



## ICM Asia Pacific – Adaptiv Integration Ltd

ICM harnesses the power of cloud computing and BizTalk Server.

*ICM Asia Pacific has used Microsoft BizTalk Server along with a host of other Microsoft products to build a cloud based 'software as a service' platform that enables some of the world's major financial institutions to exchange data between disparate and non-compatible systems. The solution has proven so successful, ICM created a dedicated integration practice it calls **Adaptiv Integration** to deal with the workload.*

Microsoft BizTalk Server is an integration and connectivity solution that allows organisations to more easily connect disparate systems. Whether it's connecting a multitude of systems and technologies within an organisation or allowing an organisation to more easily connect to external business partners, BizTalk Server can smooth the way.

With over 25 multi-platform adaptors and a robust messaging infrastructure, BizTalk Server can simplify and automate interoperability to reduce costs and errors while allowing businesses to gain critical insights on processes and performance. In addition, BizTalk Server can help shield these processes from the impact of change and promotes an agile working environment with increased manageability.

### Solution Overview

ICM Asia Pacific developed an integration and connectivity solution based on Microsoft technologies and BizTalk Server 2009 that enabled it to better serve its own customers.

#### Web Site

<http://www.adaptiv.co.nz>

#### Industry

Financial services

#### Partner

Adaptiv Integration Ltd

#### Customer Size

100+ employees

#### Customer Profile

Adaptiv Integration is a provider of cloud based software-as-a-service (SaaS) platforms to global financial markets. Adaptiv and its European partner together provide the middleware services that allow a variety of organisations operating in the global financial sector to be able to do business together.

#### Business Situation

Adaptiv's European partner realised that global financial markets needed the ability to interface easily with a single service that would provide the necessary inter-party middle and back office electronic processing and, most importantly, seamlessly handle the complexity of connecting out to all the large market utilities and Prime Brokers in the market.

#### Microsoft Technology

- Microsoft BizTalk Server 2009
- Microsoft SQL Server 2008 R2
- Microsoft Windows Server 2008 R2
- Microsoft System Center Operations Manager 2007 R2

## The situation

Microsoft BizTalk Server is central to a solution operated by New Zealand based ICM Asia Pacific — a provider of cloud based software-as-a-service (SaaS) platforms to global financial markets. ICM and its European partner together provide the middleware services that allow a variety of organisations operating in the global financial sector to be able to do business together. ICM's European partner realised that the market needed the ability to interface easily with just one service that would provide the necessary inter-party middle and back office electronic processing and, most importantly, seamlessly handle the complexity of connecting out to all the large market utilities and Prime Brokers in the market.

The nature of the business is transactional, so at any given time there is a need for multiple systems to be interacting with each other in real-time in order to complete the thousands of derivative trades occurring each day. ICM needed to develop a large scale, global SaaS middle office platform which would process these complex “Over the Counter” derivative transactions and it required a solution that was fast, secure, scalable and able to be deployed quickly.

Ashley Helm, Director of ICM Asia Pacific, says the only way for the ICM team to efficiently implement and manage such a vast integration profile as the project required, was through the integration of Microsoft BizTalk Server supported by the .Net framework and other Microsoft tools.

He says, “The platform needed to be multi-tenant, supporting many hundreds of organisations and many thousands of users. Most importantly, it needed to integrate easily with different client trading systems, Prime Broker custody systems and market

utilities transacting many thousands of trades per day.”

Ashley said that even though ICM and its partner had over 10 years experience developing Web based SaaS applications, this project was still a formidable challenge.

“One of the biggest ongoing challenges with the over-the-counter platform is managing the vast range of different communication protocols, messaging schema’s and file formats. BizTalk delivers the flexibility required, from out of the box functionality to custom components tailored for specific requirements; such as processing of files larger than 100MB and flexible file parsing to deal with irregular formats, or highly standardised lightweight messaging fragments that are processed in real time to provide up to the second financial information. The sheer number of formats and protocols utilised by the financial markets is staggering and BizTalk, to date, with some extensions has been able to cope with the full range encountered.”

He adds, “It was clear from the outset that a strong integration framework was going to be key and the ICM Asia Pacific integration team recognised that only BizTalk had the industrial grade functionality, management tools and infrastructure necessary to deliver the integration platform required in a short time frame.”

### **The solution**

It was clear from inception that the system was going to ramp up into a large platform very quickly and therefore it was important to have an architecture that was performant and scalable. With this in mind the ICM architecture team designed the over the counter (OTC) platform as a multi tenant SaaS platform using a tiered service oriented architecture built on the core Microsoft server family and .NET framework platform. The platform utilises Windows Server 2008 R2, SQL Server 2008 R2 and BizTalk

Server 2009 because of its deep support for scalable deployments, 64 bit computing and virtualisation.

At the base of the platform is the SQL Server 2008 R2 engine which provides transaction processing, data integration and reporting capabilities implemented using multiple distributed databases to maximise parallel throughput. BizTalk Server 2009 wraps the services layer and is the primary integration vehicle which speeds connectivity to external parties. ICM say significant innovation was required to process the vast array of integration requirements and BizTalk's features have made this process efficient and rapid.

