

# Transcript of Freight Solutions 2003 presentation

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**Title:** Implementing a scheduling and route optimisation system across in-house and outsourced transport  
**Presenters:** Damian Scott, Operations Director, Transit Computer Systems  
Steve Innes, National Operations Manager, Toll Logistics Food & Beverage

## Damian Scott

Routing and scheduling systems are very significant and can help Australian transport distribution businesses a hell of a lot. Successful implementations of routing and scheduling systems involve user acceptance. User acceptance meaning the drivers must accept the runs, the schedulers must accept the runs and management must accept the runs. That is successful implementation. Like warehouse management systems, there are a lot of attempts at installing systems that are unsuccessful because they don't achieve those three goals.

Success can be elusive but it is common that implementations involve operational change. It involves changes in processes, it involves changes in schedule timing and it involves changes in warehouse operation. If you're not committed to those sorts of changes right up front, implementation can be a lot more difficult and therefore more costly.

You need a lot of support from the vendor that supplies you the software. They have to be intimate not only with their software but also your business, and in designing the software to work with your business. The real question is how to use it in your business, not how it's used in general, and whilst we don't try to re-engineer your business to suit the software, there are some constraints to electronic scheduling that require an adaptation. That involves a review of processes, implementation and then re-review. Then when you change your processes or when you change your business, such as when your business grows or when you have different demands on your business, you need to reassess your routing and scheduling and work with your vendor to make sure it is adjusted to suit.

The cost of our routing and scheduling system is around \$50,000 a site but the real cost of routing and scheduling is not covered in that statement. The real cost is the cost of change which changes for different companies. There is disruption, as with any change of process, but the cost is usually recovered in 3-6 months. Our experience is that you can expect about a 20% reduction in your transport resources as a reasonable average benefit. The cost depends on what has to change in the business. The real cost is about cultural change and you should expect costs to rise by around 10% during the three months that it should take to implement a successful routing and scheduling solution. Most of the cost is about moving people out of their comfort zones and introducing new ways of thinking about the work they do and this paradigm shift is a challenge.

After acceptance that there is possibly a better way to do it, pragmatism means that it kicks itself along. Whenever you are changing perception, everything is about education: education of schedulers, education of drivers and education of management. There is no magic black box, there is a worked system that you must introduce, you must change procedures and then integrate them with your business to make savings. Any of the education steps can be skipped but ultimately it adds cost. You need local input. Education is also about involvement in the change action and local input to the system. If you don't have that, it builds resistance and your chances of success go down and your costs rise. Make sure that you're after an operational solution not a perfect solution. The operational solution will save you money, the perfect solution will send you broke! As with any other business the Pareto principle applies: 80% of your savings will come with 20% of your effort. If you can get your schedule 80% right, right off the bat, then humans are more versatile and better equipped to handle the other 20%. Humans are really good when the number of variables are small, therefore if you get 80% of the schedule right then the remaining 20% is easy.

We involve a lot of human heuristics in our software, that is, rules of thumb. We've been making software for 20 years in the Australian industry and it's Australian transport businesses that come back and tell us how things could have been done better and we include those heuristics in the algorithms. That's why we know that our product works, right out of the box. Then you can get more benefit out of it by customising it to your

business. Management must facilitate the involvement of staff so that you overcome any issues in regards to resistance to change compared to useful feedback that tells you when things are going astray.

The last thing I'd like to discuss is what optimisation means in Australia compared with what optimisation means overseas. Many systems that come out of Europe and USA make an underlying assumption that the cost of transport is marginal. That is, it's very cheap and easy to get transport resources. You can stick up your hand and a truck will stop instantly. That's because that's the way it is in their businesses in their countries. Unfortunately in Australia we have to be far more focussed on reducing our fixed costs and our fixed fleets and even if you do use a third party provider chances are the third party provider doesn't want to drop everything and supply you with two hours of labour. That's why our scheduling system is better adapted to the Australian environment where fixed cost is a significant part of operating a fleet.

