

CA Unified Infrastructure Management (CA UIM) Powers YJT Solutions' Managed Services at University Mock Trading Floor.

To fulfill its mandate, the Master of Science in Financial Engineering deployed a mock trading floor.

To most effectively fulfill its educational charter and meet the increased industry demand for financial engineers, the Master of Science in Financial Engineering (MSFE) degree program at a large midwestern university developed a complete, fully functioning trading floor.

The trading floor needed to have the same software applications and capabilities that one would see at major investment banks, which meant the system needed to be available around the clock, every day.

CLIENT PROFILE

Industry: Education

Name: Large Midwestern University

100%

Percentage of MSFE students that obtained internships at top-ranked financial services institutions.*

Challenge

The MSFE's trading floor infrastructure and services needed to be highly responsive and continuously available in order to ensure a quality learning experience for students.

Solution

The MSFE program turned to YJT Solutions, which had the industry and technical expertise and robust support services required for this demanding trading environment.

Benefits

Through its partnership with YJT, the program was able to realize optimal service levels, deliver a better educational experience and boost funding opportunities.

The Challenge

A large midwestern university's Master of Science in Financial Engineering (MSFE) is a rigorous program for students who have goals of becoming risk management officers, derivatives analysts or traders. Guided by an industry advisory board with representatives from leading trading firms and financial institutions, the MSFE program focused on helping students become highly prepared for getting hired, and succeeding in, these roles.

To deliver a rich, pragmatic educational experience, and ultimately prepare students as effectively as possible for getting hired after graduation, faculty wanted to provide a fully functioning mock trading floor for students to work with. This effort was led by Dr. Mark Holder, the program director. A former trader, Dr. Holder had extensive experience working with trading applications. Dr. Holder wanted to deliver a robust trading infrastructure that would offer students the same experience as working on a real trading floor. The trading floor needed to be much more than a "computer lab" with trading applications. The trading floor needed to have the same software applications that one would see at major investment banks. To achieve these objectives, the trading lab had several critical requirements:

- **Responsiveness.** To provide a real simulation of the trading environment, the infrastructure needed to give students the experience of trading under pressure with rapidly moving prices. If performance was slow or sporadic, it would detract from the experience.
- **24/7/365 availability.** The trading application was set up to accept feeds from both US and European markets, which meant the system needed to be available around the clock, every day.
- **Fast support.** If a student in the lab encountered an issue, they needed fast response from a support representative. If an agent took two hours to respond, class would be over. With approximately 20 classes each semester, one lost course would represent a big percentage of students' learning opportunities.

While the trading lab was running in university facilities, the campus IT staff members weren't familiar with the unique nature of trading environments, nor the specifics of the applications in use. Further, they weren't equipped to support the around-the-clock nature of a trading lab. As a result, the MSFE program needed to look to an outside service provider for help in administering this environment.

The Solution

“We wanted the students who graduated from our program to have the best preparation possible for careers in derivatives trading and financial engineering. Having a fully functioning trading floor was the key to our ability to achieve this mission.”

Dr. Mark Holder,
Program Director, Master of Science
in Financial Engineering

Figure A

The university's trading lab featured real-time market feeds and ticker boards, providing students with an experience virtually identical to that in real-world trading environments.

Overview

Dr. Holder and the MSFE program enlisted the team at YJT Solutions to support the trading lab and its infrastructure. The team at YJT was uniquely equipped to provide the services, expertise and support the MSFE program required. YJT was able to offer the program and its students the following capabilities:

- **Trading application and infrastructure expertise.** YJT had deep expertise in architecting, deploying and supporting trading floor infrastructures and applications for financial firms. The team understood the intricacies of specialized trading applications: what components were included, how components work together, what's needed to have applications work correctly and what warning signs to look for. This expertise was essential in helping optimize the service levels of the MSFE's trading applications and infrastructure.
- **Service level responsiveness.** With its people, processes and tools, YJT could deliver the same service level agreements (SLAs) it provided to its financial services and trading clients, including responding to inquiries within minutes. Based on technical and domain expertise, the team at YJT developed systems that streamlined and sped remediation. For example, the team developed custom logic, so that, when their monitoring platform generated alerts, relevant content, including steps for resolving the specific issue, would automatically be pulled from the response procedure database and emailed to the assigned support engineer, so he or she would know exactly how to respond.
- **Support coverage.** YJT had the staffing and systems in place to provide support around the clock, 7 days a week and 365 days a year.
- **Adaptability.** Through its extensive expertise working in a range of client environments, the staff at YJT has demonstrated its ability to adapt to the specific infrastructures and requirements of each client, and this was also a vital need for the MSFE program. While the services required by the MSFE program were in many ways



“We chose to work with YJT Solutions because they had been proven to meet the demanding service level requirements of financial services and trading companies. Just like their trading firm clients, we needed them to respond in minutes—and they always met their commitments.”

Dr. Mark Holder,

Program Director, Master of Science in
Financial Engineering

similar to those needed by commercial trading firms, there were also some significant differences as well. The trading lab needed to function as a classroom, and to operate within the open environment of a university campus, rather than a purpose-built data center that a trading firm would have. Thus, for example, YJT needed to coordinate with a feed provider, ISP, campus staff and others to set up the dedicated, high-bandwidth connectivity the trading lab required for market data feeds.