BizTalk Server's main function in the OTC platform is to publish all the service endpoints and formats to external systems, routing, transforming and validating all inbound and external messages. BizTalk has been configured to maximise low latency processing and redundancy scaling across multiple hosts for applications and key adapters, also minimising the use of orchestration opting for a messaging focused solution.

Through BizTalk, the OTC platform is interfaced to many of the world's largest Prime Brokerage houses for real time and batch based processing along with market utility systems such as DTCC Trade Warehouse, MarkitSERV, MarkitWire and Bloomberg. The platform is also directly interfaced with a vast array of standard and bespoke client trading systems, in both real time and batch, right across the globe.

The platform is deployed across large multi-core Intel machines on gigabit network's hosted by ICM's partner at its high security tier one data centre in London. Microsoft System Center Operations Manager 2007 R2 provides application and network management across the entire platform and the perimeter of the

system is protected by Juniper appliances. The platform utilises a horizontal scalability model facilitated by the stateless architecture which enables load balancing to be invisibly extended out across all tiers of the platform by simply adding more servers to the array. The OTC platform has users in London, Paris, New York, Hong Kong, Kuala Lumpur, Singapore, Sydney and Auckland. The platform is available 24 x 7 and is universally accessible from anywhere in the world.

### **The benefits**

Ashley Helm explains that there were a number of reasons behind choosing Microsoft solutions for this project, “ICM Asia Pacific has an 11 year pedigree of developing large scale derivative and cash security systems for the global financial markets and has cut its teeth utilising the Microsoft toolset from the late 1990’s. ICM has always found the Microsoft toolset to be intuitive, well supported and fit for purpose.”

He adds the decision to use SQL Server for the data storage layer, .Net for the logic layers, MSMQ for queuing, SCOM (previously MOM) for monitoring and BizTalk as the integration engine, was a “no brainer” for ICM. “BizTalk represented the biggest bang for buck in the platform bringing with it significant flexibility of implementation approaches – either out of the box or the ability to extend existing capabilities easily to achieve business goals.”

Support for market standards was another driving factor, “SWIFT, FIX and WebSphere MQ are readily used in the financial markets, BizTalk offered existing solutions for these messaging standards and technologies without the need for custom development. Strong XML support also made the implementation of the FpML standard smooth given its complex schema design.”

Implementing the OTC platform is an ongoing “work in progress” that Ashley says has been in constant development since August 2005. “We’ve used BizTalk since inception and have integrated the platform with 4 large market utilities, 10 major Primer Brokers, and numerous client organisations managing over 30 different file formats and 500 interfaces. Individual projects are carefully planned and scheduled based on business need; typically projects take less than 6 weeks from inception to delivery for a major implementation, a huge reduction from earlier bespoke developments.”

Ashley adds that it was easy to source developers with Microsoft experience in .Net, SQL Server and BizTalk due to the large existing skill set that exists in the marketplace while existing staff could be easily trained using the extensive learning resources available from the rich Microsoft toolset.

Benefits for customers are also plentiful with clients now able to use a single, unified, transparent view of their world. Without the BizTalk Server-based OTC platform developed by ICM, clients would be required to log into and/or interface with many different systems making it very difficult to bring all the data together into one, consolidated view.

“This platform brings that consolidated view online to the client and in the process significantly reduces operational risk as the client can now see their entire position right across the market” says Ashley.

“New clients are able to join the platform quickly and easily and we’ve been able to move them from batch processing that used to take around five days or more to complete, to real-time processing”.

The cost of managing the system has also been reduced as BizTalk allows new clients to be brought onboard in a matter of weeks, or even days in some cases, instead of months. However, Ashley says the biggest benefit to the client is the automated processing provided by the platform which has seen savings of up to 80% on headcount by some clients when it comes to managing the ever increasing trade volumes these organisations deal with every day.

### **The future**

ICM will look to continue ramping up the capabilities and efficiencies of the existing BizTalk solution. Ashley says, “The original BizTalk solution designed for the platform always had loose coupling and reuse at the heart of its architectural principals and it is planned to develop all new interface artefacts on the ESB framework, migrating existing interfaces as opportunities present themselves. Business activity monitoring (BAM) reporting will also be further developed to enhance existing external interface KPI and performance reporting.”

For ICM Asia Pacific the future lies in the cloud and they plan to make full use of Microsoft’s cloud computing platform Azure to accomplish their goals. “We’ve recognised the significant impact on integration that new technologies like Azure can provide. We’ll look to leverage our existing capability with BizTalk and SaaS to deliver new cost effective integration strategies and solutions out of the cloud, be they true SaaS solutions, or Platform as a Service solutions. Furthermore the Azure platform will provide massive elastic scalability for the OTC platform functionality, allowing ICM’s partners to realise greater profits from existing IP investments without requiring costly capital investment and long provisioning lead times”.

For ICM the BizTalk solution has proven so compelling it is

launching a new, dedicated integration practice called **Adaptiv Integration** to focus entirely upon the potential of Microsoft integration technology such as BizTalk Server and the new possibilities opened up by cloud computing. The future looks bright.

