



Mantaro Product Development Services Company Profile

Mantaro Networks provides a full range of product development services to our technology clients. Our technical staff comprises highly talented professional engineers with a history of successful product development and innovative design experience. The Mantaro team has many years of industry expertise with leading companies that develop telecommunications systems, software applications, semiconductors, and test and measurement instrumentation.

Our team is composed of over 50 professional engineers who hold degrees in either Electrical Engineering or Computer Science and includes several holding Masters, and Doctorate degrees.

The engineering staff is equally balanced between hardware and software engineers. Whether it is designing a new high-speed interface for a client's existing product line or developing a product or system to address a new market opportunity, Mantaro can provide a solution to meet the challenge.

Our areas of applications expertise include:

- Embedded Software Systems
- Telecom Switching Technology
- Digital Signal Processing
- Signaling and Control Systems
- Test and Instrumentation
- Carrier test equipment and systems
- Wireless Communications Systems
- Element Management Systems (EMS) and diagnostic systems
- Evaluation Platforms and Reference Design

Mantaro is dedicated to providing the highest quality designs using the latest technology. To stay at the leading edge, Mantaro has partnered with the leading PLD manufactures to ensure we meet their design requirements. By partnering with Altera and Xilinx, Mantaro has access to the latest technical information and specialized support teams.



Mantaro maintains its headquarters and lab facilities in our Germantown, Maryland location. Mantaro's lab environment fosters the continual professional development of our staff and allows us to leverage our collective development experience and established methodologies to reduce both the time and costs associated with delivering high quality products. Mantaro's processes are based on our commitment to excellence and grounded in maintaining a close partnership with our clients throughout all phases of a project.



Mantaro Product Development Services

Case Studies

Capitalizing on an Investment

A leading network equipment manufacturer (NEM) had made a substantial investment in an advanced, high-speed network processor. The product addressed a very small market segment and all of the potential customers had specified a variety of applications. Many of these customers were willing to fund development of new products and the NEM quickly found itself short of resources to meet demand. To capitalize on their investment and avoid leaving any opportunities on the table, the NEM turned to Mantaro to develop line cards to meet their customers' needs. Utilizing an existing chassis with a backplane that could support the necessary speeds, Mantaro developed an application specific line card. Mantaro was chosen because of their experience with high speed board design, their FPGA design capabilities, and their experience developing EMI standard complaint products. During the development process, the customer was kept updated with reports, virtual meetings, and on-site design reviews.

Expanding Number of Addressable Markets

A \$100 million network equipment manufacturer (NEM) operating internationally wanted to increase sales and profitability of their product lines by finding new markets and applications. These products were developed for next generation carrier class VoIP networks. Due to the market slow down, the number of carriers who were aggressively investing in VoIP was small and the demand for the NEM's product was even smaller. Continuing to be persistent, the NEM found an opportunity to adapt their products so that they were interoperable with their customer's existing networks. By partnering with Mantaro, a next generation VoIP services interface was developed that would seamlessly integrate into the customers' existing carrier class switches. This allowed for a viable business case and customers were soon able to reduce costs, offer enhanced services, and continue to lay the groundwork for a full VoIP migration. Mantaro was chosen because of its expertise with telecommunication protocols and embedded software. During this process, Mantaro was viewed as a partner by the NEM for its teamwork, expertise, and responsiveness.

Customer Specific Product Development

Adapting a solution to work with a customer's system is a typical challenge for a manufacturer. When developing a solution that will be deployed to every end user, cost and reliability become even bigger issues. This manufacturer found a reliable partner in Mantaro. The end product was a device that would be compatible with each customer's system providing statistics about each end user. A reusable hardware solution was developed and leveraged across multiple customers, while the software would have to be customized for each customer. Mantaro developed a solution which met the manufacturer's strict technical specifications which included power consumption and heat dissipation requirements. The software also had to be extremely stable since the device was not serviceable, had to be controlled remotely, and must operate 24/7/365. The manufacturer was also interested in making sure the cost of this customization would be covered by the customer. Utilizing Mantaro, the development cost was clear and could be easily passed on to the customer. With this partnership, the manufacturer could focus on its core business and provide solutions for each of their customers without having to hire additional staff or absorb the cost of the custom development.