



**LEVERAGI  
TECHNOLOG**



# NG ON DGY

BY LIM HENG LOON,  
TAXI DRIVER, COMFORTDELGRO TAXIS

I remember it started off as just another normal day. I had picked up two middle-aged gentlemen from the East Coast of Singapore and dropped them off near town. It was, for all intents and purposes, an uneventful trip – until they alighted, that is.

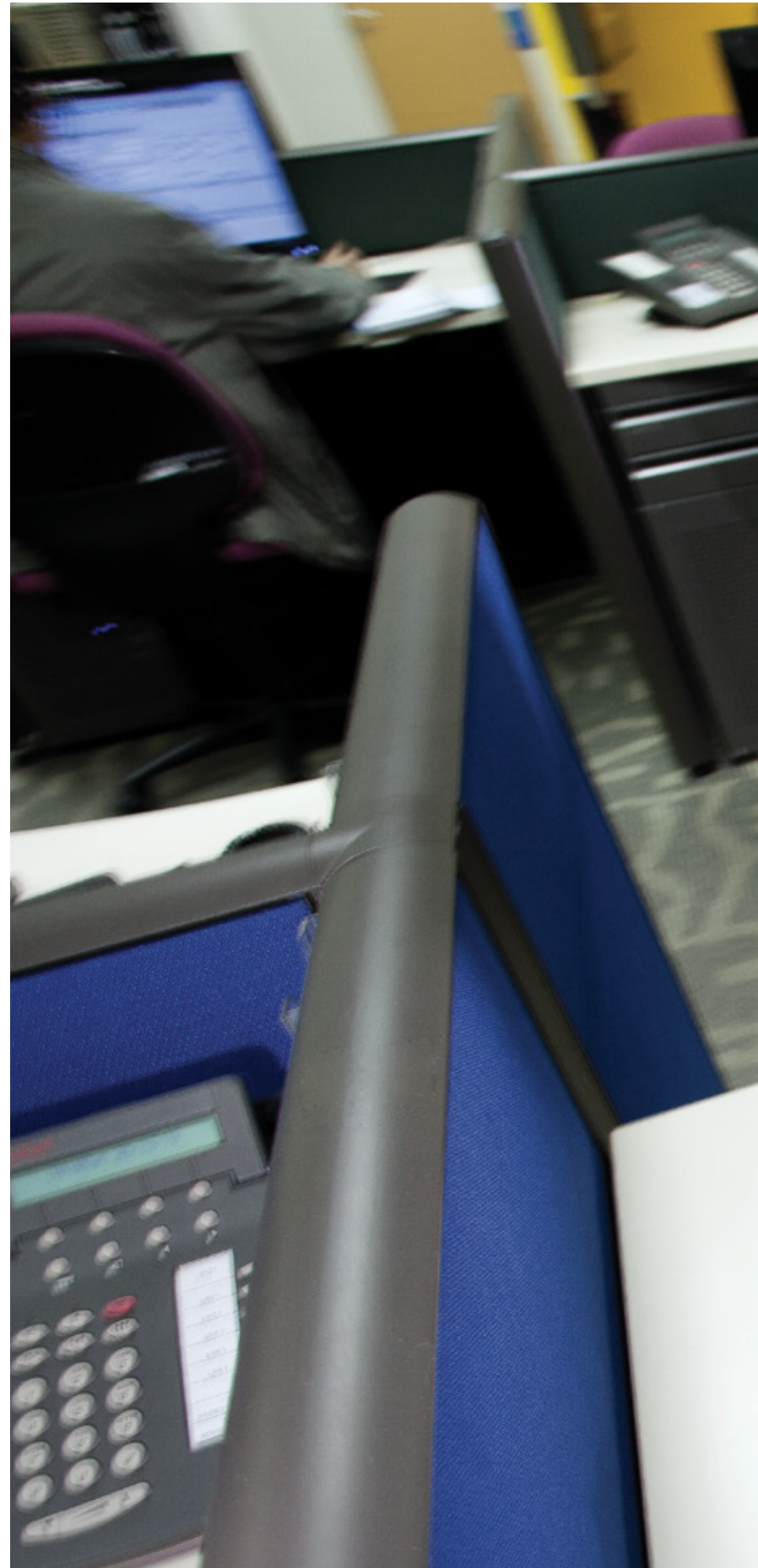
Within 20 minutes, I received an alert on my Mobile Data Terminal (MDT). It was a call for me to head towards a nearby police station. I figured something was wrong and did not hesitate to make my way there. There, I saw the same passengers I had just dropped off. They were frantically gesturing for me to open the boot of my cab.

