Measuring Time

An earned value simulation study

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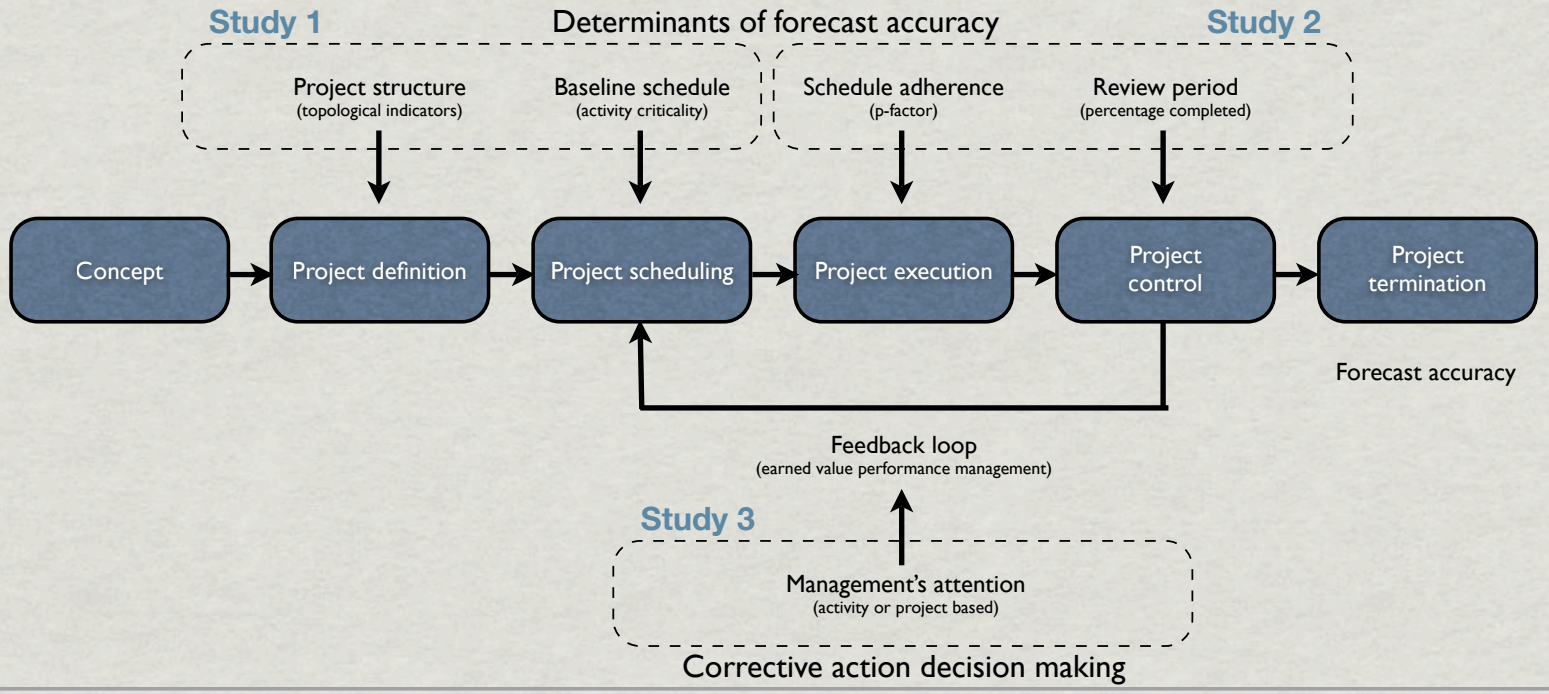
Research scope

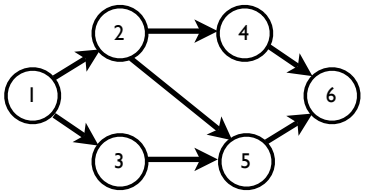
- Drivers of **forecast accuracy** during project tracking
- Improve **corrective actions**
- Using Earned Value Management (EVM) and Schedule Risk Analysis (SRA)
- General conclusion instead of case-specific examples



