



SUMMARY

Mr. Johnson has over 8 years of technical experience, spanning disciplines which include software development, system design, project engineering, and technical consulting. He had previously led the technical delivery of the Clipper® card in Apple Wallet® and Google Wallet® as the lead engineer and has helped shape next-generation fare collection solutions for several transit agencies as a consultant. Mr. Johnson provides a wealth of experience in requirements development, system architecture, system integration, testing, and stakeholder management, and is focused on assisting transit agencies deliver high-quality payment systems.

EMAIL – anthony.johnson@clevorgroup.com
PHONE – (541) 636-1670

PROJECT EXPERIENCE

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| 2022 – Present | Key 2.0, Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA
SEPTA has engaged CCG to provide industry expertise and direction as they replace their existing Key 1.0 fare collection system. CCG has been tasked with developing a concept of operations, technical specifications for the Key 2.0 system, and supporting SEPTA through procurement and contract negotiations. Mr. Johnson was a key author during the development of the technical requirements for the software, hardware, and operational components of the scope of work and has been involved with the subsequent procurement phases. |
| 2021 – Present | Automated Fare Collection (AFC) 2.0 Implementation, Massachusetts Bay Transportation Authority (MBTA), Boston, MA
The MBTA is nearing the deployment of their modernized, account-based, fare collection system that will transform the payment options available to Boston’s transit riders. CCG has been supporting the MBTA’s AFC 2.0 project from the design phase, through implementation, and is leading the test effort to ensure all major system components are ready for production deployment. Mr. Johnson has been a key contributor to the design and validation of AFC 2.0 components, including the mobile solution, inspection solution, and the validation devices. Most recently, Mr. Johnson was tasked with managing a new project to enable interoperability between the new vendor’s (Cubic) devices and the legacy vendor’s (Scheidt & Bachmann) fare media to improve the customer experience during the system transition. |
| 2021 – Present | Ventra 3.0, Chicago Transit Authority (CTA), Chicago, IL
The CTA is currently upgrading their account-based Ventra system to leverage a cloud-hosted platform and transition its system interfaces to adopt a true open architecture design. Mr. Johnson applied his expertise in system integration to improve the vendor’s integration guides and supporting documentation. Mr. Johnson is currently leading the validation effort to ensure Cubic’s open architecture environment is tested and ready for third-party use. |
| 2021 – Present | PRESTO, Metrolinx, Toronto, CA |

Metrolinx began the work to replace its existing PRESTO system in 2021, which serves the Greater Toronto and Hamilton Area and is one of the largest and most complex systems in North America. Metrolinx tasked CCG with providing expertise on new technologies and services in the fare collection industry and developing the technical specification for their next-generation PRESTO system. Mr. Johnson designed the requirements capture process and leveraged our purpose-built tools to collect feedback from over 50 active stakeholders across Metrolinx and 10 partner transit agencies. Additionally, Mr. Johnson architected the back office and open architecture requirements, ensuring that Metrolinx receives the most innovative and best-in-class account-based fare collection solution.

2019 – 2021

Clipper® Mobile Fare Payment System, Cubic Transportation Systems, Concord, CA

This San Francisco Bay Area mobile solution includes an iOS app, Android app, new back office, and integrations into the NFC mobile wallets: Apple Wallet and Google Pay. The integrated fare payment system was launched under the Next Generation Clipper® (C2) contract in April 2021 in a little over two years, and serves nine counties, 24 transit agencies, a retail network (market share dominated by Walgreens and Whole Foods), and over 15,000 legacy fare rules. This truth-on-card, closed-loop system was the first major deployment of the C2 contract, intended to bring accelerated value to the customers and end-users of the 9-county bay area and serves as a staging point for the future truth-on-server, open-loop system. Within 2 weeks, the payment system was averaging over \$25,000/day in revenue on the iOS virtual card network alone.

As the Lead Systems and Project Engineer for the C2 mobile project, Mr. Johnson coordinated the technical delivery of the system, directing a team of 35 engineers distributed throughout San Francisco, San Diego, Germany, Australia, and India during the design and build phase of the iOS and Android mobile applications and the Azure cloud back office. He also facilitated technical meetings with external partners to ensure integrations into the Apple Wallet and Google Pay satisfied design requirements and deployments were delivered on time.

2016 – 2018

Singapore Thomson East Coast Line Automatic Fare Collection, Cubic Transportation Systems, San Diego, CA

The Singaporean Land Transport Authority (LTA) announced this line in August 2014 and is among the world’s longest driverless rapid transit lines. The medium-capacity Mass Rapid Transit (MRT) line plans to be opened in 5 stages, with stage 1 having opened in January 2020. When fully operational, the MRT line is expected to serve 500,000 – 1,000,000 commuters daily.

Mr. Johnson was the lead software engineer for the automatic gate subsystem provided by Cubic. He designed, developed, documented, and delivered the gate driver software to be integrated seamlessly into the LTA’s existing back-office control system. The project required close customer collaboration to ensure the 2-party system worked as intended to provide safe and efficient gate access to Singaporean transit riders. Mr. Johnson was recognized by senior leaders with the STAR Award for the timely delivery of the project critical milestone.

PROFESSIONAL ACCOMPLISHMENTS

2020

Values In Practice (VIP) award for demonstrating excellence in customer satisfaction at Cubic

2019

Cubic High Potential Program: selected among the top 2% of employees for exhibiting strong functional ability and exceeding job expectations

2018 | **STAR Award for exceptional performance relating to the on-time delivery of the Singapore TEL gate prototypes at Cubic**

WORK HISTORY

- 2021 – Present | **Director of Engineering, Clevor Consulting Group**
Mr. Johnson focuses on providing the technical expertise and services necessary to deliver high-quality and innovative payment systems in public transit. He has been a key technical resource in many of CCG's biggest and most complex projects and solutions.
- 2019 – 2021 | **Systems & Project Engineer, Cubic Transportation Systems**
Mr. Johnson's primary task was to deliver the Next Generation Clipper® (C2) program, which included the C2 mobile solution and the C2 retail solution which is planned to replace the legacy dial-up units at retail stores throughout the SF Bay Area. His technical skills and his ability to communicate efficiently and effectively earned the trust of Cubic's direct customer, the Metropolitan Transportation Commission.
- 2015 – 2019 | **Software Engineer, Cubic Transportation Systems**
Mr. Johnson began his professional career as a Software Engineer at Cubic and was promptly assigned to projects to work directly with Cubic's customers to manage design requirements, project scopes, and system verification criteria. The software projects he was responsible for primarily involved device software engineering which included low-level device drivers and higher-level device GUI applications.

EDUCATION

- 2016 | **Bachelor of Science, Computer Engineering, University of California San Diego, San Diego, CA**
Mr. Johnson earned a B.S. in Computer Engineering at the UCSD Jacobs School of Engineering