When the lid popped up, they immediately reached for the small bag that was still in there and unzipped it. What I saw nearly gave me a heart attack – that nondescript bag contained several solid gold bars!

My immediate thought was: “Thank goodness no one opened the boot. And thank goodness the Company was able to track me down so quickly.”

Indeed, ComfortDelGro’s vehicle tracking system ranks amongst the top in the world. Going by the very officious-sounding name of Integrated Taxi Management System (ITMS), it uses the General Packet Radio Service (GPRS) to wirelessly connect the despatch system to its entire fleet of taxis in Singapore.

This means that the system can “see” me anytime, anywhere – making it easier for it to send me booking jobs that are closest to me. This ensures that I don’t waste time – and more importantly fuel – trying to satisfy booking jobs. It also means that I get to my passengers faster and that is very important in keeping them happy.

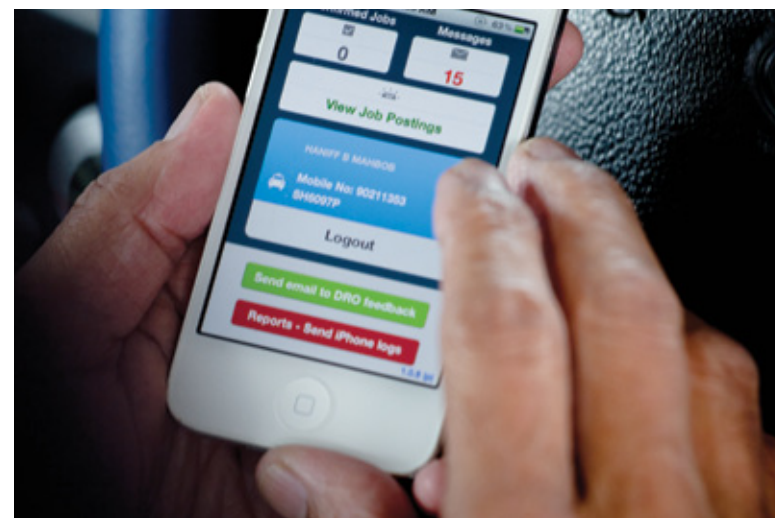


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We also have digital maps in our cabs that we can use to locate unfamiliar pick-up and drop-off locations. In an emergency, we can press the distress button and activate the voice recording feature in the MDT. The recording is transmitted back to the customer contact centre which can then alert taxis in the vicinity to render assistance.

Today, being a cab driver means being at the centre of the information superhighway. In my car, I can accept cashless payments, read messages on my MDT and bid for advanced booking jobs on my smartphone.

And when I can't get a fare within 15 minutes after entering the City Area in the evening, the system is able to capture the data and the Company reimburses me the Electronic Road Pricing (ERP) charge.

To be sure, I've gotten a lot savvier where technology is concerned – thanks to the many new services that the Company has introduced over the years. I get regular updates via email which I find extremely useful. From mundane stuff like new taxi stands that have sprouted, to useful information like when and where there are large events, I get all these pieces of information from the online superhighway. How cool is that?

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”





I'm also a frequent user of the Driver Portal which was set up specially for drivers like me to do our administrative stuff without having to make a trip down to the office. I can print out my monthly statement, submit entries for the internal e-CABBY contest (and hopefully win a prize), and even apply for the study achievement awards for my kids.

Technology is certainly a big part of my life these days – certainly a far cry from back in the days when everything was manual – even the cab I drove!

But, even as there are a lot more conveniences that have come about – thanks to the advent of technology, the fact remains that at the end of the day, driving a taxi is all about the human touch.

It's about that smile and the simple "thank you". It's about the friendly "good morning" and cheery "goodbye". And most importantly, it's about understanding your customers' needs – giving them space when they need it, and lending them that listening ear when they want it.



# TECHNOLOGY MILESTONES – COMFORTDELGRO TAXIS

Cashless payment on board taxis makes its debut in Singapore. All major credit cards and the Company's own charge card – the Cabcharge card – are accepted.

