

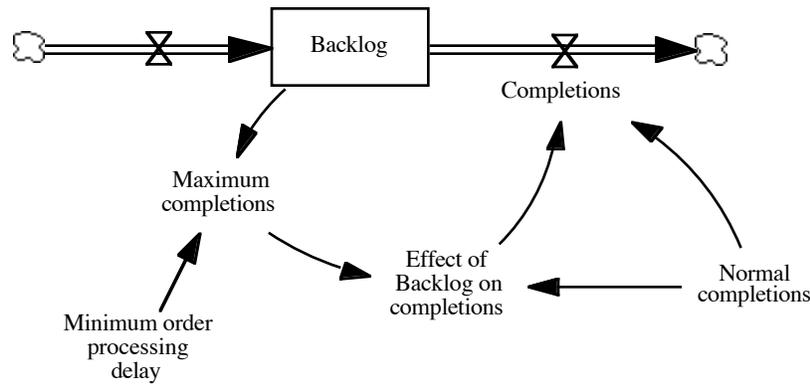
Lecture #9: Advanced formulation issues

I. Forecasting

- A. Linear extrapolation: the SLOPE macro and its application
- B. Exponential extrapolation: the TREND macro and its application

II. MIN and MAX in table functions: “soft” minima and maxima

- A. $\text{MIN}(x,y)$ becomes $x f(y/x)$, where $f(x) = x$ if $y/x < 1$ and $= 1$ if $y/x \geq 1$.
- B. Variant: Effect of Backlog on the Completion Rate formulated as Normal Completion Rate * $f(\text{Maximum Completions} / \text{Normal Completion Rate})$.



C.

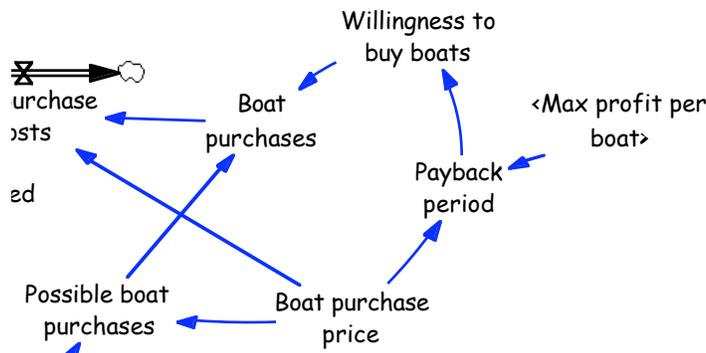
III. IF/THEN in table functions:

- A. IF $a \geq b$ THEN x ELSE y becomes $WT * X + (1-WT)* Y$, where $WT = f(a/b) = 0$ if $a/b < 1$ and $= 1$ if $a/b \geq 1$.
- B. Examples in Fish Banks (see picture on the next page)

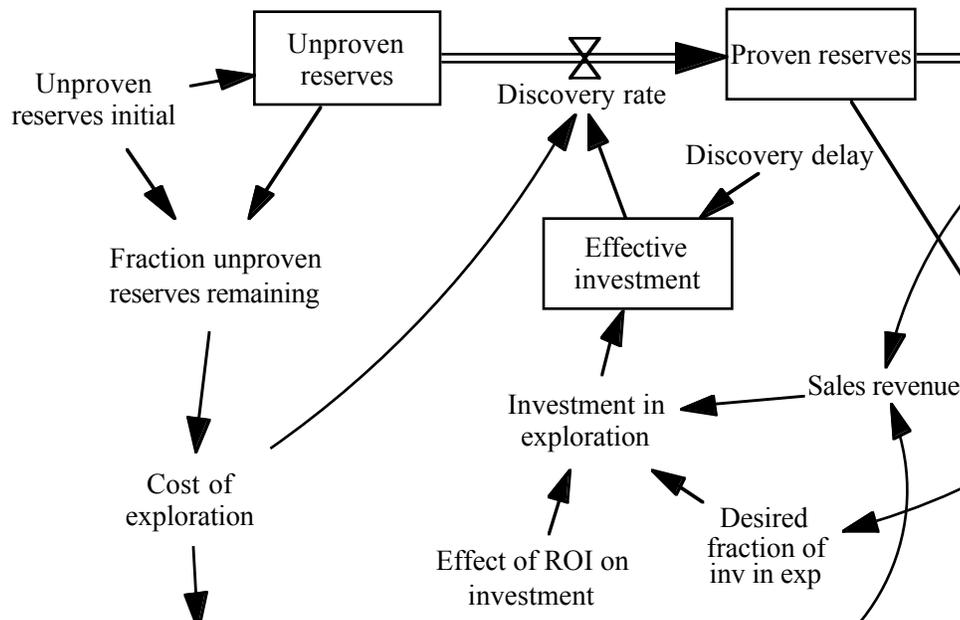
1. Fraction of boats fishing = $f(\text{Profit margin required for fishing})$
2. Fraction of in Deep Sea = $f(\text{Deep sea profit} - \text{Coast profit})$

