# MIDNIGHTCODERS
## The RIA Company

# introNetworks
### smart social networks

introNetworks is a company that offers a Rich Internet Application which facilitates people connections through the creation of large categorized social networks. These connections enable better personal and professional development, team building, team collaboration and peer-to-peer support. The company chose WebORB for .NET, a cross-platform RIA integration solution, to increase application performance, scalability and time to market. Taking advantage of WebORBís easy to use APIs, remoting, RTMP and security features has enabled introNetworks to accelerate development and deliver cutting edge technology to their customers.

## introNetworks
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**Founded:** 2003

**Structure:** Private

**Location:** Montecito, CA

**Software:** introNetworks

**Vertical Industry:** Social Networking for Business

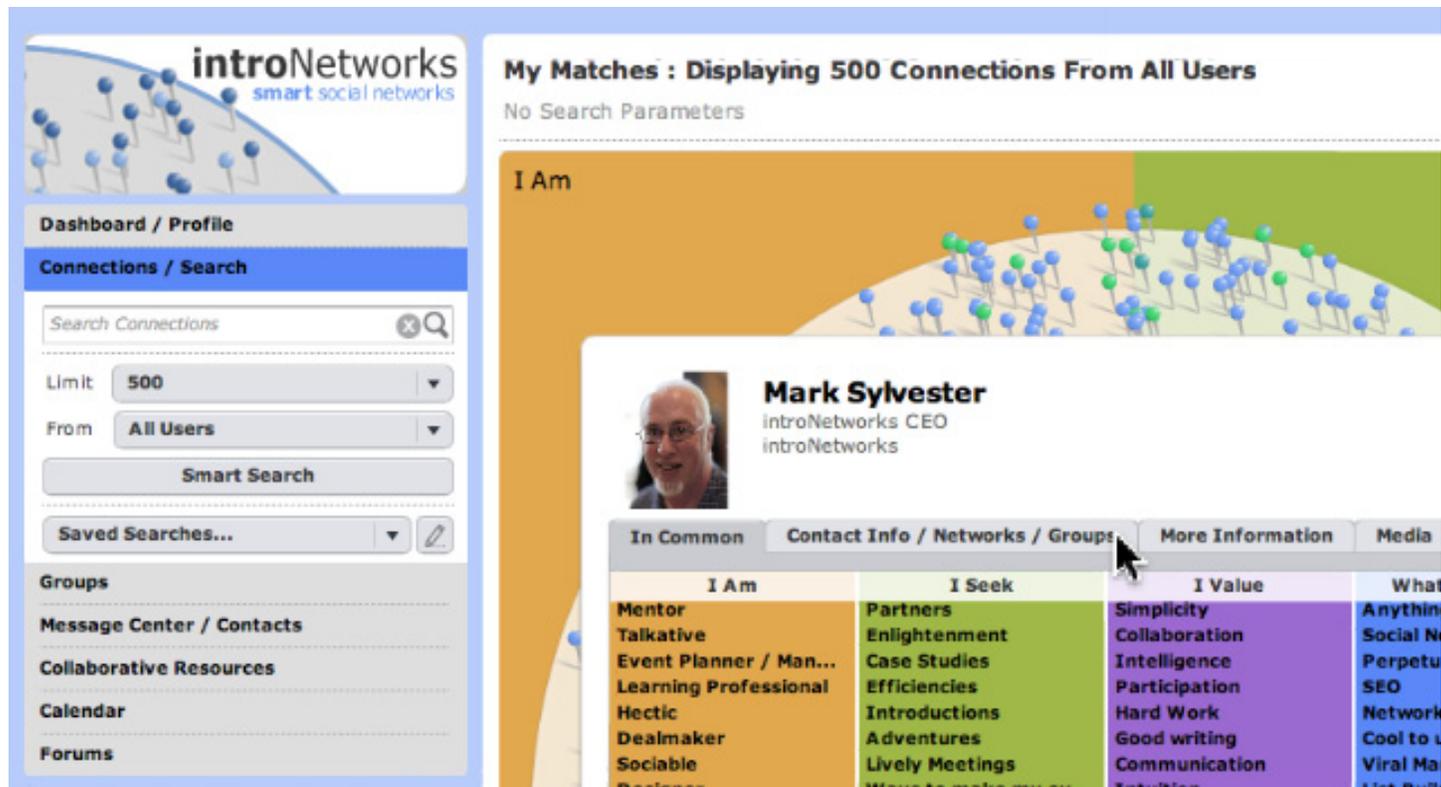**Business Need:** Better performance and scalability

