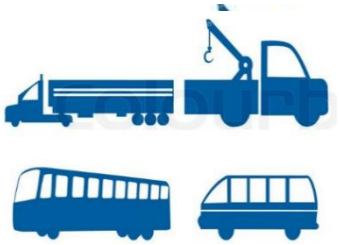
Six Sigma in Transportation

Improving in transport activities can be done with the help of Six Sigma. This is a continuous improvement methodology in 5 steps based on **DMAIC** cycle (Define – Measure-Analyze – Improve – Control).

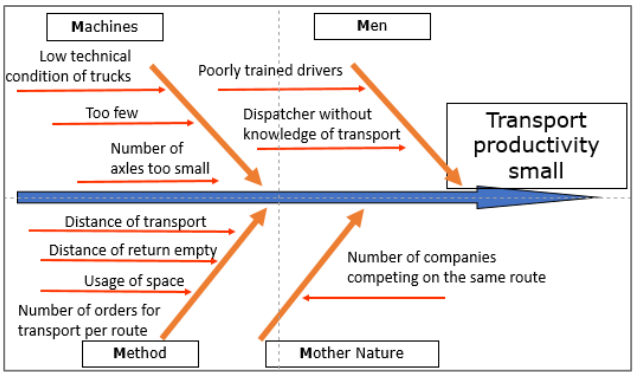
Examples of measurable indicators in transport activity can be: average transport distance (D); loading of truck (G%); specific cost of the delivery by example cost per km (p); tonnage per axle (T); productivity (P), etc.



Here is an example of successfully using Six Sigma: "Increased productivity of transportation". The key indicator which give the performance of the process is P / Productivity (*tons x km/tons capacity)*. This indicator should be as big as possible and it is critical for cost reduction.

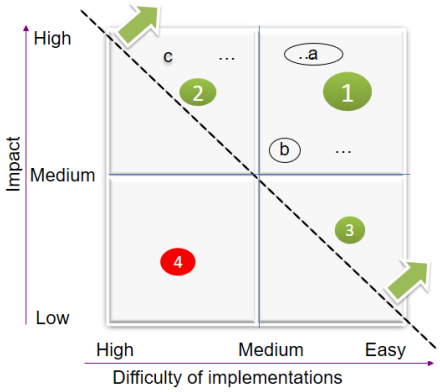
In **D**efine is identify and study the process and select the team that will work on the project. Specific tools of this phase can be: Map process and find the CTQ – Critical to Quality.

Data are collecting and measure the load being carried (G), average transport distance (D) and their variation in time and the parameters that would influence it, x-s (**M**easure phase). Identifying of x was made by Ishikawa (see picture below).



P is influenced by: the average distance of transport (D), the number of orders for transport per route (C) the type of truck transport / the number of axles (T4 or T5), the distance of return empty (Dg), the number of companies competing on the same route (n), drivers, etc. These parameters are called potential causes.

In **A**nalyze phase potential causes can become root causes by using more advanced techniques like Hypothesis Testing. We found the root cause, in our example the average distance of transport (D). A secondary root causes is improper usage of space. It proceeds to identify solutions that implemented would eliminate or diminish the negative effects for which it was made the project (**I**mprovement phase). We can use the following tools: Brainstorming, DOE (Design Of Experiment), Poka Yoke. Choosing the most efficient or the fastest solutions can be done using Prioritization Matrix. In our case "more contracts / at least 20 course per month / with customers placed to over 300 Km" was the chosen solution.



Were identified a total of seven new customers placed on over 300 km, average transport distance (D) increased and productivity was raised from 105 to 150 *tons x km/tons capacity.*

In **C**ontrol phase the drivers are trained to use the space from the truck efficiently.

We invite you to Six Sigma courses organized by Effective Flux to reap the benefits of this methodology.