

	Case Name: New Product	Sector	Production	
	OR-AS Operations Research - Applications and Solutions www.or-as.be info@or-as.be	Baseline schedule	Schedule with resources	
			Schedule with costs	
		Risk analysis	Random Simulation	
Submitted by	Rojin & Forough		One of nine std. scenarios	
Date	2020	Project Control	User defined distributions	
File Name	New Product Development		Automatic tracking	
			Tracking based on user input	

1. Project description

Project Authenticity

The project consists of *activity* data that were obtained directly from the actual project owner.

2. Project properties

2.1. Baseline schedule

General	
# Activities	37
Planned Duration (PD)	84 days*
Budget at Completion (BAC)	€ 32,481.00
Renewable Resources	-
Consumable Resources	-

Network Topology	
Serial/Parallel (SP)	58%
Activity Distribution (AD)	57%
Length of Arcs (LA)	10%
Topological Float (TF)	8%

* Standard eight-hour working days

2.2. Risk analysis

Random simulation by ProTrack was performed using the default symmetric triangular risk distribution profiles.

	Cost sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	11.1	13.62	2.3
CRI-rho	20.8	18.50	0.9
CRI-thau	33.5	34.75	1.1

	Resource sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	N/A	N/A	N/A
CRI-rho	N/A	N/A	N/A
CRI-thau	N/A	N/A	N/A

	Time sensitivity		
	avg (%)	std dev (%)	skew (-)
CI	57.4	43.8	-0.4
SI	36.3	41.4	0.5
SSI	7.2	13.7	4.7
CRI-r	11.4	14.5	3.8
CRI-rho	23.3	23.4	1.6
CRI-thau	35.9	35.7	0.9

3. Project control

3.1 simulated forecast accuracy

simulated EAC (t) accuracy		
Method - PF	MAPE (%)	MPE (%)
PV - 1	7.2	-4.38
PV - SPI	7.45	1.72
PV - SCI	7.75	2.13
ED - 1	6.58	-3.3
ED - SPI	7.5	1.45
ED - SCI	7.65	1.75
ES- 1	6.98	-4.83
ES- SPI(t)	5.55	-1.99
ES - SCI(t)	5.7	-1.87

simulated EAC accuracy		
Method - PF	MAPE (%)	MPE (%)
1	1.15	-0.47
CPI	1.35	-0.3
SPI	5.45	4.83
SPI (t)	3.45	3.65
SCI	5.55	4.83
SCI (t)	3.55	3.5
0.8 CPI + 0.2 SPI	1.68	1.1
0.8 CPI + 0.2 SPI (t)	1.25	0.6

3.2 EVM

Performance metrics

	CV (€)	SV (€)	SV(t) (d)	CPI(-)	SPI (-)	SPI(t) (-)	p-factor (-)
avg	-149.22	273.78	1	0.97	1.07	1.45	0.93
std dev							
final	-3125.00	0	147.6	0.91	1.00	0.38	0.87

Time forecasting

PD	91.8	Real duration	239	Late	160.34%
----	------	---------------	-----	------	---------

EAC (t)	Real Accuracy			
Method - PF	avg (d)	std dev (d)	MAPE (%)	MPE (%)
PV - 1	175		26.78	-26.78
PV - SPI	172		28.03	-28.03
PV - SCI	161		32.64	-32.64
ED - 1	640		167.78	167.78
ED - SPI	640		167.78	167.78
ED - SCI	336		40.59	40.59
ES- 1	658		175.31	175.31
ES- SPI(t)	655		174.06	174.06
ES - SCI(t)	344		43.93	43.93

Cost forecasting

BAC (€)	€ 32,481.00	Real cost	€ 35,606.00	Over Budget	€ 3,125.00
---------	-------------	-----------	-------------	-------------	------------

EAC	Real Accuracy			
Method - PF	avg (€)	std dev (€)	MAPE (%)	MPE (%)
1	€ 32,629.00		8.36	-8.36
CPI	€ 33,499.00		5.92	-5.92
SPI	€ 188,073.00		428.21	428.21
SPI (t)	€ 101,503.00		185.07	185.07
SCI	€ 193,817.00		444.34	444.34
SCI (t)	€ 104,532.00		193.58	193.58
0.8 CPI + 0.2 SPI	€ 39,310.00		10.40	10.40
0.8 CPI + 0.2 SPI (t)	€ 38,188.00		7.25	7.25