MPUG Scheduling Series

Resource Constrained Scheduling – Session Two
March 21, 2014

Larry Christofaro, MCITP, PMP

President: EPM Solution Partners

- Obsessed with MS Project for over 15 years
- Implementing Project Server since 2004
- Certified PMP
- Microsoft Certified MCITP
- President MPUG TC
- Alpha review team for Project 2010 and Project/Server 2013 certification
- Technology Specialist for Microsoft's US P–Seller Program

2

Series Goals

To create, plan, execute, and monitor a resource constrained project schedule. This scheduling series is designed to provide a hands–on, interactive experience to improve the learning experience and develop the skills and techniques necessary to continue properly manage future project schedules.

- **Session One**: Schedule tasks and assign planning resources
- **Session Two**: Finish the plan, baseline, update progress
- **Session Three**: Update progress continued, project changes, reporting, close project, program projects, Project Server, your topics

3

Introduction

- Session uses Microsoft Project 2013 as a stand alone client.
- Considerations for Project Server will be discussed but not demonstrated.
- I'll be using Project 2013 and recommend at least Project 2010 for similar UI and file format, but all features are available in Project 2007 (almost)
- I'm teaching to Project Managers who know how to use Microsoft Project (understands tasks predecessors, constraints, resource assignments, utilization, etc.).

4

Caveat

- Note that Microsoft Project is a very personal tool and even the experts have their way of doing things. Many of the practices presented here are my way, but are never intended to be the only way.
- I will explain why I do things the way I do. You are encouraged to disagree and ask why. I only request that you don't keep quiet and pre–judge any solution as wrong.

5

PMI Defined Scheduling Techniques

- Time-oriented Scheduling
  - Critical path management
  - Used in construction
- **Resource–oriented Scheduling**
  - Resource Capacity Management
  - Information Technology, R+D

6

Scheduling Process

1. Project setup
2. Build the schedule
3. Activity sequencing
4. Enter planning resources
5. Assign and level resources

— Session One

6. **Finish the plan**
7. **Approve and baseline the project**
8. **Track project progress**
9. **Reporting, Close the project**
10. **Programs, Project Server, your topics**

— **Session Two**

EPM Solution Partners

7

Session One Review

➢ Project setup
  o Project options
➢ Build the schedule
  o Copied the schedule from Excel
➢ Activity sequencing
  o Setting predecessors and priorities
➢ Enter planning resources
  o Strategy for setting max units
➢ Assign and level resources
  o Assignment units

EPM Solution Partners

8

Time for Questions

STOP

Questions on introduction and review:
➢ Session two scope
➢ Review from first phase

Next up – Optimize the project schedule

EPM Solution Partners

9

Demonstration
Level and Plan Project

» **Step 6: Finish the plan**
   Finish the schedule
   Step 6: Finish the plan
         Named resources
   Step 7: Approve and baseline project

EPM Solution Partners

10

Your Turn: Optimize the Project

➢ Level all resources
➢ Crash the Project
  o Level to three developers
  o Increase Technical Design Document (ID-6) to 75%

STOP

➢ Tweak the project
  o Reduce Development support (ID-11) to 15%
  o Lag the Analytics tasks (task 33) out 20 days

Next up – Named resources and finalize the plan

EPM Solution Partners

11

Demonstration
Named resources, finalize the plan

» Step 6: Finish the plan
            Finish the schedule
   Step 6: Finish the plan
            Named resources, finalize
   Step 7: Approve and baseline project

EPM Solution Partners

12

Your Turn: Named Resources/Finalize

- Replace named resources for:
  - Infrastructure – Ingred
  - Analytics – Alan
  - Business – Betty
  - QA – Queen
- Replace Developer resources
  - Per assignment sheet
- Setup Project Management Tasks
  - Recurring tasks

Next up – Approve and baseline the project

13

EPM Solution Partners

Demonstration
Approve and Baseline Project

Step 6: Optimize the project schedule
Level and plan project
Step 6: Optimize the project schedule
Named resources, finalize
Step 7: Approve and baseline project

14

EPM Solution Partners

Your Turn: Setting baseline

- Set baseline (Baseline and Baseline1)

Next up – Track project progress

15

EPM Solution Partners

Tracking Resource Constrained Projects

- Two ways to track Resource Constrained projects
  1. Using % Work Complete
  2. Actual time-phased work
- When to use % Work Complete (easiest option)
  - You don't have an easy option to gather actual work
  - Reporting actual effort/cost is not a requirement
- When to use actual time-phased work (more robust option)
  - Access to resource actual hours must be available
  - Ability to report against budget scope, schedule, effort

NOTE: Actual Start and Remaining Duration is used for Time-oriented project

16

EPM Solution Partners

Concepts for Tracking % Complete

	Task Name	Duration	% Complete	Week 1	Week 2
1	Task1	4 d	80%		
2	Task2	6 d	40%		
3	Task3	3 d	100%		
4	Task4	5 d	0%		
5	Task5	5 d	0%		

Status Date

- Question: How are we doing after the first week?
- Correctly tracking your project requires that:
  - All actual hours are in the past
  - All Remaining Work is in the future

17

EPM Solution Partners

Concepts for Tracking % Complete

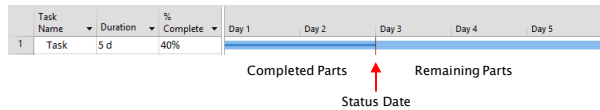|	Task Name	Duration	% Complete	Day 1	Day 2	Day 3	Day 4	Day 5
1	Task	5 d	40%					