1995

2005

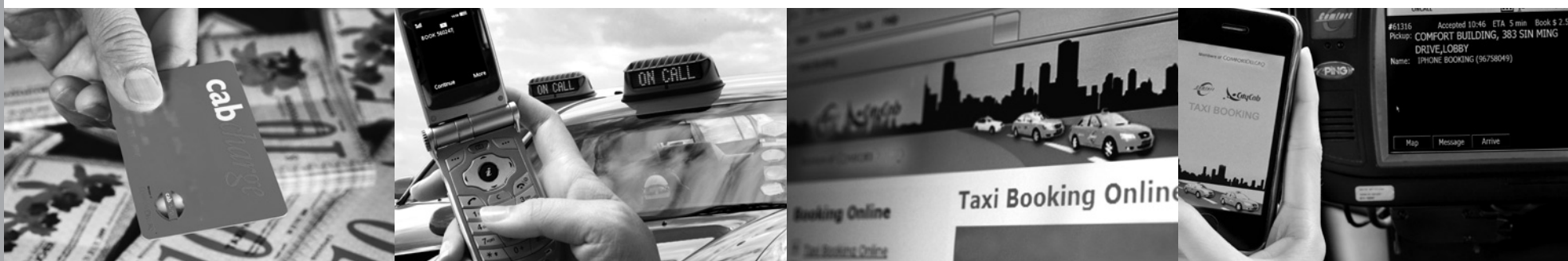
The Integrated Taxi Management System (ITMS), the world's largest General Packet Radio System (GPRS)-based taxi booking and despatch system, is launched. The system, which works on technologies such as GPRS, Global Positioning System (GPS), Text-to-Speech (TTS), voice streaming and intelligent algorithms, shaves waiting time for passengers. This also means more booking jobs and higher income for cabbies.

ComfortDelGro becomes the first taxi company in Singapore to accept NETS – a Singapore-centric debit payment system linked to local banks.

2006

2008

Taxi booking via Short Message Service (SMS) is introduced.



Online booking for taxis is introduced.

Job Bid App is introduced for cabbies to bid for advanced booking jobs using their smartphones.

ComfortDelGro introduces Near Field Communication (NFC)-enabled option for the FastCall taxi booking service – the first such service in Singapore.

Contactless cashless payment terminals, which also accept ez-link payments, are rolled out in the entire fleet of taxis.

The ComfortDelGro Taxi Booking App is extended to Android and Blackberry smartphones.



2009

2010

2011

2012

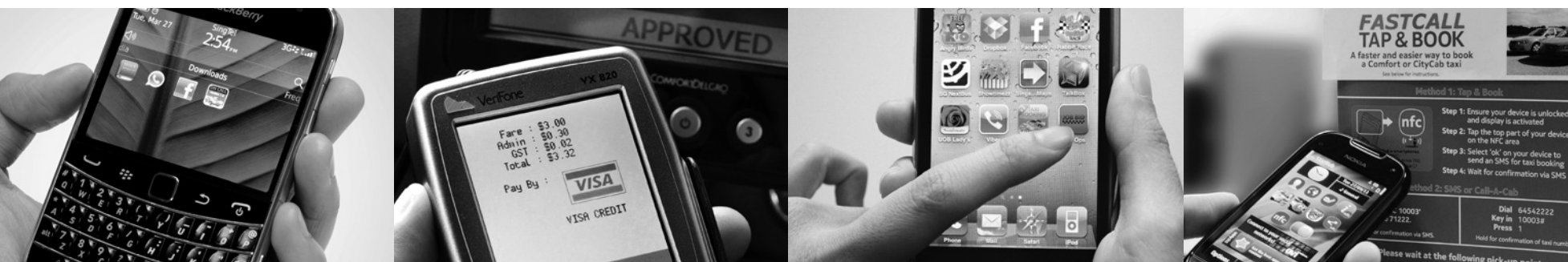
The ComfortDelGro Taxi Booking App is introduced for iPhones.

A new Driver Portal is launched for cabbies' use.

Overall automation rate across all data booking channels increases from 70% in 2008 to 85% in 2012.

Driver Portals with touch-screens are rolled out.

Record 30 million taxi booking jobs catered.



# ACCOLADES AND ACHIEVEMENTS – COMFORTDELGRO TAXIS

In 2006, ComfortDelGro Taxis was nominated for the National Infocomm Awards, a prestigious award that recognises companies for their innovative use of technology. It took home the Prestigious Engineering Achievement Award 2007 from the Institution of Engineers, Singapore, and was one of the top five companies to win the 2009 CIO Awards for its innovative use of technology.

