High Visibility Down Under: Bing Lee Reinvents its Centralized DC with Wireless Technology and Intermec by Honeywell CK3 and CN50 Mobile Computers

In 1957, Bing Lee and his son Ken co-founded the company that bears his name. From its humble start as an electrical repair business in Fairfield, New South Wales, Bing Lee grew into one of the largest family-owned electrical retailers in Australia.

Bing Lee’s central distribution center services the company’s 39 stores. In addition to providing next day direct to home deliveries in the Sydney Metro area, the facility also coordinates stock transfers between all stores – leading to a number of logistical and technical challenges.

Initially operating manual paper run sheets, it was clear Bing Lee needed a more efficient system to improve stock accuracy and track and trace all products and orders for direct to home deliveries. Instances of lost or misplaced inventory also made it apparent that stock transfers needed improving – from warehouse-to-store, and store-to-store – from the time an order was placed to the time of signature proof of delivery on receipt by the customer.
Going Wireless to Develop a Modern Mobile Delivery System

In 2007, Bing Lee required a new warehouse management system for their newly built retail superstore and distribution center. Gamma Solutions began discussions with Bing Lee to provide a wireless bar code system using Intermec® by Honeywell CK3 hand-held terminals and a Cisco wireless infrastructure. During this time, Paperless Warehousing (a software partner of Gamma Solutions) developed and implemented an innovative warehouse management system for the distribution center that went live in 2008. Based on the successful warehouse management system and Gamma’s familiarity with Bing Lee’s terminology and operating practices, it was a natural progression for Gamma Solutions to develop a technology solution to address their “track and trace” delivery needs.

In short, Bing Lee required a direct from DC to consumer solution that could be used for its online and retail operations.

“Our first step was introducing Paperless Warehousing to a partner of ours, Interdev, who specialize in mobile software solutions,” said Glenn Batten, Northern Region Sales Manager of Gamma Solutions.

“…with Paperless Warehousing’s warehouse management system integrating with the new solution,” said Michael Atallah, Managing Director of Gamma Solutions.

This modern mobile delivery system replaces the manual paper run sheets used by warehouse staff, contract delivery, and transfer drivers, with Intermec by Honeywell CN50 handheld computers. CN50s communicate with existing RF access points via Wi-Fi. This lets mobile personnel use the 3G wireless network to send accurate information dynamically from the road to devices in the warehouse.

According to Bing Lee’s Warehouse Manager Ken Poole, the benefits of the new system are clear.

“Mobile computing using the Intermec by Honeywell CN50 allows us to dramatically reduce stock losses by accurately tracking and tracing stock movements within the supply chain, as well as digitizing the proof of delivery process – ensuring greater accuracy,” said Poole.

Gaining Greater Stock Control and Driver Visibility in Real Time

In Bing Lee’s new stock delivery system, drivers now scan all items going onto their truck for delivery. To increase accuracy during the loading process, the system’s software then warns the driver if he has not scanned all items scheduled for delivery, or if he scanned items that are not meant for his load. If a driver is unable to load an item due to damage or limited availability, for example, then he selects an “unable to load” reason from a drop-down list in the application. A built-in safeguard then requires a warehouse supervisor to enter a unique authorization PIN to confirm.

After loading, drivers on home delivery runs enter a delivery window (two hour blocks selected from a dropdown list) against each delivery location. Once loading is complete, the driver then selects “depart warehouse” and all loading details are sent back to the DC’s system.

When drivers arrive at each delivery location, they scan off items, collect signature proof of deliveries, and depart. Again, the DC’s system is dynamically updated as this occurs.

Drivers can also record in the application when they are unable to deliver items. On selecting “end of day,” the warehouse management system is informed of the “unable to deliver” items, which are then rescheduled for delivery another day.

When loading store transfer items, the driver has two options in the application: if the destination store is on his current run, he can indicate that he is going to deliver the transfer item(s) himself. Alternatively, he can indicate that he will return the transfer item(s) to the warehouse for delivery the following day.

On return to the warehouse, the driver must unload all items on his truck. The stock delivery system’s application has an inventory of items on-board that the driver entered into the system as unable to deliver or for store transfer.

If an item is not there for unloading, the driver must select an “unable to unload” reason and have a warehouse supervisor enter an authorization PIN. When scanning items to unload, the
application communicates directly with
the back end system (which also knows
exactly what is on board the truck due
to the dynamic updating throughout the
day). Then the driver is told which bay to
unload the item into, based on the runs
created in the system for the next day.

**Customer Service Gets a Big Boost, Too**
The greater visibility of drivers from the
DC, plus more comprehensive and
up-to-date data logging, has also enabled
Bing Lee staff to provide far greater
customer service. Real-time information
is now available about any driver delivery
problems. And dynamically updated vehicle
movements make it easier to provide
customers with estimated times of arrival.

With accurate, up-to-date information
at their fingertips, staff members have
reported that they are better equipped
to answer questions about deliveries.

“While we invested in a mobile delivery
system primarily to enable greater
visibility of stock movements, much of
the ROI comes in the form of customer
service benefits, which are difficult to
put a dollar figure on. The system has
provided large benefits by reducing the
number of stock losses we incur, as
well as reducing labor costs associated
with looking for proof of deliveries on
manual run sheets,” said Poole.

**Planning Forward to Expand ROI**
In the future, Bing Lee plans to expand
the level of return they get from the
solution. In fact, the company has already
received an increased profile from its state
of the art technology implementation,
winning the Supply Chain and Logistics
Association of Australia’s (SCLAA) NSW
Supply Chain Management Award.

“The data reporting is still being
developed,” said Poole, “There are
many areas that remain untapped and
we’re expecting the full benefits of the
system to be realized as we begin to
investigate how we can use all the
information that is being gathered.”

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