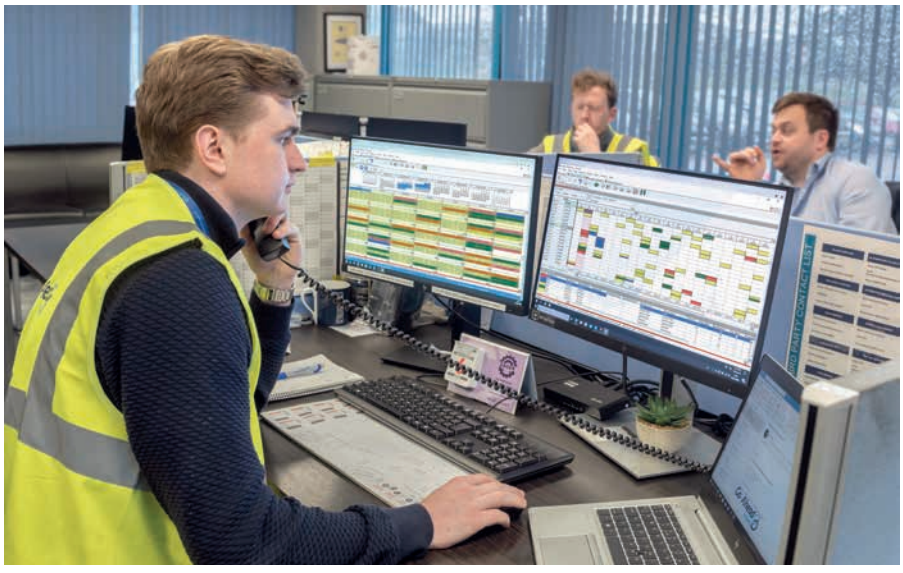
Go-Ahead Ireland operates bus services in and around Dublin. Four years ago, it embarked on an ambitious IT integration programme to transform the management of its fleet, plant and equipment

ALL SYSTEMS

Looking back over the programme, Go-Ahead Ireland engineering director Chris Stringer says: "From the outset we have taken a holistic view to information technology knowing that we really needed a single view of everything going on. By introducing the latest digital technologies and integrating all of our systems, the aim is to gain a one-click view of every part of the operation. We're now well-advanced on building a core asset management system that provides company-wide visibility of the status of our assets and, through business analytics, it gives the company a really good insight into the costs of running the fleet."

In 2018, it started the programme based around software from Freeway, which was first implemented to manage the fleet of 217 buses. However, that soon spread to 1,100 other assets – ticketing machines, workshop equipment, GPS trackers and an array of facilities-related items. The software schedules inspections and staff use tablets to ID-scan each asset before completing digital reports, ensuring correct procedures are followed and any compliance is in order.



To achieve a centralised point of access for all information, integration between different systems is crucial, and the first task was to align the Dublin operation with Go-Ahead at a corporate level, Stringer says, so it integrated Freeway with Go-Ahead's core financial and bus operations systems Oracle and uTrack.

In addition, the operator says it has made some advances in managing parts and purchasing, and is again using Freeway to help with that, he adds. "With this digital system, it's now possible to monitor performance and costs over time, from entire vehicles right down to individual components. We can now start to ask questions and make better-informed decisions about which parts to purchase and at what price. Plus, we can get stock levels right and avoid out-of-stock situations arising. Being able to build a lifecycle of parts is, in my view, the 'Holy Grail' of fleet management. That's what we can do now, and our aim is to build a system modelled around aviation, where everything is very tightly controlled; there is no room for error

"Since the system doesn't just relay the dash alerts but continually monitors sensor outputs, we are picking up low coolant level problems about an hour before the dash warning light comes on to alert the driver"

Chris Stringer

in that industry. It's a case of being proactive rather than reactive, and that's the ultimate aim for us."

To deal with the data mountain, for in-depth analysis and reporting, the operator exports data to Microsoft Power BI. "For the first time we are getting a real insight into the performance of the fleet. As well as the intelligence on individual parts, we can see how vehicles perform; for example, the distance between breakdowns and cost per kilometre. We can also assess lost mileage and component reliability, so we are gaining a real insight into how we are performing and where we can improve."

LIVE DATA

Further integration work is now focussed on capturing live data from vehicles and drivers. It has adopted Stratio, a platform that provides live data from vehicles via CAN-Bus allowing the fleet to be monitored remotely. That software's automated reporting function monitors key metrics and shows vehicle faults before the driver receives any dashboard warning, according to Stringer. "We have a goal of zero breakdowns, and by building data of faults logged, we can take a proactive approach to repairs, with a plan to develop a fully predictive maintenance regime. It gives our engineers the upper hand with real-time intelligence that prevents vehicle failure and passengers being impacted."

He reports that, since implementing the system in spring 2022, it has reduced breakdowns by 50%. When it was rolled out on the single-decker fleet, the system generated 1,400 alerts from on-board sensors in just four weeks – information that was sent on to the bus manufacturer to consider rectifications.

That's not all. "Since the system doesn't just relay the dash alerts but continually monitors sensor outputs, we are picking up low coolant level problems about an hour before the dash warning light comes on to alert the driver. So, we have been able to get the buses off the road and fixed; previously we'd not have known about it until it was too late."

SCHEDULING

Through the uTrack integration with Freeway, operations have visibility of workshop schedules and unplanned VOR situations, which minimises the likelihood of unforeseen interruptions to services. Drivers also report defects via uTrack while out on the road. The next stage is to capture defects reported by drivers during their walk-around checks. It is also looking at the wheel-loss prevention system Wheely-Safe with the intention to gather wheel and tyre pressure data through the telematics interface.

The engineering director concludes: "As we go along, we suddenly realise there are very significant unforeseen benefits of all this integration. The ultimate aim is to understand costs; with a mixed fleet of older and newer buses as well as diesel, hybrid and new electric models, gaining a truly comprehensive insight into lifecycle costs is our objective. We can then take better-informed decisions using what we feel will be the bus industry's most comprehensive management information system.

"Our mission is to move away from reactive maintenance and be entirely proactive. We can now make decisions based on the whole life of a vehicle, as we now really understand the cost. It's that knowledge and then control over costs that we see as the things that will have the greatest impact. I feel we've only just begun the route to automation and I don't think it will ever really end." TE