In 2010, it bagged the silver award at the 2010 International Contact Centre Awards for its Text-to-Speech technology.

In October 2011, it won the “Innovation In Business” category at the 12th Annual Business Awards organised by the British Chamber of Commerce.

In February 2012, our taxi companies took the top spot for the “Best Taxi Company” category at the 4th AsiaOne People’s Choice Awards.

In the same year, the Integrated Taxi Management System received the merit award in the “Most Innovative Use of Infocomm Technology (Private-General)” category at the National Infocomm Awards.

Said Chief Executive Officer of ComfortDelGro Taxis, Yang Ban Seng: “To be sure, the advent of technology especially in the last decade or so – has improved the way in which our taxi services are operated. We have leveraged on technological advancements to improve our products and services offered to our customers such as cashless options and the very popular taxi booking smartphone applications. It is certainly an honour to have received recognition for these efforts.”



# HARNESSING TECHNOLOGY

WITH AN INTERNATIONAL FLEET OF ABOUT 45,800 VEHICLES, THE COMFORTDELGRO GROUP TRANSPORTS WELL OVER 1.5 BILLION PASSENGERS EVERY YEAR, TRANSLATING TO ABOUT ONE-FIFTH OF THE WORLD'S POPULATION.



**T**echnology is one of the main ways we capture efficiencies and push innovations. In fact, harnessing the power of technology is one of the key driving forces of the Group, as outlined in the Merger Document a decade ago.

We have invested millions of dollars in front-end and back-end systems, in a bid to improve the lives of the people we serve.

From integrated finance and human resource systems to advanced fleet management and scheduling systems, we have utilised improvements in technology to help us perform our daily tasks in a more efficient and productive manner. We have also leveraged on technological advancements to improve our product and service offerings to our customers, ensuring that commuters complete their journey safely, comfortably and quickly.



## TAXI

We have invested heavily in call booking systems for our taxi businesses worldwide. Relying on satellite technology, these systems are not only able to cut down on the waiting time for commuters but also assist drivers in route planning.

In the United Kingdom (UK), Computer Cab, London's largest radio taxi network with a fleet of about 2,200 taxis, rolled out its General Packet Radio System (GPRS)-based taxi "Advantage" booking and despatch system in 2008. The fleet of licenced London taxis across London was provided with the latest in-cab touch screen devices, complete with modern credit card payment facilities, on-board mapping and improved communications with the despatch call centre.

In China, we have also introduced technology in backroom operations. Taxi drivers in our Chengdu operations have, for example, been paying their daily rental fees electronically since 2004. This means that they no longer have to waste time going down to the office to make payment. In addition, fare collection becomes more precise as everything is done electronically and through the banking system.

### Taxi Smartphone Apps

We have launched the very popular taxi booking smartphone app in Singapore, the UK and Australia, enabling commuters to bypass the operator when they want to book a cab.

In Singapore, the ComfortDelGro Taxi Booking App was first launched in 2010 for iPhones. Subsequently, the App was also made available on Android and Blackberry smartphones.

Users who have registered with our online booking service can also log in to the Taxi Booking App to retrieve their last three bookings and book from any of them without having to re-enter the pick-up addresses.

In the UK, with the TaxiApp launched by Computer Cab (Aberdeen), commuters can now book a cab anywhere in the City with their iPhones. The TaxiApp registers the commuter's location via the Global Positioning System (GPS) and despatches a taxi to fulfil the job. The App bypasses the need to contact the call centre, resulting in quicker, fuss-free bookings. Following the success in Aberdeen, the TaxiApp has now been extended to Edinburgh and is being considered in other parts of the UK.





Similarly, ComCab in London has launched the ComCab App, which is available not only on iPhones, but iPads and iPods as well. It features a quick book function that enables commuters to book a cab with just three clicks. The ComCab App also allows registered users to link their credit cards to their accounts for easy, cashless payment.

In Perth, Western Australia, Swan Taxis successfully implemented a new vehicle tracking and despatching system for its entire fleet of taxis in April 2010. In January 2011, it launched a taxi booking iPhone App – similar to the one launched by our taxi companies in Singapore – allowing customers to bypass operators by booking a taxi via their iPhone. This new offering comes on top of other hassle-free taxi booking services such as Interactive Vehicle Response, SpeedCall, cabspot and Personal Mobile Location (PML) booking services. Its SmartCab App has proven to be a hit with customers, and has now been extended to other smartphone users, including those on the Android operating system. As a result, Swan Taxis registered a total of 6.2 million bookings in 2011.