**IT Issues:** Flex to .NET integration and overcoming performance and security problems

**Server Environment:**
- MS Windows server 2003 Standard Edition
- SQL Server 2008
- Dell PowerEdge 2950 II
- Dual Socket Intel 2.0 GHz, dual core
- 4GB Memory (fully buffered)

## Business Situation

Over the last couple of years, specifically with the change in the global economy and rise of social media, businesses have been looking for more effective ways to reach out to the various audiences that they serve in order to tap into these resources. According to Mark Sylvester, CEO and Co-Founder of introNetworks, "Having a very efficient, very time compressed way to connect and communicate, in fact collaborate, becomes the new way to do business."

There are literally thousands of Enterprises that have a particular challenge in trying to figure out how to harness the collective intelligence of untapped resources across the globe or throughout hundreds of chapters within an organization. At the very top of these Enterprises comes the challenge to educate decision-makers about the value of networks and how to facilitate the establishment and mining of these networks as a means to transform an organization into a more efficient and competitive enterprise.

## Application Description

The introNetworks platform offers an interactive Visual Matching EngineTM that is used for rapidly sifting through vast amounts of information to arrive at qualified results, which can match people in just two clicks to products, ideas, groups of other people, resources and any information that can be represented by a tagged profile.

In addition to providing accelerated matching, the introNetworks application enables knowledge workers to garner deep business intelligence, including real-time trend data, detailed reports and the ability to predict outcomes based on information collected in individual profiles.  This enables better decision-making and more effective communication and strategy formation.
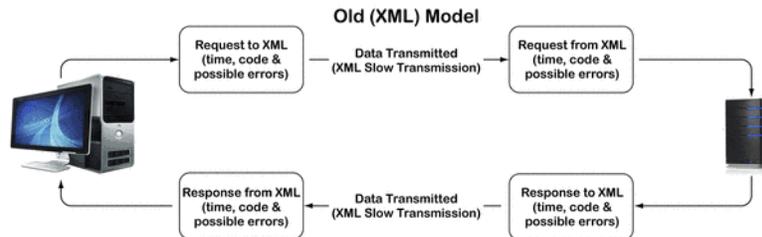
introNetworks' original platform consisted of a three-tiered architecture that was built in Flash connecting to .NET middleware and an SQL database via XML.



# Problem Definition

As introNetworks started to expand the number of clients and data supported on its servers, the application experienced a significant hit in performance.  Transfer times with the web services was sluggish due to the heavy XML payload traversing across the wires.  Programming with XML itself presented many development and code management challenges.  According to Anh Lam, Project Manager at introNetworks, "Our development team was spending a lot of valuable time just defining and documenting the XML structure. This made communication between both client-side and server-side developers quite burdensome."  Debugging programming errors in calls to the middle tier was a nightmare as well.

The following diagram below shows the communication structure of the original introNetworks application.

**Old (XML) Model**

Request to XML (time, code & possible errors)

Data Transmitted (XML Slow Transmission)

Request from XML (time, code & possible errors)

Response from XML (time, code & possible errors)

Data Transmitted (XML Slow Transmission)

Response to XML (time, code & possible errors)

In 2007, the introNetworks made the decision to do a total re-write of their application and move to an Adobe Flex remoting architecture with a vision for eventually removing XML completely.  The challenge then became how to integrate Flex with .NET without XML for better performance, which was what led the company to WebORB in 2008.

## Solution

introNetworks chose Midnight Coders, Inc. and WebORB for .NET for many reasons. According to Kymber-lee Weil, introNetworks President and Co-Founder,  "We had a developer on staff who had worked with We-bORB before and who absolutely loved the product.  Also, Ted Patrick from Adobe recommended WebORB for .NET and as a business owner...the price was right."  Additionally, WebORB allowed them to easily inte-grate a Flex client to their existing .NET services and achieving real-time performance was attainable.  Some of the features introNetworks liked most include:

- **Data Push** - WebORB enables the introNetworks application to provide real-time social networking by instantly pushing any changes a user makes to their profile out to all subscribers.

- **Conflict Resolution** -  When two or more people are working with the same data, WebORB man-ages conflict by providing a way for users to either commit changes or refresh data instantly to see what changes have been made by other users.

