

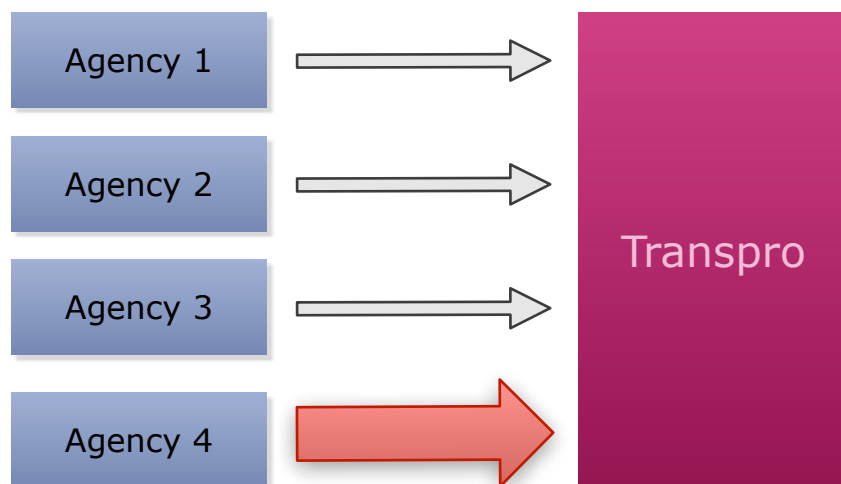
Automation in Specialized Transportation

Trip Ticket Handoff Between Organizations

Exchanging Information

One of the challenges in coordinated transportation is timely and accurate handing off of trip information from one organization to another. For many transportation providers, this process is time consuming and subject to lost or inaccurate trips.

Some would have us believe that in order to pass trip ticket information electronically between organizations; we all need to be using the same scheduling/dispatching software. Those assertions are not true. Exchanging trip tickets electronically between organizations using different software products is not only possible, but an accurate and highly efficient process.



Electronic Trip Information can be transferred more quickly and accurately

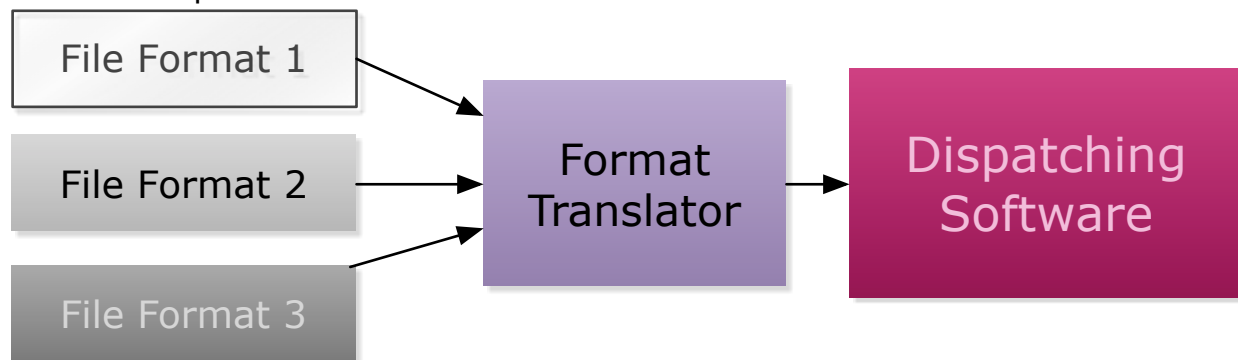
Service Provider for Many Organizations

Transpro of Tacoma WA is a transportation service provider for six different agencies in the greater Puget Sound region of Washington State. Each of the six agencies is using a different scheduling and dispatching software and thus different methods of distributing trips to their service providers. At the time of installation of Easy Rides in the summer of 2009, only one agency could provide trips in a readable electronic format. Trip tickets from all of the other brokers had to be manually entered into the software from faxed paper trip sheets or printouts from a web login. Mobilitat designed a software utility to

translate and import these trips into Transpro's new Easy Rides® scheduling/dispatching software.

The Interpreter

Any program that can import data must be able to recognize the source data and import it into the correct fields and in the proper format. Although the data itself may be formatted in one of many standards, each of the programs involved might be using a different standard. For example, a date can be formatted as Mar 2, 2010, 2010-03-02, 03/02/2010 or another of many standard date formats. This 'interpreter' or third party task is something that most of us have done or currently do every day in other areas of our work and personal lives.



During the development of each importer we had to automate the process of mapping the fields in the source data file to the corresponding fields into Easy Rides. At some point during development, the file that was being generated by the source software changed, forcing us to revisit development and testing in some areas.

Considerations

Here are some things that are critical to the development and continued functionality of an importing process.

- It is important to observe the manual data entry process to determine how each piece of data is converted and entered into the software used.
- Make sure that the method of transferring the data is reliable and can be found by the importer or destination software.
- The source data must be well defined and does not change in layout, data fields and formatting.
- Some fields may have more than one meaning. For example a "route" in one piece of software may not be the same concept as a "route" in another. Make sure to clarify what is meant by common dispatching terms to make sure everyone is speaking the same language.
 - Sometimes much more data is passed into a system than necessary. Depending on reporting requirements, it may be possible to reduce the amount of data imported for each trip, which can simplify development, improve speed and reduce testing costs.

Significant Savings

Prior to implementation of Easy Rides and the import tool, Transpro staff spent about two hours each day to manually input trips from one of their brokers once received. Now that the importer is operational and implemented the entire process currently takes between five and fifteen minutes.

Later a 2nd agency was able to provide electronic records (although in a different format from the first). We wrote a new translator to facilitate importing these new records. Prior to the second importer it took about (6 to 8 Hours) a day to enter all client and trip data. The second importer also reduced data entry times to around 5 minutes.

Staff members who were spending significant parts of their shift performing data entry are now able to focus on other tasks, which has allowed for a rearrangement for a more efficient schedule. The six to ten hours of labor per day saved by these importers has easily offset the initial cost of development.

To calculate the cost savings we will assume \$10/hour for labor costs. The manual process for importing trips took 8 hours/day. Transpro is a 24/7/365 operation. The cost for manually entering trips each day would add up to \$29,200 each year. The labor costs for the electronic method, taking only 15 minutes per day would be \$912 per year. The combined cost to develop and deliver the importers was \$10,000, so the cost for the importers was recovered in labor savings in less than three months. And that's just labor costs alone. A manual trip entry process is much more susceptible to missing or incorrect trips due to human error or missing fax pages etc..



Standardization

Probably the biggest challenge to the trip importing process is reprogramming the software for changes in structure or format of the exported data files. If there were an established standard for exchanging data between brokerage/scheduling/dispatching software programs, passing trip data between them would be much easier, robust and less expensive than it currently is. Still, even with the initial cost of custom software development and occasional adjustments for changes in exported trip data files it is a huge time and money saver and takes us another step toward real coordinated transportation.