Completed Parts   Remaining Parts

Status Date

- Status Date overrides Current Date when aligning actual work
- Status Date can be set to date that status is provided
  - Status reports or timesheets are written as of end of week
  - Status should be tracked to Status Date, not Current Date

18

EPM Solution Partners

3

Concepts for Tracking % Complete

	Task Name ▼	Duration ▼	% Complete ▼	Day 1	Day 2	Day 3	Day 4	Day 5
1	Task	5 d	40%					

Completed Parts   Remaining Parts

Status Date

➢ Move end of completed parts after status date back to status date
  ○ And move start of remaining parts back to status date
➢ Move start of remaining parts before status date forward to status date
  ○ And move end of completed parts forward to status date

EPM Solution Partners

19

Demonstration
Tracking % Complete

» **Step 8: Track project progress**
         Using % Complete
     Step 8: Track project progress
              Actual time-phased work
     Step 8: Track project progress
              Project changes

EPM Solution Partners

20

Your Turn: Tracking % Complete

➢ Set calculation options
➢ Set status date
➢ Update tasks using Gantt Chart and % Complete
➢ Move remaining work
➢ Re-level project schedule

Next up – Track Project Progress
              Actual time-phased work

EPM Solution Partners

21

Demonstration
Tracking Actual time-phased work

»   Step 8: Track project progress
              Using % Complete
     Step 8: Track project progress
              Actual time-phased work
     Step 8: Track project progress
              Project changes

EPM Solution Partners

22

Your Turn: Tracking Actual Work

➢ Set status date
➢ Enter time for each resource
➢ Move remaining work
➢ Set leveling date range and re-level project

Next up – Project Changes

EPM Solution Partners

23

Demonstration
Tracking Actual time-phased work

»   Step 8: Track project progress
              Using % Complete
     Step 8: Track project progress
              Actual time-phased work
     Step 8: Track project progress
              Project changes

EPM Solution Partners

24

Your Turn: Project Changes

- Remove Dora as a resource starting immediately
- Add the following change request
  - o Task: Pre-invoice Review form
  - o Estimate: 60 hours
  - o Assign and level resources

Next up – Reporting and Closing a project

25

EPM
Solution Partners

Demonstration
Reporting and Closing the Project

» **Step 9: Reporting and Close the project**
Step 10: Tracking across a program
Step 10: Leveling and Project Server

26

EPM
Solution Partners

Closing a Project

- Enter all project time
- All remaining work set to zero
- All milestones set to 100%
- Incorporate with all other closing activities

27

EPM
Solution Partners

Demonstration
Reporting and Closing the Project

» Step 9: Reporting and Close the project
Step 10: Tracking across a program
Step 10: Leveling and Project Server

28

EPM
Solution Partners

Prioritizing Program Projects

- Prioritize projects
  - o Use Project Priority
  - o Will schedule highest priority project, then second, etc.
- Prioritize across projects
  - o All projects use the same project priority
  - o Manage one set of task priorities across all projects
- Open all projects with a shared resource pool

Phase	Role	Project 1	Project 2	Project 3	Project 4
Requirements/Design	BA	900	800	600	400
Develop	Dev	800	600	400	300
Test/deploy	BA	700	500	300	200

Magic: What happens when the sponsor wants a change

EPM
Solution Partners

Project Server Considerations

- On launch, unselect Load Summary Resource Assignments
  - o Project will level across all open schedules
  - o Works for leveling across a program
- Resources are from the enterprise. Changes to Max Units will not persist from one session to the next.
  - o Will need to reset Max Units before leveling your schedule
- Time entry replaces updating manually.
- Moving incomplete parts must be done manually
  - o Tasks are updated before MS Project is opened
- It is impractical to attempt to level across the enterprise!?

EPM
Solution Partners

Microsoft Leveling Best Practices

- KISS (Keep It Simple without Swearing)
- Assign fewer resources on each task
- Fully utilize resources on all tasks (at least until you get close)
- Remember to manage the effort (cost) that you put into your project to the value (benefit) you are getting out of it (% Complete vs. Actual Time, task size, etc.)
- Combine small tasks into work packages
- Use Microsoft Project to manage tasks across teams/roles
- Manage only to the level you are tracking (4 hr tasks but tracking weekly)
- Start with a small project

31

EPM
Solution Partners

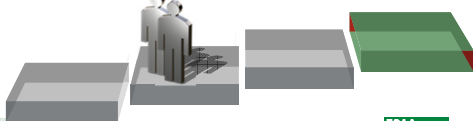## Time-oriented Schedule Series Option

- Managing the schedule by critical path
- Addition of project costs
- Tracking time
  - % Complete
  - Actual Time and Remaining Duration
- Develop and manage a plan for building a house
- Looking to see if there is interest
  - Note in the evaluations if you might be interested

32

EPM
Solution Partners

Next Steps

- Can you tell me how I can get to Carnegie Hall?
- Start with a small, non-mission critical project
- Offer: Contact me if you have questions or get in trouble
  - I'll always answer emails
- Tell me what you thought of this series
  - What worked for you, what didn't, would you like to see time oriented

33

EPM
Solution Partners

Questions /Contact Information

Larry Christofaro, PMP, MCITP
President, EPM Solution Partners

lchristofaro@epmsolutionpartners.com
www.epmsolutionpartners.com

Microsoft Partner

34

EPM
Solution Partners