



RECORDIT

REal COst Reduction of Door-to-door
Intermodal Transport

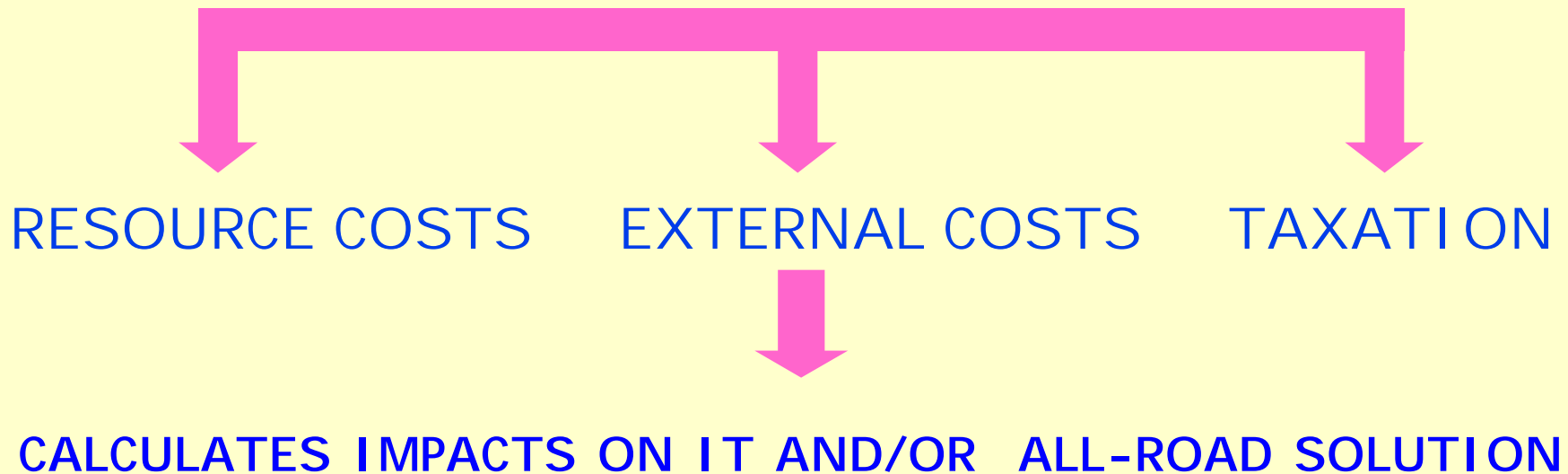


WP7 – DEVELOPMENT OF THE DSS -
THE “WHAT IF” SCENARIOS PRELIMINARY
APPROACH



OBJECTIVES OF DSS

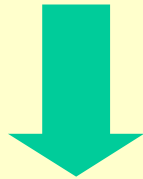
SIMULATE THE CHANGES IN ANY ONE
OF THE COST COMPONENTS