Services Provided

YJT offered a broad range of services to the MSFE program:

- **Comprehensive monitoring.** Leveraging their monitoring platform, CA Unified Infrastructure Management, YJT was able to track all the key components and services within the trading lab environment, including networking equipment, such as switches and firewalls; Windows and Solaris servers; storage systems; security equipment; print and file services; environmental meters; and applications, including Microsoft Active Directory and Exchange as well as specialized trading applications like X_TRADER from Trading Technologies.
- **Response and proactive administration.** YJT handled any inquiries and requests from professors, staff and students. When notifications of issues were received, YJT staff followed up to diagnose and resolve them. Also, YJT staff took responsibility for monitoring infrastructure in an ongoing effort to pre-empt and address potential issues before service levels were affected. In addition, they handled ongoing requests, for example, at the request of a professor, YJT prepared the trading floor for a particular market simulation.
- **Dashboards and reporting.** YJT delivered intuitive dashboards through a Web portal, which faculty, staff and students could access to get current status of the trading floor environment.
- **Ongoing maintenance.** YJT support engineers were responsible for doing onsite maintenance every six months, and did remote maintenance on a monthly basis.
- **User setup and training.** At the beginning of each new semester, YJT staff went onto the campus in order to help set up new students to work with the trading lab. YJT staff helped set up access for new students, worked with staff and students to answer questions and conducted training to familiarize users with the service and applications.
- **Architectural consulting and implementation.** After running the trading application for a couple years, the MSFE department turned to YJT to help lead a complete technology refresh. YJT managed the entire process, including analysis, design, procurement and implementation and installation. Also, they helped to deploy new infrastructure to support a special student project that required extra processing and significant storage resources. The data set for this particular project exceeded 8 Terabytes, requiring intense computational effort. YJT helped architect and deploy the infrastructure, including the network-attached storage and server required to hold and process data, as well as a powerful workstation capable of conducting the required analysis.

Solution Architecture

Following are some of the key elements that comprised the trading lab:

- Infrastructure:
 - Approximately 20 HP Proliant servers
 - Cisco switch and firewalls
 - Dedicated high-speed circuit for market data feeds
 - Data and ticker boards
- Applications and services:
 - Bloomberg Essentials Online Training Program, including Fixed Income, FX, Derivatives and Equities
 - CQG Integrated Client
 - EViews
 - Fundamental Analytics
 - International Securities Exchange’s PrecISE Trade
 - Market Data Feeds from Bloomberg, Eurex and Reuters
 - MathWorks MATLAB
 - Microsoft Active Directory
 - Microsoft Exchange
 - Morningstar Commodity Data
 - Patsystems J-Trader
 - Patsystems Pro-Mark
 - SunGard’s Valdi Options Solutions (formerly known as SunGard’s MicroHedge)
 - Trading Technologies X_TRADER

The Benefits

Through its partnership with YJT, the MSFE program realized several key benefits:

- **Issue avoidance and optimized service levels.** YJT delivered the same service levels that financial firms are accustomed to with their business-critical trading infrastructure and applications. Through its proactive monitoring, YJT staff was able to pre-empt issues before they hurt service levels. For example, YJT engineers received an alert about rising temperatures in the server room, and immediately followed up with campus facilities staff. They found that the facilities staff members had shut down the HVAC (heating, ventilation and air conditioning) system for maintenance, and were unaware that prolonged downtime could jeopardize systems in the high-density server room. By alerting them to the risks, YJT helped ensure facilities staff kept cooling at the levels required to support server infrastructure, and was able to help the MSFE program avoid a catastrophic outage.
- **Improved fulfillment of educational charter.** By delivering highly responsive and available service levels to faculty and staff, the MSFE program was able to consistently recreate the dynamics of a real trading environment, which helped the program better

fulfill its educational mission. The program was ultimately able to have 100% of its students gain acceptance to internships at such top-tier financial institutions as Chicago Board Options Exchange (CBOE), Credit Suisse, Eurex, Goldman Sachs and Nationwide Insurance.

- **Enhanced donor relations.** Like many other educational institutions, the MSFE department was highly reliant on donations for its ongoing operations. The trading floor became a regular stop for university summer tours, and was a boon for donations to the university.
- **Expanded revenue opportunities.** The trading floor also provided additional revenue opportunities for the MSFE program. The robust, responsive and realistic trading floor offered an ideal environment in which to deliver training programs for professionals already working in the financial services industry. Consequently, the department was able to extend these facilities to professional development courses, and so expand its potential revenue sources.

* Please note that, in September 2014, the product name in the original customer success story was updated from “CA Nimsoft Monitor” to “CA Unified Infrastructure Management (CA UIM)”

About YJT Solutions

YJT Solutions is a Chicago-based provider of IT project and managed services to businesses that depend on technology to be successful. YJT focuses on helping businesses avoid missed deadlines and IT outages while increasing IT efficiency and productivity. YJT specializes in helping Chicago-based businesses migrate their infrastructure to the cloud, augment IT projects and provide managed IT support around the clock.



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