In Ho Chi Minh City, Vietnam Taxi's call centre has an upgraded GPS despatch system which is one of the most advanced in the City.

# TAXI SMARTPHONE APPS

HERE'S A LOOK AT THE FIVE APPS THAT THE GROUP'S TAXI BUSINESSES HAVE LAUNCHED OVER THE YEARS TO MAKE TAXI BOOKING A BREEZE FOR COMMUTERS ALL OVER.

ICON			
NAME OF APP	COMFORTDELGRO TAXI BOOKING APP	JOB BID APP	
COUNTRY OF ORIGIN	SINGAPORE	SINGAPORE	
FEATURES	<p>Available for free download on iPhone, Android and Blackberry devices</p> <p>For current and advance taxi bookings</p> <p>Accessible to both registered and non-registered users</p> <p>Registered users can retrieve their last three bookings and book a cab without re-entering the pick-up addresses</p> <p>A tracking feature allows passengers to map the location of the taxi en route to the pick-up address</p> <p>Feedback channel for commuters provided</p>	<p>Available for free download on iPhone, iPad and Android devices; Available on Driver Portal</p> <p>Allows ComfortDelGro cabbies in Singapore to bid for advance booking jobs</p> <p>Programmed with digital maps, it helps cabbies plan their route to the pick-up addresses</p> <p>Provides a channel for the Company to disseminate news and information to cabbies</p> <p>Cabbies can feedback or send enquiries to Driver Relations Officers</p>	
			



### SWAN TAXIS SMARTCAB APP

PERTH, WESTERN AUSTRALIA

Available for free download on iPhone and Android devices

For current and advance taxi bookings

Locates pick-up location via GPS

Tracks the location of the assigned taxi en route to the pick-up address

A fare estimator helps passengers make informed decisions

Locates nearby taxi ranks

Sends notification with vehicle number to passengers when assigned taxis are within 250m of pick-up address



### TAXIAPP

ABERDEEN, UNITED KINGDOM

Available for free download on iPhone only

For current and advance taxi bookings

App registers the commuter's location via GPS and despatches a taxi to fulfil the job

Allows users to tap onto deals and vouchers offered by local merchants



### COMCAB LONDON

LONDON, UNITED KINGDOM

Available for free download on iPhone, iPad and iPod

For current and advance taxi bookings

Quick Book function allows booking with just three clicks

Accessible to both registered and non-registered users

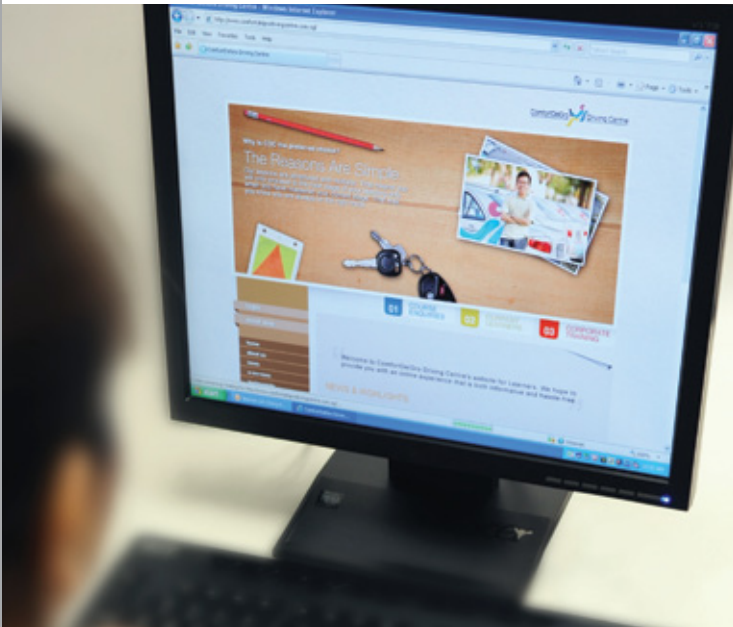
Registered users can register credit cards for easy, cashless payment

Allows users to add pick-up and drop-off addresses in "Favourite" for easy reference

Tracks the whereabouts of the taxi on the map







## BUS

In 2007, Metrolino invested £500,000 to convert an old DVD and CD covers manufacturing warehouse in Perivale, West London, to a state-of-the-art engineering workshop. The facility can handle up to 37 buses at any one time as compared to just eight which the old facility was able to. The Central Engineering and Logistics Facility, or CELF as it is known, uses the industry's latest technology and machinery, utilising hi-tech equipment such as Bluetooth-enabled vehicle lifts that need no trailing power lines.