THE GENERAL APPROACH TO POLICY EVALUATION

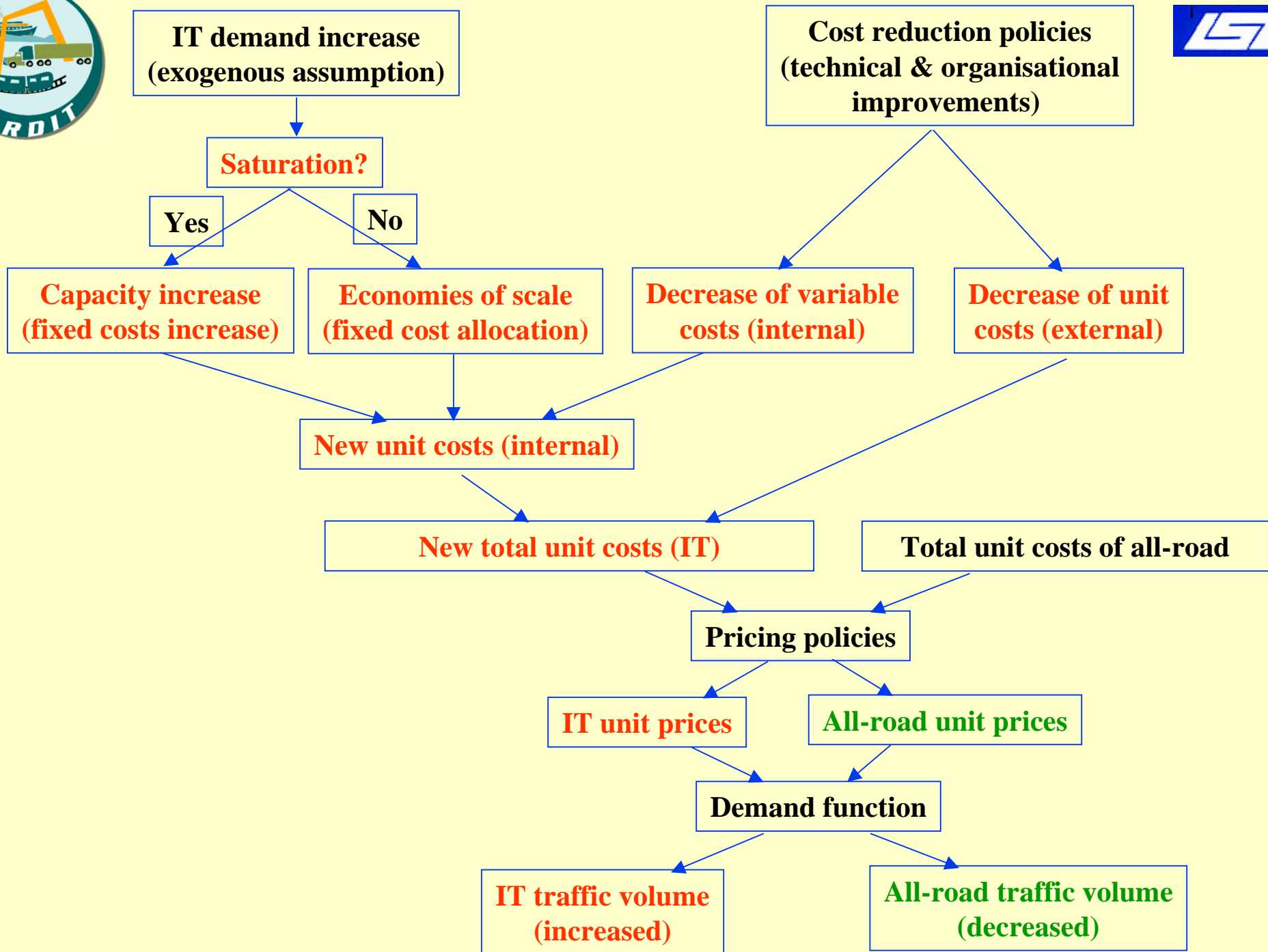
1. POLICY DEFINITION (TECHNOLOGICAL IMPROVEMENTS,
TAXATION, ORGANISATIONAL IMPROVEMENTS ..)



