



NOTTINGHAM TRAMS (NET) – REPLACING AN EXISTING TRAM NETWORK

cammamax



IN 2019 NOTTINGHAM TRAMS BEGAN DISCUSSIONS WITH CAMMAX AND FOUR OTHER SUPPLIERS ABOUT THE POSSIBILITY OF UNDERTAKING THE MAMMOTH TASK OF REPLACING THE EXISTING TRAM TVM NETWORK WITH 118 NEW MODERN TVMS.

After initial conversations, a tender was released to the market and after many months of work and discussions, Cammax were successfully awarded the contract to begin the challenge of manufacturing and replacing all the existing TVMs on the tram network.

The Tram network is an essential part of infrastructure in Nottingham aiding in the regeneration of six major areas. The Tram serves two of the three biggest employers in the Greater Nottingham area and also provides access to 20 of the 30 largest employers serving around 55,000 employees.





“THE ADDITIONAL FUNCTIONALITY OFFERED BY THE UPGRADED TVM’S HAS CERTAINLY BEEN WELL RECEIVED BY CUSTOMERS AND WILL HELP TO FURTHER FUTURE-PROOF NOTTINGHAM’S TRAM NETWORK.”

Joanne Bentley
NET Head of Customer Service

The Challenge

Pre-Covid, the new tram lines carried 19 million passengers per year. This high-quality access to affordable public transport is a huge benefit for Nottingham residents and as such is highly utilised. The existing Tram TVM’s had been in situ for many years and were reaching the end of their expected service life.

The challenge for Cammax was to replace the existing TVM’s however the requirement from NET was that the new high security cash TVMs needed to be housed in the existing NET Totems which were already in place surrounding the incumbent machines.

This meant that Cammax needed to redesign the housing of our Smart Ticketing TVM so that it could fit into the existing street furniture Nottingham Trams already had in place. These limitations on dimensions, aesthetics and functionality meant that the Cammax design team worked tirelessly perfecting the bespoke design that could be seamlessly incorporated in the existing street furniture.

By incorporating our existing High Security TVM into a new stainless-steel housing, Cammax delivered the exact requirements set by the Trams, a challenge that very few other companies would be willing to take on.

The TVM incorporates



High Level monitoring and alerting systems



Anti-Vandal features, reinforced panels and keyless entry



Market leading mechanical security



Rugged cash handling for high-capacity use

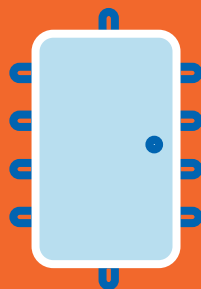
The Requirements

Due to the high volume of cash transactions and the unattended locations the TVMs are installed in, it was vital that the units could stand up to rigorous usage and also deter attempts to vandalise and steal cash from the units.

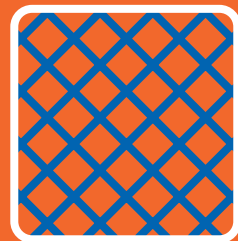
The high security TVM was re-housed in a bespoke housing for NTL however it retained all its security features such as ten-point locking system, re-enforced armoured panels, drill detect plates and a range of alerts and sensors provided by the monitoring module.

The monitoring module which is included inside the unit helps NTL and Cammax monitor the status and wellbeing on each unit in real time. Status and alerts are all fed back to a central system which notifies the maintenance team of any jams, unexpected movement and any unusual behaviour which would indicate possible damage or degradation of service.

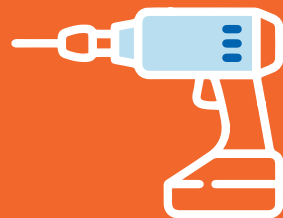
The high security TVM



Ten-point locking system



Re-enforced armoured panels



Drill detect plates



Range of alerts and sensors



Why Cammax

As a market leader in the design, development and supply of payment systems, Cammax were able to demonstrate an impressive track record of the successful delivery of a number of large payment and Smart Ticketing projects for local authorities and other organisations. These projects encompass customised payment and ticketing software as well as payment machines tailored to exact client needs, implementation services as well as dedicated support and maintenance services to support their partners throughout.

Cammax have been working with Nottingham City Council for a number of years and have a track record for delivering highly innovative systems such as the 120 Nottingham City Council Bus Ticketing Kiosks, deployed around the city selling the Robin Hood cards. The success of this system combined with Cammax's approach to challenging innovative requirements, made them the ideal partner to help NTL realise their goal of updating their estate's technological requirements. An additional benefit, whilst increasing the options for Smart Card users across the city, was incorporating the widely used Robin Hood Smart ticketing methods for all service users.



“THE PARTNERSHIP APPROACH TAKEN BY CAMMAX - AND SOME INNOVATIVE SOLUTIONS TO SEVERAL COMPLEX CHALLENGES - HAS HELPED TO ENSURE A SMOOTH TRANSITION TO THE NEW SYSTEM.”

Joanne Bentley
NET Head of Customer Service



Challenges

As with all innovative ideas, the bespoke and unique nature of the requirements can throw up challenges along the way and this project was no different. As multiple integrations were required, new partnerships were formed and working practises had to be aligned, which led to some delays in the initial scoping phase. Once all parties had

good channels of communication established, these challenges were overcome and the project picked up speed.

However, as workforces shifted their working locations and businesses adapted to the stresses and strains that the Covid 19 pandemic introduced, everybody pulled together and pushed ahead in spite of the difficult circumstances, with many of the project deliverables delivered on time.



Implementation

When a project involves multiple stakeholders of both new and existing systems, it is vital that the integrations are carefully scoped, developed and tested. Throughout the process, Cammax worked closely with the tram operator, Nottingham Trams Limited

(NTL) and NET concessionaire Tramlink Nottingham and the Council to ensure all of the system functionality originally requested, and some new functionality that was asked for on the journey, was delivered as part of this project.

Cammax have extensive experience in delivering Smart Ticketing payment Systems at hundreds of locations across the UK. The delivery and implementation of Cammax's products and services were driven by one of our dedicated project managers, who in turn was supported by an in-house project team. The Project Manager worked closely with the NTL project team and the other suppliers involved at every stage of the process from the detailed design, manufacture, testing and installation all the way through to final commissioning. The PM attended weekly project meetings and personally oversaw the installation from start to finish.

Outcome

The new TVM's have been well received by NTL and members of the travelling public and a recent survey showed that over 90% prefer the new machines to the old.



90%
of people surveyed prefer the **new** machines to the old.



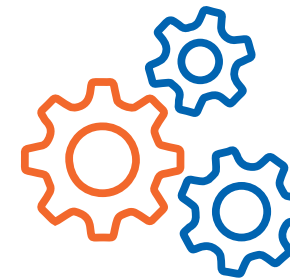


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System Benefits

INTEGRATED WITH
**PART 11
HOPS**



**REAL
TIME**
REPORTING
MONITORING



OFFERS
CUSTOMERS
ITSO
PRODUCT
COLLECTION



OFFERS A RANGE
OF **SMART
AND PAPER
TICKETS**



**SMART
CARDS
CAN BE
DISPENSED
FROM THE
TVM**



**HIGH
SECURITY
HARDWARE**

ALLOWS USER
**SPECIFIC
TARIFFS**
TO BE SET AT
DIFFERENT RATES



ALLOWS CUSTOMERS
TO PAY USING
**CONTACTLESS
CREDIT/DEBIT CARDS
MOBILE WALLET
AND CASH
IF REQUIRED**



ITSO
CERTIFIED



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