Methodology

Project data

Project network



Project schedule

Project execution

Critical activities

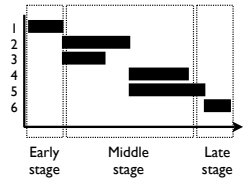
Early | On time | Late

Non-critical activities

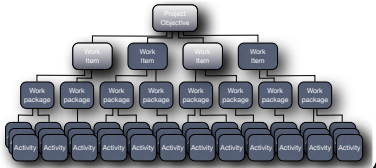
Early | On time | Late

Project progress

Performance measurement
(stage of completion)

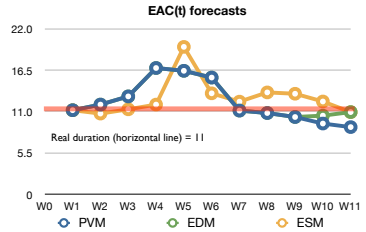


Performance measurement
(WBS level)



Project output

Forecast accuracy



Influence of project network
Influence of completion stage
Influence of WBS level
Influence of activity criticality

> 4,000 projects

9 simulation scenarios

Measure Performance (SPI and SPI(t)) and predict

Measure Accuracy of Forecasts

Forecast accuracy

Drivers of forecast accuracy

- Project structure and activity criticality are the main static drivers
- Periodic tracking interval and schedule adherence are the main dynamic drivers

- Earned Value Management works for more serial projects (well-structured)
- Schedule Risk Analysis works for more parallel projects (more chaotic)

Accuracy = actions?

WBS levels

Project

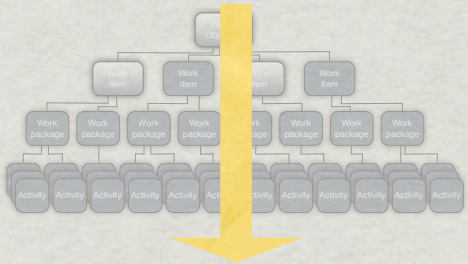
Work item

Work package

Activities

EVM: top-down

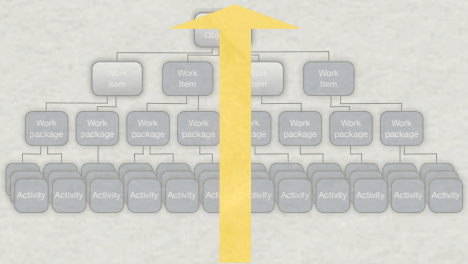
Project performance problem!



Which activities are critical and responsible for the problem?

SRA: bottom-up

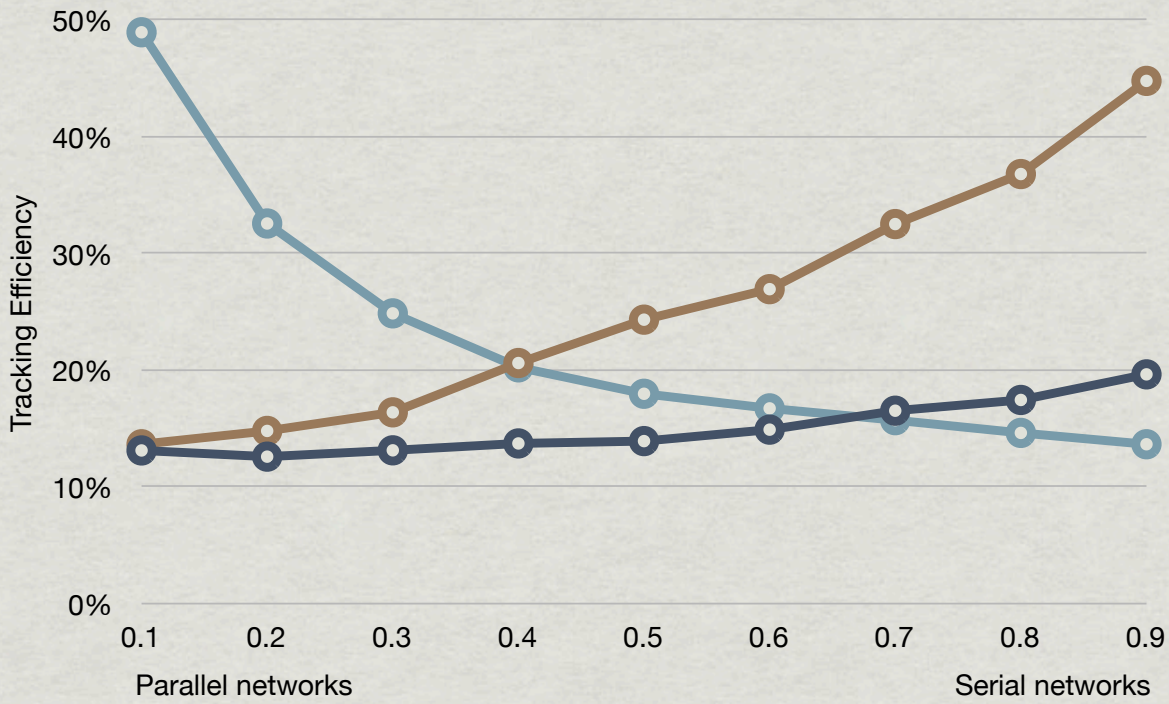
Negative effect on project performance?