In 2009, ComfortDelGro Cabcharge in Sydney rolled out a new bus scheduling system which automatically schedules bus trips, optimises bus usage, maps out routes of services and manages manpower hours. In 2011, an elaborate Enterprise Resource Planning system for finance, human resource, bus operations, including driver rostering, fleet management, engineering and depot management, was put into place. A similar system will be installed in its Melbourne operations.

### Drive Assist (UK)

Bus drivers across Metrolino's garages have a special "friend" they can rely on to always be honest about their driving skills.

After the end of each drive, they log onto the system and listen to feedback given by their "coach" – an electronic software on board the bus which tracks their performance during their hours on the road. Called Drive Assist, the system acts as an early warning system – reducing the risk of being involved in an accident or receiving poor reports from the Driving Standards Agency or our internal Safety Standards Team.

Drivers can also see how they measure up in the league table of best drivers. Drivers with the best Drive Assist scores each month get a special bonus. This is a fun way to maintain a very serious message to drivers – that safe driving throughout the whole journey is vital.

## PROCESS FLOW

In 2004, the Group faced tight labour conditions and external cost factors such as the rising price of oil. It needed to find savings and increase efficiencies – and one of the most successful and dramatic ways it did this was to reinvent its engineering processes and to automate its operations.

The main idea was to tackle the high volume of data which needed to be manually entered into the system – which was not only labour intensive and tedious, but also error-prone. So the team decided

to devise a system that could ride on its current system, but enhanced it with new technologies such as bar-codes, smart cards, hand-held computers, kiosks and wireless connectivity. It introduced a real-time system that aligned itself electronically with bus engineering processes, displacing the traditional paper-based process flow. This was done by automating and streamlining most of the bus engineering business processes, including staff attendance, bus maintenance and repair, workshop store and central store management. The two-year project involved about 500 staff, five workshops and their respective stores and the central store.

By its completion in 2006, the project had reduced manpower costs by about S\$1 million annually. There was also savings of S\$1.3 million a year for warehouse storage which came from optimising store operations. Over the longer term, it will have laid the foundation for further gains as new applications can be added on seamlessly. More importantly, there is greater staff satisfaction because of a better working environment and a faster turnaround time.

## OPERATIONS

Other businesses have also tapped on technological innovations to enhance productivity.

### Shaving Time

ComfortDelGro Engineering developed a first-of-its-kind electronic job (e-job) card system in its Braddell taxi workshop in 2010. The system, which calculates average waiting time and creates job cards at the touch of a button, eliminates the need for manual entries. As a result, cabbies are attended to more promptly and their waiting time shaved by half. Three other workshops switched to this e-job card system in 2011.

As customers become more IT-savvy, ComfortDelGro Engineering's SPARK Car Care™ also developed an iPhone App, which enables customers to make appointments for maintenance checks, and provides them with a step-by-step guide on how to file accident reports online.

To keep abreast of new testing technologies, the VICOM Group's non-vehicle testing business has also invested in a new testing facility, which will improve the turnaround time for material and product-testing significantly. It has also developed more testing services, including setting up a new electrical calibration and testing laboratory.

## ONLINE

ComfortDelGro Driving Centre has self-service kiosks and online booking facilities which make driver-learning all the much easier. There is also an e-learning portal which allows drivers to access driving theory lessons from home. This initiative saves them the hassle of travelling to the Centre to book and attend lessons.

## ENVIRONMENTAL

Our efforts at preserving the environment also extend to our offices. In our head office in Singapore, for example, the last person leaving the office doesn't have to switch off the lights.

The Energy Saving System or ESS takes control of lights based on the clocking in and out by employees. When the first person enters the office, all lights in the essential area will be turned on automatically. An office is divided into several zones. Staff working in the office are allocated to one or multiple zones according to their workstations. As such, lights are progressively turned off as staff leave their respective workstations. When the last person goes out of the office in his or her zone, all lights in the essential area will be switched off automatically.

A simple idea that helps any office turn Green – and switches off that nagging feeling that you forgot to turn off the lights.