2. EFFECTS ON COST DRIVERS (+-% VALUES),
i.e. COST ITEMS, PARAMETERS



3. IMPACT ANALYSIS AT OVERALL IT/ALL ROAD COSTS LEVEL

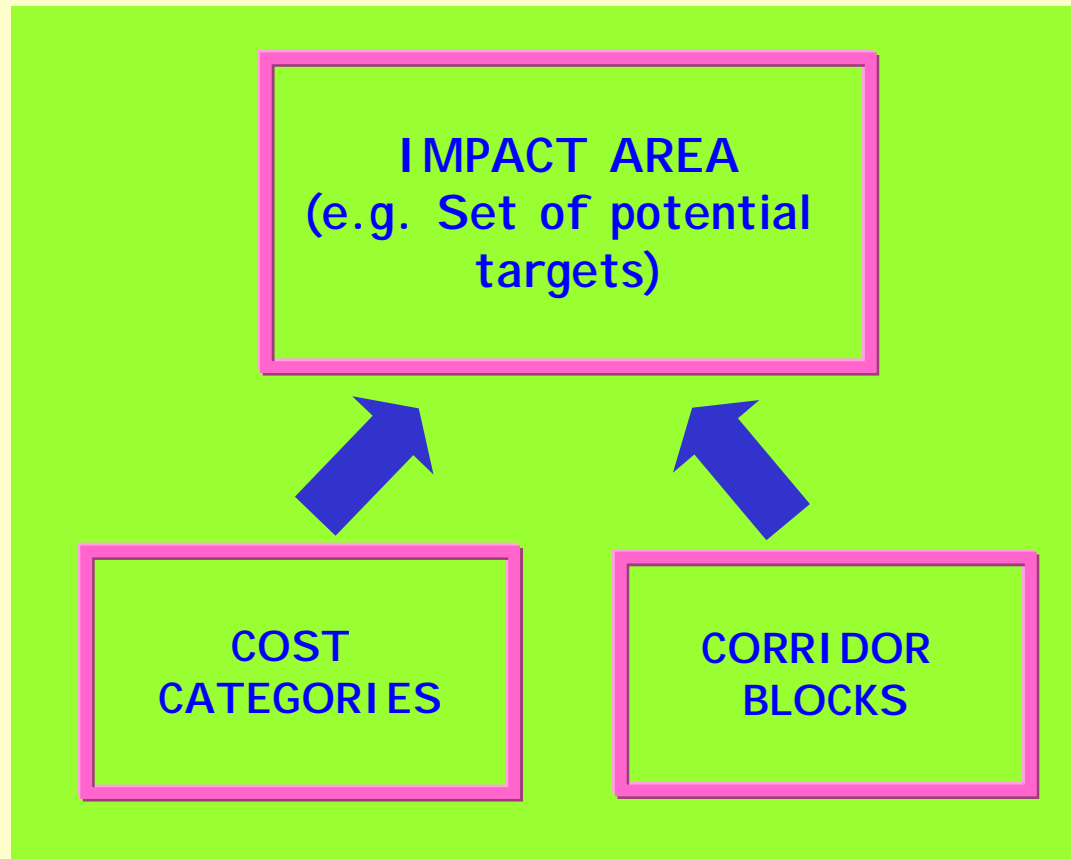
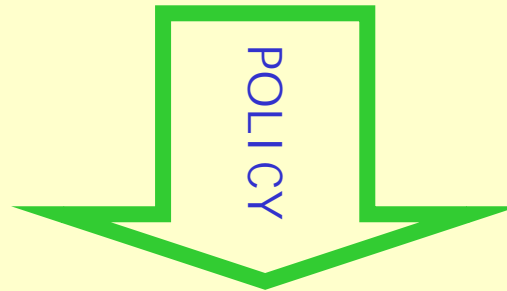




