## International Logistics Facility location

- international network management Workshop 6



## Project

## How to design the most effective

 international distribution network?

## Facility location <br> - international network management

Formula for Domain Point:

$C(\mathrm{X} ; \mathrm{Y})-$ coordinates of the optimal point $\mathrm{X} / \mathrm{Y}$
Mi - coordinates for delivery points (markets)
Si - coordinates for supply points (natural resources)
Di - number of transportation units (goods to be sold)
$d i$ - number of transportation units (material and resources)
$\boldsymbol{R i}$ - transportation rate for goods delivery (markets)
ri - transportation rate for materials and resources

## Facllity location <br> - international network management

 Methodology:1. Create a graph (net) over the geographical map (i.e, map of Europe) and put an appropriate scale on x/y coordinates.
2. Define $x / y$ coordinates for all points of supply (S) and demand (M)
3. Enter all input data to the appropriate defined, structured table.
4. Based on the presented formula perform all calculations. Evaluate coordinates for the new localization of plant.
5. Point out the optimized localization of the logistics point on the map.
6. Perform some „what if" analysis for different business scenarios.

## Project: Facility location

Evaluation Table (1/2): numenator

$$
C=\frac{\sum_{1}^{m} r i d i S i+\sum_{1}^{m} R i D i M i}{\sum_{1}^{m} r i d i+\sum_{1}^{m} R i D i}
$$



## Project: Facility location

 Evaluation Table (2/2): denominator$C=\frac{\sum_{1}^{m} r i d i S i+\sum_{1}^{m} R i D i M i}{\sum_{1}^{m} r i d i+\sum_{1}^{m} R i D i}$


## Project: Facility location

MAP:
two-
dimensional
Cartiesian
plane
$x$; y net coordinates


## Questions?



- dr Marian Krupa

