Operating a versatile fleet

Truck fleets include **different types** of trucks: old and new versions of the same model, a mix of models of the same truck category or a mix of makers of the same category. Vehicles of different types could differ somewhat in variable costs (E.g. different in fuel efficiency).

Many fleet operators go further to integrate trucks of **different categories** in the same operation, to execute transportation tasks with different requirements or to achieve better economics. We refer to this as **versatile fleet**. Vehicles of different categories can **differ substantially** in their variable costs.

Certain tasks or customers can be served by trucks of any category. However, certain goods/cargo mandate using trucks of a certain category and certain customers may require being served by trucks of a certain category (E.g. with hydraulic ramp).

Note: Driver qualifications and skills may also differ widely, but more on that in another info page.

Considerations in employing a versatile fleet:

- Ensure availability of trucks in each relevant category, to guarantee serving the tasks or the customers that mandate trucks of certain categories.
- Devise the right mix of trucks to economically serve a blend of category-specific tasks and category-agnostics tasks.
- Maintain flexibility for updating the truck mix, when needed.
- Make an Buy-Lease-Hire decision regarding trucks of certain categories, especially regarding expensive ones.

Transportation plans for a versatile fleet must determine which truck shall be used for each task. Planning can take place daily but is typically updated or refreshed more frequently.

Planning by humans is complex and time-consuming for a fleet that includes 2-5 different truck categories, not to mention different truck types. It becomes even harder to update the plan quickly as circumstances change - Dynamic Planning (See more in “Dynamic” info page).

Urbana’s planning effortlessly integrates trucks of different categories and types, and allocates these to guarantee execution and minimize total cost. Planning quickly yields detailed transportation plans, directed by policies and rules in several functional and financial dimensions.

To enable this Urbana models the trucks in several aspects:

- Each truck's carrying capacity for weight, volume and other. This applies per element for articulated trucks or when using containers.
- Each truck's basic configuration and special-purpose equipment (E.g. hydraulic ramp, crane, deep freeze compartment).
- Operating cost as function of time/distance or explicit cost based-on price lists.
- Customer or facility requirements to be served by certain trucks or avoid certain trucks.
- Task category, characteristics or regulation that mandates using certain truck categories.
- Truck start points, end points, and current locations for dynamic planning.
- Availability of unique truck categories on certain days and during certain hours.

These factors direct Urbana's decisions of which truck to allocate to each task and at what cost.

The policies and rules to manage a versatile fleet are easily configured in Urbana by the fleet operator and can be 'tuned' when circumstances change (E.g. when fuel costs change meaningfully). These co-exist with other policies and rules that are defined in Urbana.

From the available trucks, Urbana will automatically use the right mix in each planning cycle.

Buy-Lease-Hire decisions involve a longer horizon. Urbana can be used to simulate and compare performance and cost of multiple options, and help make the best decision. Still, Urbana is primarily a real-time planning system, not a not a financial planning system.

If you have any refreshing insights on this matter, please share with us: Urbana.Tech