- **Security** -  WebORB allows every single transaction to be logged into the system.  It just as easily restricts user access by allowing administrators to assign roles to each user.  The ability to authenti-cate users using WebORB prevents non-authenticated users from gaining access to server code.

- **AMF Remoting** - The diagram below shows how the introNetworks architecture was adjusted when using AMF instead of XML.  As you can see the communication path is much simpler and streamlined using AMF and performance improved dramatically as a result.

**New (WebORB/AMF3) Model**

Data Transmitted (AMF Faster Transmission)

Data Transmitted (AMF Faster Transmission)

In addition to choosing WebORB, introNetworks agreed to become a beta customer for the Midnight Coders' CloudPuncher.com service.  This service enabled introNetworks to effectively load test and monitor the performance of their application.

## Benefits

- **Better Developer Communication/Workflow/Collaboration -**  In using WebORB the communication between introNetworks' Client App Developers and Server App Developers became much more fluent since the naming conventions on the client side were very similar to the server side. This made developing ideas and talking about these things much more intuitive.  This also made it easier to bring in new developers and integrate them into the project, because they didnít have to dig into XML to figure out what was going on.

- **Easier Debugging -** WebORB also offered type checking at compile time and fewer lines of code to debug, which further reduced development time.

- **Less Code to Develop and Maintain –** introNetworks' old architecture required a translation in both data in and data out for the client and the server. WebORB made that translation transparent and removed four steps in the translation process, which resulted in a lot less code to maintain and therefore lessened the chance for errors on both the client app and the server app. Additionally, not having to define XML structures freed up time on both client-side and server-side development.

- **Better Performance -**  A more streamlined path for communication between the client and server meant more data could be sent in less time making  real-time visualization of the information more responsive and interactive for introNetworks' customers.

- **Future-Proof -** WebORB's multi-functional feature-set means introNetworks can build in new functionality like chat messaging and better client synchronization of real-time data when they are ready to without having to pay anything extra for these features, because they are included in WebORB's Enterprise Edition product.

- **More Secure Environment for Networking -** WebORB's built-in security enables introNetworks and their customers to prevent unauthorized access to server-side code and data.

- **Better Data Management -** introNetworks was able to persist data and handle conflicts across all clients using WebORBís built-in client-synchronization and conflict resolution features. As an example, they could have many people working on the same list of projects and instantaneously see the changes each other made without having to poll the server.

- **Peace of Mind -** Having commercial support was crucial for introNetworks, especially when deploying premise-based solutions for their customers.  Additionally, having the ability to load-test the introNetworksí application using CloudPuncher.com gave them the information they needed to fine tune application performance and really know the limitations of what their application could support under any given load across multiple browsers and operating systems.

# Closing Remarks

"Midnight Coders has been a great partner for us.  Their technology enables us to do things even quicker, both in development and in the application.  Their support – having the ability to talk to the right person at the right time gave us a lot of confidence in our ability to scale across the hundreds of countries we are in now." - *Mark Sylvester, CEO, Co-Founder*

"It's been an absolute pleasure working with Midnight Coders.  The whole group is really a class act.  The support response time has been fantastic and they really make us feel part of what is coming next from Midnight Coders, so this helps us stay on the cutting edge." - *Kymberlee Weil, President, Co-Founder*

"It's been a great experience working with Midnight Coders.  They worked closely with us in our evaluation of 3rd party stress and performance testing solutions, including their own CloudPuncher service.  After using CloudPuncher, I'm very confident in what our application can support. I definitely recommend Midnight Coders products and services to others." - *Anh Lam, Project Manager*

"I would most definitely recommend Midnight Coders and WebORB to others. We've had nothing but a great experience with Midnight Coders.  The quality of their products and support is top notch!  If you go and look at other competing products youíll find there is no match.  When it comes to price, performance, maturity and support, Midnight Coders and WebORB get an A+." - *Bill Devine, Developer*

"We have been using WebORB for a couple of years and integrating the client code with the server code is way easier than it used to be. The client-side pieces are structured very similarly to the server-side pieces so a developer can go back and forth between the two very easily.  WebORB saved our development team quite a bit of time in that we didnít have to define our XML structures for our APIs anymore.  I would recommend Midnight Coders to anyone." - *James Wahlgren, Software Architect*