Implementation of NetPoint in Collaboration with the Ontario Ministry of Transportation

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Eric Sylvestre works for Facca Inc. where his primary goal is using NetPoint as a tool to improve overall company efficiency. By combining his hands on experience gained from working on job sites as a Project Manager with a good understanding of planning, Eric has been integrating NetPoint into the company's network as not only a planning tool, but also to aid in estimating and delay review.
Don Gardonio is an owner and President of Facca Incorporated and has more than 30 years of experience in the construction industry. He has been a member of Ontario Road Builders Association (ORBA) structure committee for 30 years. Don first began his career working in the field, and after several years, he began managing tenders and contracts. That field experience gave him insight on how to estimate the costs and scheduling for future projects and he has been doing so for the past 30 years.
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The Search for a Better “Planning” Tool
How CPM began in Ontario

1. Ministry wanted a tool to provide a benchmark for how the contractor originally planned the job vs what actually happened.

2. It was added to the GC’s and required by the Contractor to submit

3. They adopted CPM and specified it to be the scheduling method used by contractors performing their work.

4. They provided Activity on Node Diagram at the time of tender which showed how they assumed the sequence of work would take place.
Who Dominated?

The Search for a Better “Planning” Tool
Since it was required, why not try and use it for planning?

• We tried using schedules for planning and would review them with PM’s and Supervisors.
• Once management saw limited buy in from the field level staff, it was used only as a deliverable to meet the requirements of the contract.
• We tried to re-create schedules on several contracts, but it never worked well to present a delay.

No value added by creating the schedule.
PM’s each had their own methods for planning the work. Some would write down day by day plans (i.e. text schedules), some would create flow charts.

Flow charts offered a visual approach and made it easy for several parties to do a quick review.
The Search for a Better “Planning” Tool

Read an article in ENR talking about NetPoint and it piqued my interest as it presented information in a clear manner.

Several years later in 2014 NetPoint published information about their conference.

After additional research decided to trial the software
The Search for a Better “Planning” Tool

NetPoint offered key advantages

Multi-Use Software for all phases of scheduling

Visualization

Resource Management

User Friendly Interface

Forensic Scheduling
The Search for a Better “Planning” Tool

Summary

- Decided to start using the software internally
- Started submitting schedules in this format to our clients
- Worked with NetPoint on new features geared towards our industry
Questions from the Ontario Ministry of Transportation
Questions from the MTO

Our primary client: Ontario MINISTRY OF TRANSPORTATION

General Conditions set out requirements for schedule submissions

✓ No proprietary software is specified
✓ Suretrak or Project were the dominant commercially available tools
## Preliminary Contractor Schedule Checklist

Your schedule has been reviewed and has found to be deficient in the following areas:

<table>
<thead>
<tr>
<th>Meets Criteria</th>
<th>Schedule Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>The construction schedule consists of the network diagram on bar charts.</td>
</tr>
<tr>
<td>YES</td>
<td>The schedule shows all work within time frame of contract i.e.: working days, completion date, or calendar days.</td>
</tr>
<tr>
<td>YES</td>
<td>The schedule reflects operational constraints, interim completion dates, and other scheduling requirements specified in contract.</td>
</tr>
<tr>
<td>YES</td>
<td>Each activity includes a description of operation and number of days allocated to it.</td>
</tr>
<tr>
<td>YES</td>
<td>The network diagram shows sequences and relationships of all activities - incl. time for review of Working Drawings, mix design submissions, etc.</td>
</tr>
<tr>
<td>YES</td>
<td>Schedule shows relationship (logic) connections on activity bars.</td>
</tr>
<tr>
<td>YES</td>
<td>The schedule displays approximate tender quantities for major items.</td>
</tr>
<tr>
<td>YES</td>
<td>Critical activities are identifiable.</td>
</tr>
<tr>
<td>YES</td>
<td>Schedule shows early &amp; late start and finish dates.</td>
</tr>
<tr>
<td>YES</td>
<td>Is float time shown?</td>
</tr>
</tbody>
</table>
Issue #1: Use of Approved Software

“Please ensure that a revised copy of the Critical Path schedule is submitted using an approved format/software...”

