date: 9/7/2015
Source Schedule: August2015-UPD

Name	Type	Planned Start Date	Planned Finish Date	Planned Duration	Planned Duration (CD) Calc'd	Actual Start Date	Actual Finish Date	Actual Duration	Actual Duration (CD) Calc'd	Progress Flag	Status Flag	Constraint Violation	# of PRE	# of SUCC	Dangling Flag	Progress beyond Data Cut-off	Edge Predecessor	Edge Successor
OSHPD Building Permit Procurement	Task Dependent	2015/06/19	2015/07/10	20	29			0	29	Not Started: Duration Percent Complete at 0% and Activity did not start			1	3			Yes	
CO 8878 - OSHPD Approval	Task Dependent	2014/11/01	2014/11/01	1	1			0	1	Not Started: Duration Percent Complete at 0% and Activity did not start			1	2	Dangling Start		Yes	
Pre-Pour Inspection/ Pour Slab-On-Deck (Area C - B1)	Task Dependent	2015/06/08	2015/06/12	5	7			0	7	Not Started: Duration Percent Complete at 0% and Activity did not start			2	4			Yes	

Beyond Cut-off	Edge Predecessor	Edge Successor
	Yes	
	Yes	
	Yes	

Identifying Edge Activities and their types is a laborious process. All predecessors and successors of the subset being examined must be listed and then categorized as activities with the subset, Edge Predecessors, Edge Successors, or Both.



Once identified, the companion Edge Activities subset must undergo the same vetting and validation process as their primary subset, while remaining separate from it.

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