Cost reduction policies



INTERNAL COSTS: POLICY SET UP



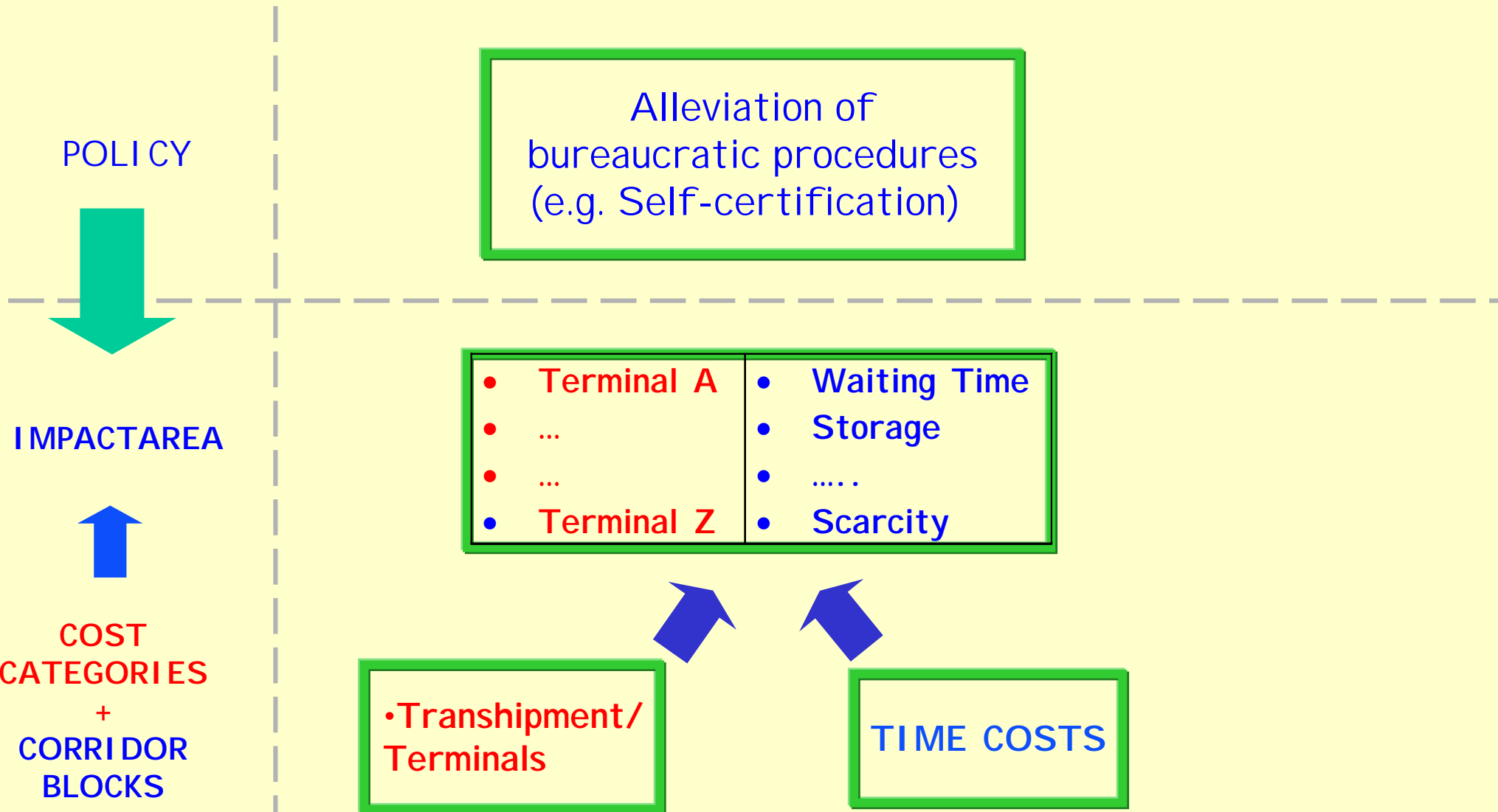


Cost reduction policies



INTERNAL COSTS: POLICY SET UP

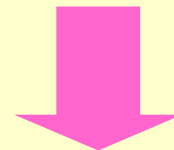
EXAMPLE:





USERS CAN SIMULATE THE IMPACT OF A GIVEN POLICY APPLYING ALTERNATIVELY:

- THE SAME PERCENTAGE OF VARIATION TO THE SELECTED COST CATEGORIES/COST ITEMS ALONG ALL BLOCKS
- DIFFERENT PERCENTAGE OF VARIATION TO THE SELECTED COST CATEGORIES/COST ITEMS BY BLOCK TYPE
- DIFFERENT PERCENTAGE OF VARIATION TO THE SELECTED COST CATEGORIES/COST ITEMS BY BLOCK



DSS CALCULATES THE TOTAL IMPACT ON THE CORRIDOR COSTS



INTERNAL COSTS: SIMULATION of a POLICY

COST CATEGORY

CONSUMPTION
ASSETS
PERSONNEL
ORGANIZATION
TAXES
TIME
STOCK TURN

COST ITEM

Salary of driver
Salary of chief shunters
Personnel (logistic unit)
Social security
....
...

