



# Decoupling TIO Networks Billing System from APIs with .Net DLL Middleware

TIO Networks serves the largest telecom, wireless, cable and utility network operators in North America. With more than 70,000 physical location endpoints to its bill payment processing network, TIO symbolizes fast, convenient and secure access to high quality bill payment services.

TIO integrates its Transaction Processing System to the accounting back-office of its billers which allows billers to post payments accurately and expeditiously to the appropriate customer accounts. Once integrated with a biller, TIO is able to offer to the billers' customers the ability to pay their accounts through multiple access points including self-service kiosks, POS (Point-of-Sale)/clerk-assisted locations, smartphone applications and more.

## LightHaus

Industry	Location	Employees
Financial Services	Vancouver, BC	<200

### Highlights

- Studied and analyzed bill payment system and API integrations and identify key technical issues.
- Completed a set of mini POCs to flesh out low-level design and identify and reduce risks.
- Developed a simulator to represent 3rd party clients and complete live testing.

## The Need

TIO Networks billing system integrated with customer APIs to tie payment kiosks, POS, mobile apps, etc. to their transaction service. Integrating new customer APIs was becoming a major challenge as each new API added to the overall complexity of the system. The client needed to decouple API integration from the core-processing engine, which was a risky, complex and time-consuming task.

## Key Challenges

- Study and analyze bill payment system and API integrations and identify key technical issues.
- Complete a set of mini POCs to flesh out low-level design and identify and reduce risks.
- Develop a simulator to represent 3rd party clients and complete live testing of the system.

## How Optimus Helped

API integration problems were beginning to affect TIO Network's ability to scale up their offerings in the market. Optimus recommended a solution for decoupling APIs from TIO's billing system using .Net DLL middleware. This was accomplished by following a well-defined process:

1. Initially, Optimus worked closely with the client's development team to create the solution that would meet the long-term technical and business goals of the client.
2. Key technical issues were identified in the analysis phase. Architecture capable of handling all of those scenarios was created and approved by the client. A set of mini POCs fleshed out with low-level design was then created to identify major development risks early in the project.
3. The development and test team took particular care of properly handling the non-functional aspects of the application. The integration with 3rd party users was achieved using web services. The performance targets were clearly laid out and validated by use of trace files created within the application code.

4. To allow proper testing and demonstration of the middleware developed, Optimus also created a simulator representing the 3rd party clients.
5. The project was executed in an agile manner. This allowed regular validation of the functionality, technical design and coding standards throughout the project. The final proof of effectiveness was demonstrated by successfully integrating a 3rd party client.

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*"Optimus has successfully paired local professional management with the scalability of a highly skilled offshore team. Using this model, Optimus consistently delivered high quality software development and automated testing services on time and on budget. I would recommend Optimus to any company who is looking to outsource an IT project."*

**Laurent May**

VP, Product Development

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## The Result

At the end of the project Optimus had successfully decoupled the APIs from TIO Network's core processing engine. This was a risky, complex and time-consuming project. Optimus was able to identify risks early on and completed a series of mini POCs to reduce these risks. Furthermore, Optimus completed a significant amount of testing throughout the project to validate functionality.

## About Optimus Information

Headquartered in Vancouver, Canada with delivery centers in Canada and India, we work as a trusted partner to medium and large businesses to solve their software and technology challenges. With a team of 150+ people Optimus Information provides global organizations with scalable, flexible and cost efficient solutions. **Optimus Information provides global reach with a local presence.**

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