PE Challange

- Determine correlation

Cost per m1

$y = 0.0763x + 51.018$
$R^2 = 0.8222$

Cost per m2

$y = 0.0043x - 2.5956$
$R^2 = 0.9496$
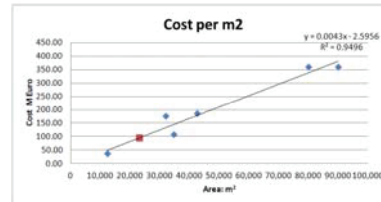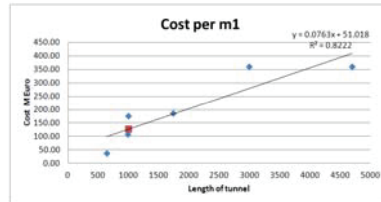
- Validate correlation
  m1: R^2 0.822   *m2: R^2 0.949*

- Estimate the new object

Name	Location	Characteristics		Predicted Cost [M€]		
		Cost	Area			Excluding
Bridge		[M€]	[m²]	[m²]	Data Set	Outlier
A		185.00	42,500	42,500	178.62	178.62
B		38.59	12,300	12,300	49.85	49.85
C		107.00	34,650	34,650	145.15	145.15
D		360.00	79,900	79,900	338.10	338.10
E		360.00	79,900	90,000	381.16	381.16
F		176.31	32,000	32,000	133.85	133.85
Forecast				23,000	95.48	95.48

Parametric Estimating Extended

- Single correlation (2 parameters)
  PE Example
  y = 0.0043x - 2.5956

- Multiple correlation
  (multiple interdependent parameters)

Key Inputs

Input	Definition
S_e	Effective Size.
C_{te}	Effective Technology.
D	Staffing Complexity.
Pk	Staff Loading, which represents the place on the staffing curve where staff peaks.
F_s	Staff Loading Scale Factor, computed from PE.

Key Outputs

Output	Definition
K	Life Cycle Effort, or the total area under the staffing curve.
t_d	Schedule to the peak of the staffing curve.

estimate

estimate · analyze · plan · control

SEER for Software

Finding Staffing Rate with the Front Loaded Rayleigh

Staffing rate is defined as the derivative of the staffing curve at time = 0. The derivative of the staffing curve with the front loading parameters is:

$$p'(t) = \frac{F_s K}{\left(Pk\%t_d\right)^2}\left(e^{\left(-\frac{t^2}{2\left(Pk\%t_d\right)^2}\right)} + \left(\frac{-2t^2}{2\left(Pk\%t_d\right)^2}\right)e^{\left(-\frac{t^2}{2\left(Pk\%t_d\right)^2}\right)}\right)$$

SEER SEM "Base" settings

- Component structure

- Minimal Requirements:
  Size
  Technology
  General Characteristics ("Environment")

SEER SEM "Environment" settings

- Manual

- Help

Tunnel Safety System

- Estimate
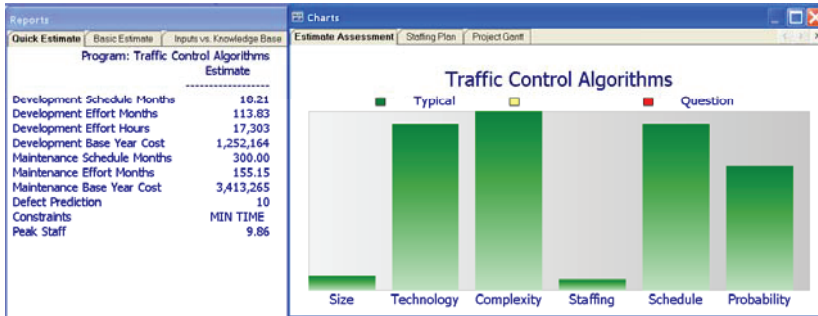
- Results:
  Effort / Cost
  Schedule
  Quality (Defects)

Both for Development & Maintenance (25 years)

External Validation

- Benchmark estimate with ISBSG