INPUT
(USER)

-6%

+ 3%

OUTPUT
(DSS)

Calculation of the NEW corridor cost



SIMULATION OF A PACKAGE OF POLICIES

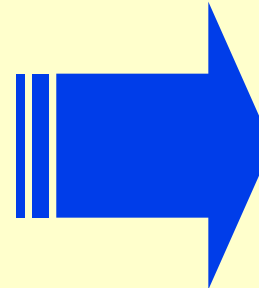
SELF -
CERTIFICATION

+

ANNUAL
VEHICLE TAXES

+

SOCIAL
SECURITY



TOTAL IMPACT
 Σ



Cost reduction policies



EXTERNAL COSTS

The *theoretical* implementation of a policy can induce:

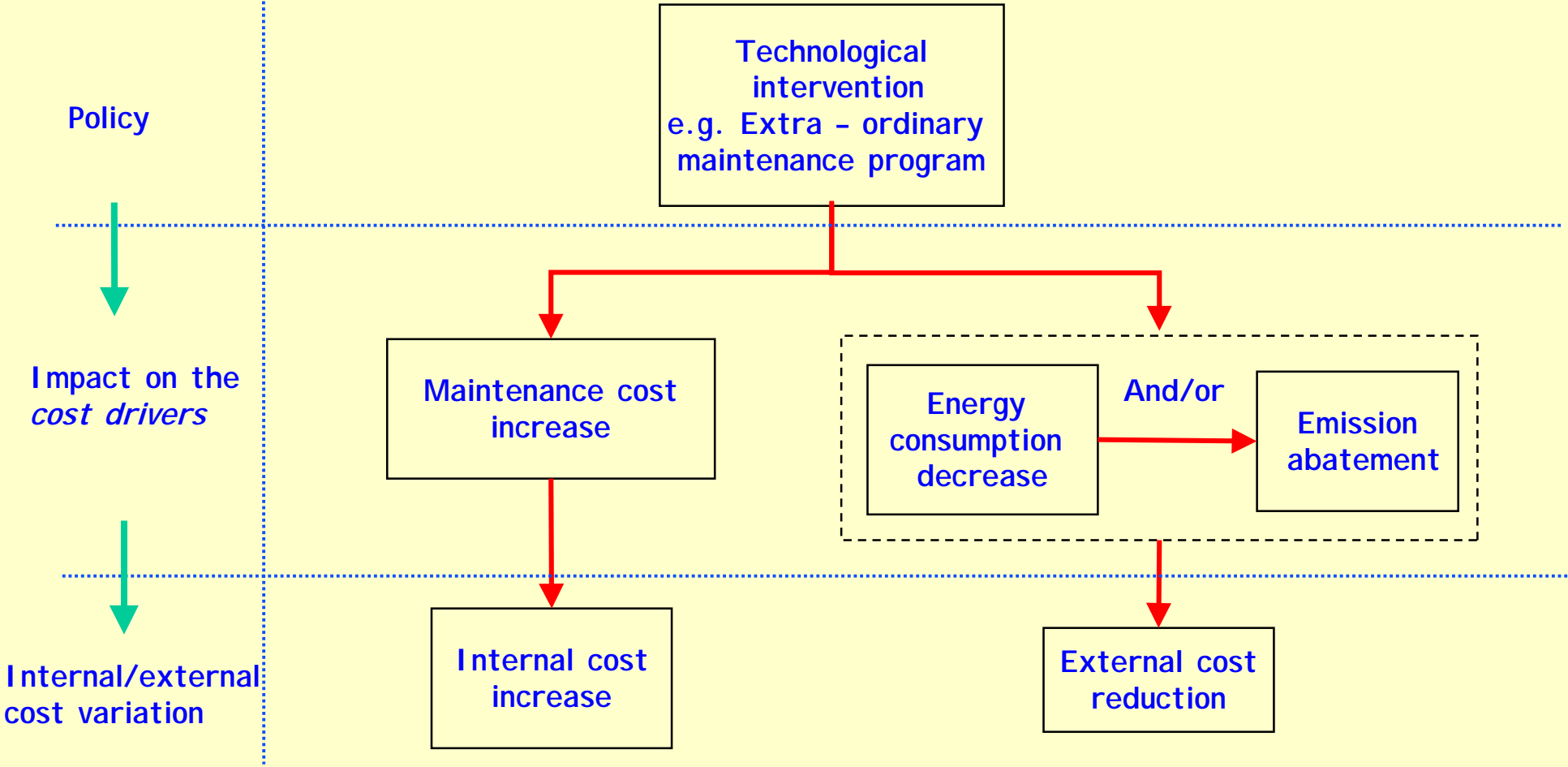
- A change in the unitary value of the internal costs
(e.g. Organizational costs)
- A change in both, the unitary value of the internal AND external component of the real cost
(e.g. Simulation of an extra - ordinary maintenance program)

Particularly we can expect the external (unitary) cost to vary with the implementation of the **technical measures**.