Highly sensitive activities in trouble!

- Earned Value Management works for more serial projects (well-structured)
- Schedule Risk Analysis works for more parallel projects (more chaotic)

Improved corrective actions



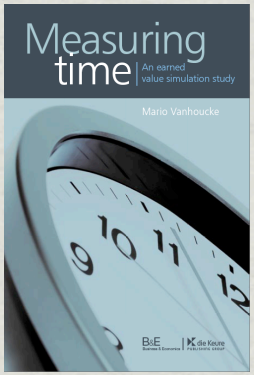
TD-SPI	-
TD-SPI(t)	Top-down project tracking using EVM with SPI(t) is particularly useful for serial networks
BU-SRA	Bottom-up project tracking using SRA is particularly useful for parallel networks

General conclusion

	Activity based project tracking (bottom-up time sensitivity)	Project based project tracking (Top-down earned value)
Parallel project networks	Yes! Focus on a subpart of activity set	No! Inaccurate time forecasts
Serial project networks	No! Focus not possible	Yes! Accurate time forecasts using Earned Schedule

A new book (coming soon)

- An EVM introduction
- The EV terminology
- A case study
- The research project
- Static drivers of forecast accuracy
- Dynamic drivers of forecast accuracy
- Time sensitivity and corrective actions
- Top-down or bottom-up project tracking
- The software



New software tool (available)

CRITERIA	ProTrack Standard	ProTrack Sensitivity Scan	ProTrack Time Shuttle	ProTrack Smart Version
Project Planning				
CPM based planning	yes	yes	yes	yes
Network visualization	-	yes	yes	yes
Automatic Project Creation	-	yes	yes	yes
Project simulation options				
Activity Time/Cost Simulation	-	Advanced module	Standard Module	Standard/Advanced modules
Schedule Risk Analysis	-	yes	-	yes
EVM forecast accuracy Analysis	-	-	yes	yes
Project Tracking				
Earned Value and Earned Schedule	yes	yes	yes	yes
Earned Value Forecasting**	yes	yes	yes	yes
Automatic Tracking Generation	-	-	yes	yes
p-factor calculation	-	-	yes	yes
Book "Measuring Time"	-	-	-	yes
Price	299 €	399 €	399 €	599 €

Contact

- Interested about
  - The new book
  - The new software tool
  - Future research results
- Subscribe to our **newsletter** on www.or-as.be
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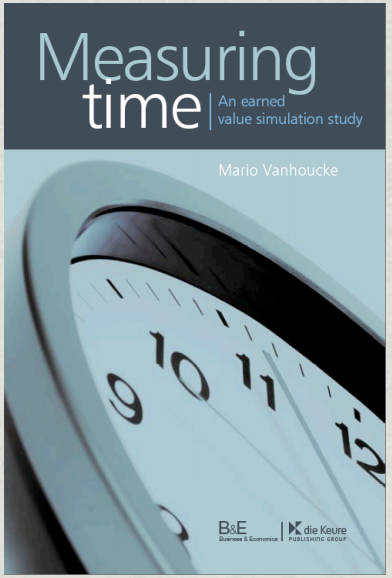

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