IV. Elegance

A. Boat purchases in Fish Banks:

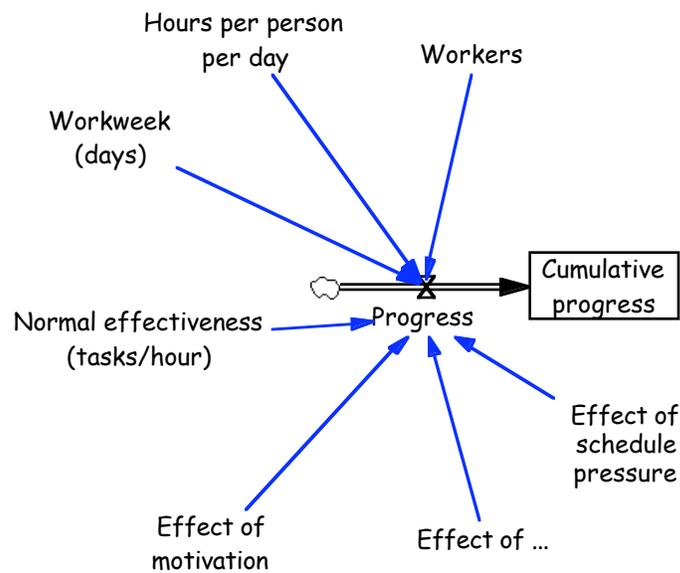


B. Discovery rate in Naill's Natural Gas Model:

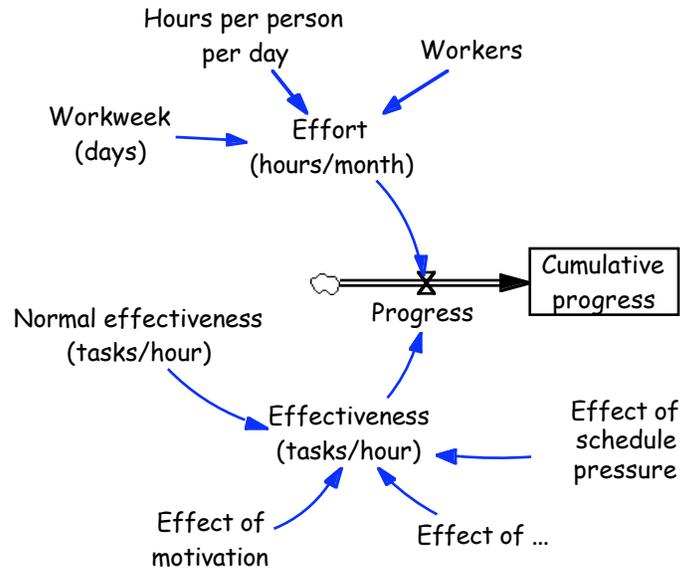


C. Effort and effectiveness:

1. Not like this (causal mish mash):



2. But like this:



3. Integrating information (from a CTG model):