In this case it is necessary to express the physical impact of the policy in terms of cost variation, i.e. we need to identify an appropriate set of **cost drivers**.



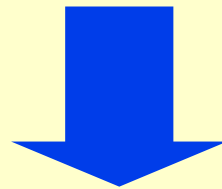
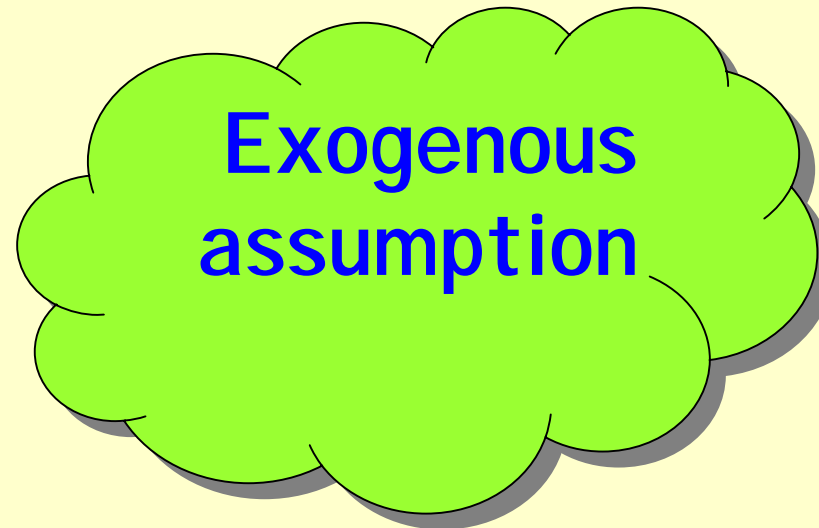
EXTERNAL COSTS





IT demand increase

DEMAND CHANGE



I.E. +10% OVER A CORRIDOR (OR SEGMENT)



IT demand increase

SET UP OF PARAMETRIC COST FUNCTIONS FOR IT ACTIVITIES THROUGH THE VARIATION OF MAIN DRIVERS:

- LOAD FACTOR FROM 70 TO 100%
- SPARE CAPACITY FROM 30 TO 0%



PACKAGE OF POLICIES + DEMAND INCREASE

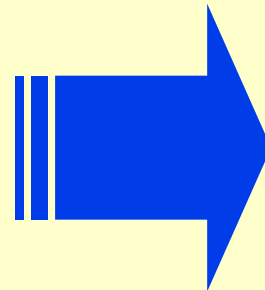
SELF -
CERTIFICATION

+

ANNUAL
VEHICLE TAXES

+

SPARE CAPACITY
DECREASE



TOTAL IMPACT
 Σ



DEMAND FUNCTION

THE NEW COST PER LU, COMBINING THE IMPACTS OF CHANGE
IN DEMAND AND OTHER POLICIES
COULD AFFECT THE DEMAND IN IT AND ALL ROAD SOLUTIONS

DEMAND
FUNCTION



COEFFICIENT OF ELASTICITY FOR IT AND ALL-ROAD TRAFFIC VOLUME
WITH PRICE/COST VARIATION



IT TRAFFIC
VOLUME
(INCREASED)



ALL ROAD TRAFFIC
VOLUME
(DECREASED)



**SIMULATION
EXPECTED OUTPUT**



COST CATEGORY	BEFORE		AFTER	
	Value (Euro/LU)	%	Value (Euro/LU)	%
ASSETS	741,29	20,16		
CONSUMPTION	298,73	8,12		
INSURANCES/TAXES/CHARGES		
ORGANIZATION		
OVERHEADS				
PERSONNEL				
TIME				
STOCK TURN				
TOTAL INTERNAL COSTS				
AIR POLLUTION				
GLOBAL WARMING				
NOISE				
ACCIDENTS				
TOTAL EXTERNAL COSTS				
TOTAL				