An important aspect of cost with these scheduling systems is that the cost investment is recovered well within twelve months. Why do we choose twelve months? Again it's to suit the Australian industry. There are very few people in the Australian transport industry willing to take the risk of an investment that doesn't pay off inside of twelve months. We keep our price performance ratio such that we move within that regime. We can prove that we can return the money within 3-6 months that is costs you to purchase and install the system. After that it's pure profit.

The ultimate gift of a routing and scheduling system is an insight into the distribution business. There is a realisation of the things that are kept in people's heads and the business rules that have been adopted in the business when you have to draw them out and put them into an electronic model. This realisation of the passive rules that you have been obeying can give you a significant insight to the importance of the distribution business and how it runs and the most effective way to outsource it should that be your choice. The old saw is; "what you can't measure you can't manage". With routing and scheduling I'd like to extend that and say; "if you can't build a model of your operations that reliably predicts the outcomes of changes then you don't understand the operation". That is what a routing and scheduling system does for your business as a by-product. Because you have to realise the business rules that you are using, you must create a model that reflects your business and the changes that you make to your business. This allows you even to make decisions on how much it costs for a business rule. Such a rule may increase customer service but if it increases costs by this much, is it worthwhile?

### **Steve Innes**

I'm with Toll Logistics Food and Beverage and we have quite a number of large blue-chip customers such as Woolworths, Cadbury Schweppes and Woolworths Home-Shop and we use many different routing packages. It's horses for courses: every application doesn't suit every business. We don't only use them as a routing and scheduling tool we also use them for doing tender responses for our customers. I've been in the industry now for 24 years and our customers don't want truck drivers with blue singlets any more, they want innovation – not just vehicle design but innovation through technology.

The days of a person sitting with a piece of paper routing vehicles are long gone. Our customers are looking for cost-downs and we've got to deliver cost-downs. It's important that we find technology to enhance their business as well as ours and provide them with these cost-downs. Of recent times we've implemented a scheduling system in a small business that was \$3.5m revenue to us and instantly there was a \$0.5m saving taken out of that business via the use of the electronic scheduling package that took away the paper-based system that was used. The bolt-on components that go on from that make everything real. In the past a lot of truck drivers went out for the day and it was a bit of a mystery what they did. You got the timesheet back at the end of the day and they worked 12 hours and did 40 deliveries – that's acceptable. But now with routing packages they can be manipulated with the drivers' and management's assistance to give real live information back so that our customers know we are giving real value to what they do.

As Damian said, people's culture in the industry is something that's very hard to change, such as accepting routing & scheduling packages. Even our drivers, operations staff and senior management are starting to embrace the use of technology. In the past, it was a piece of paper but I can't stress how important these packages now are to our survival in the industry.

The implementations of these products and the people who are using these products have to be committed. They do remove people from the business but you don't just put anyone behind the application. You have to put real people that have been there and are willing to embrace the use of the technology. You need to have local input from your customer and need to have the customer on side. It's not always the customer who owns the technology, you can introduce the technology into their business. In today's transport industry people are wanting more and more time window constraints on their deliveries – deliveries into 4 hour windows, 2 hour windows, etc.. You've got to have some of the smarts of the black box behind the scenes to work out a schedule with tight time windows. A person with a piece of paper just can not do that, they can not provide the customer service that the customer expects.

Fleet analysis and modelling is another aspect that's important to us. What are our vehicles doing? Are we getting the best capacity loaded? Are our customers getting the best value? In our different businesses there are different applications. Yes we use Transit and some of our businesses don't use Transit even when it's in there. It goes back to culture and getting the people to use the product and use it efficiently. It will remove people from the business too – you don't need to have four people behind a desk routing. You have one person and their time is spent doing the maintenance, the routing tools that we have today route 50-60 trucks in half an hour and you'll have great routes. It's the maintenance behind the system where the time has got to be spent.

When you introduce a routing package, it's not just that it's a great optimising package, it's the value-add that you can do for your customer. Your customer has to be on board since they will have to make operational changes in their business to make everyone more efficient: the drivers, the pickers. Routing and scheduling systems drag costs out of people's businesses.