Dynamic Scheduling

Integrating baseline scheduling, schedule risk analysis and project control

But … what is project control?

"If everything seems under control, you're not going fast enough" (Mario Andretti)

Dynamic Scheduling

Dynamic Scheduling is a Project Management methodology to plan, monitor and control projects in progress in order to deliver them on time and within budget to your client. Its main focus lies in the integration of three crucial aspects, as follows:

- Baseline Scheduling: Plan your project activities to create a project timetable with time and budget restrictions
- Risk Analysis: Analyze the risk of your schedule and its impact on your time and budget
- Project Control: Measure and analyze your project performance data and take actions to bring your project on track

In this "**What is project control?**" brochure, the various inputs and outputs of baseline scheduling are highlighted. The two other aspects are summarized in the "**What is baseline scheduling?**" and "**What is schedule risk analysis?**" folders.

What is project control?

Project control is the act of monitoring deviations from the expected project progress and controlling its performance in order to facilitate the decision making process in case corrective actions are needed to bring projects back on track. Both traditional Earned Value Management (EVM) and the novel Earned Schedule (ES) methods are used.

Inputs

Activity progress. A periodic estimate of the physical progress of each activity, possibly by use of activity micro deliverables

Key metrics. The physical progress estimates result in a comparison of the three key metrics, known as Actual Costs, Planned Value and Earned Value

Outputs

Performance metrics. A project performance analysis using performance metrics such as the SPI and SPI(t) for time, CPI for cost and the p-factor for the baseline schedule adherence

Forecasts. Predictions about the final project duration (EAC(t)) and cost (EAC) given the current performance today

Accuracy. An evaluation of the accuracy of the forecasts to validate the quality of the project control indicators

Why

Efficient and effective project control is key to the success of a project since it provides **early warnings** to timely detect project **problems** or to exploit project **opportunities**, and it facilitates decisions for corrective actions to bring projects back on the expected performance.

How

Project control can be easily done on a computer using the traditional **earned value management calculators** or its novel extensions to **earned schedule** and **schedule adherence** analyses of the stand-alone tool ProTrack (www.protrack.be). For more integrated tools, where the PM approach must be integrated in current or newly developed business systems, OR-AS relies on the P2 Engine (www.p2engine.com) tools.

OR-AS: Operations Research - Applications and Solutions

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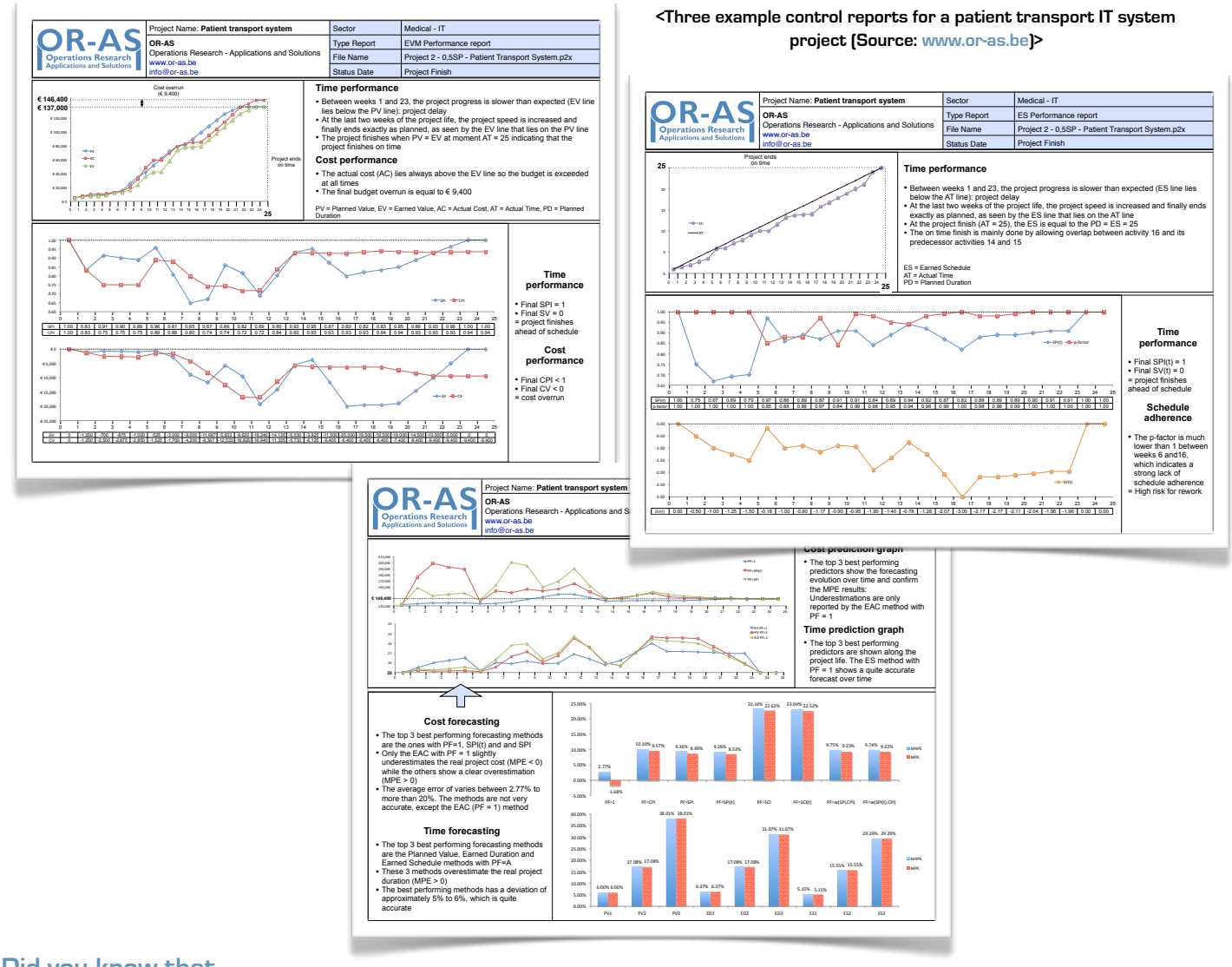
Control Report

Reports

Project control is the heart of project management and should be integrated with the baseline scheduling and schedule risk analysis phases. In doing so, all the relevant information can be periodically captured in three project control reports, as follows:

- EVM performance report: Periodic time and cost schedule variances and performance indicators
- ES performance report: Time indicators using a novel technique to measure the time performance of projects in progress
- Forecasting report: Forecasts about future expected time and cost project performance given the current EVM and ES performance reports



<Three example control reports for a patient transport IT system project (Source: www.or-as.be)>

Did you know that...

... the Earned Schedule performance indicators (SV(t) and SPI(t)) outperform the Earned Value performance indicators (SV and SPI) to predict the final duration of a project (Journal of the Operational Research Society, 2007, 58, 1361–1374).

... top-down and bottom-up project control are two alternative control methods that can be used to increase the quality and effectiveness of performance indicators ("Measuring Time - Improving Project Performance using Earned Value Management", Springer, 2010).