Cost matrix structure

4flow's software are optimizing logistics mostly for manufactoring companies that need larger parts delivered for production. The fleet of vehicles are being delivered by different logistic carriers. Meaning they have different price structures. In some cases they give a price quota that is as simple as a fixed cost per vehicle. Other times it can be a bit more complicated and the fixed cost can change depending on how far the vehicle is travelling. This gives you in the end a sort of one dimentional cost table where the fix cost changes based on the total distance:

Total km B	B<100	B<200	B>200
Fixed cost pr vehicle C_{fix}	$C_{fix} = 2000$	$C_{fix} = 3000$	$C_{fix} = 4000$

The example above sometimes changes to a variable cost per km aswell where instead of paying a fixed price, it is rather multiplied in the end with the total km the vehicle has driven.
The carrier could also have different costs based on the maximum weight being transported. In the simplest matter the carrier would have a price per km that depends on the total weight being transported, much like the km example above:

Maximum weight on vehicle L	Cost per km C_{km}
L < 10 T	$C_{km} = 20$
L < 20 T	$C_{km} = 40$
L > 20 T	$C_{km} = 60$

Another carrier might not care so much about the distance because..... (gonna ask lars why they calculate in weight instead of distance) but offer to transport anything in a distance less than 100 km paying only per kilo of weight being transported:

Maximum weight on vehicle L	Cost per Kilogram C_{ki}
L < 10 T	$C_{ki} = 2$
L < 20 T	$C_{ki} = 3$
L < 30 T	$C_{ki} = 4$

The worst case:
The worst case scenario could be that a carrier decides to combine one or several (or all) of the above cost structures. Meaning that the cost structure might end up looking something like the following:

Maximum weight L\Total distance B	B < 100 km	B < 200 km	B > 200 km
L < 10 T	$C_{ki} = 0.2$	$C_{km} = 20$	$C_{fix} = 4000$
L < 20 T	$C_{ki} = 0.3$	$C_{km} = 40$	$C_{fix} = 8000$
L > 20 T	$C_{ki} = 0.4$	$C_{km} = 60$	$C_{fix} = 12000$

This might happen when.... (will clear with lars exactly why and when this is happening).. because...