Contract Requirements:

• GC 7.01.07.03a) The Contractor may select to submit construction schedules in either logic diagram format with accompanying time scaled bar charts or time scaled linear diagrams.
Questions from the MTO

Issue #2: Cannot Identify Critical Activities

“Critical Activities are not identifiable.”

Contract Requirements:
- Critical Path Method shall be used to prepare and update the construction schedule
Questions from the MTO

Solution

We created a legend to aid the Ministry in understanding how to read a NetPoint Schedule

**LEGEND**

- **Submit**: Task
- **Fab Delivery**: Task
- **Critical Task**: Task (Yellow)
- **Completed Task**: Task

**DEFINITIONS**

- **DRIFT**: Number of days to early start
- **FLOAT**: Number of days to late finish

**CRITICAL PATH**: Path of controlling/critical activities to a planned completion date using logic connections between activities, activities with the least amount of float, and therefore controlling the project completion date.
Issue #3: Submission of Electronic Copies

“The submitted schedule is a PDF copy of NetPoint 4.2.2. Unless Facca Inc. provides the Ministry with the required software to properly open the schedule, this is unacceptable”

Contract Requirements:

• GC 7.01.07.01 a) states “an electronic copy in the format of the scheduling software and readable by the scheduling software shall be submitted”
Facca submitted a schedule in **np4 format** to the Ministry and clarified that the **General Conditions do not require** the Contractor to supply the scheduling software to the Owner.
Questions from the MTO

**Summary**

- Without schedule acceptance, contract startups were delayed

- Common understanding that NetPoint meets requirements of General Conditions
How we are using **NetPoint**
How we are using NetPoint

The Basics: Job Specific Schedules for Submission

- Used to create schedules for awarded contracts
- Submittals listed on original submission
- Requirements of the GC’s are met
- Serves as the working schedule for the duration of the work
How we are using NetPoint
How we are using NetPoint

The Master:  
*One Master Schedule for Company Wide Planning*

- ✓ All jobs on one schedule
- ✓ Used by upper management / estimating
- ✓ Review resource availability if new jobs are awarded
- ✓ Locate gaps that can be filled by small contracts to increase revenue
How we are using NetPoint
How we are using NetPoint

Department Schedules

- Individual schedules for different departments within the company
- Breaks down what is shown on a job specific schedule to a higher level of detail
  - Fabrication
  - Engineering
  - Precast
- Allows Fabrication and Engineering to work together in delivering their requirements without over complicating site schedule or burdening site PM.
How we are using NetPoint
How we are using NetPoint

Forensic: Claim Review

Jobs where claims arise

- Re-creation
- Analysis
- Submission to MTO upper level claims departments
- Negotiations
How we are using NetPoint
How we are using NetPoint

15% Production Loss needs to be added due to 7 day workweek

115 days * 0.15
= 17 days

Need to add 17 days to schedule to account for decrease in worker output.
How we are using NetPoint
Creating a New Normal
Creating a New Normal

- Estimate
- Plan
- Update
- Review
Creating a New Normal

Estimating

Skeleton Schedules created during tendering process

- Establish Milestones
- Assess Feasibility
- Highlight High Risk items, timeframes
- Review resource availability against master schedule
- Double check labour costs on schedule vs. traditional estimating
Planning

Plan prior to putting a shovel in the ground

Internal Pre-Construction Meeting

- PM, Supervisor, Foreman
- Different viewpoints find different issues/solutions
- Subcontractors selected
- Submissions identified
Creating a New Normal

Updating

Updating on by-weekly basis

- Use PM’s daily schedules to update
- Video Conference Call to refine the update
- Submission prior to site progress meeting
- Identify possible delays
Creating a New Normal

Review

After work is complete, review the final schedule

- Where did we go wrong/right?
- Why did we slip/accelerate?
- Who under/over performed?
- When did we notice better/worse production?
- How was our estimate vs actual schedule?
In the end what do we have?

- Master Library of Schedules
- No two jobs the same, but are two jobs alike?
- With a Master Library can we continuously refine our initial schedules to represent actual performance?
- The more iterations the greater the accuracy & precision
Conclusions
Where We Stand

Reduced schedule acceptance difficulties with our clients

Currently applying NetPoint to suit our needs, on a per job basis

Would like to establish common practices to increase company wide efficiency in project delivery
Thank You!

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