

Understanding Your Microsoft Integration Technology Options



YOUR INTEGRATION TECHNOLOGY OPTIONS	03
Choose Your Required Technology Capabilities	04
Choose Your Preferred Service Model	06
Choose Your Preferred Hosting Model	07
Understanding the Implications of Each	08
CUSTOMER SUCCESS STORIES	10
FINAL THOUGHTS	12
ABOUT MEXIA	13

Even if your enterprise has not already moved to embrace the agility that cloud makes possible, you will have recognized that the need to do so will soon become increasingly important.

The expansion of the API economy, the burgeoning Internet of Things (IoT), and an industry-wide trend towards bimodal IT means that anyone who isn't seriously considering integration now will face significant obstacles to their business in the coming years.

In a previous paper, *Planning your Integration Journey: 5 Essential Considerations when choosing your Microsoft Integration Tools*, we discussed the primacy of Microsoft technologies in the field of Integration, as demonstrated by their BizTalk Server and Azure offerings.

Specifically, we outlined the essential considerations to be undertaken before committing to any Integration project, including the need to examine your organisation's information flow, security and organizational policies, and what your overarching strategy regarding the cloud is.

In this discussion paper, we delve directly into the critical points that will determine your your ideal integration deployment with Microsoft technologies, whether cloud, on-premises, or hybrid; what the implications of your chosen option are; and what ramifications you can expect in regards to cost and resources.



YOUR INTEGRATION TECHNOLOGY OPTIONS

Microsoft's ongoing investment into the battle-tested BizTalk Server product has been complemented by the rapid iterative enhancements of the Azure cloud platform. Indeed, as demonstrated in their *2016 Cloud Platform Roadmap*¹ and *2016 Integration Roadmap*², Microsoft are implementing more robust ways by which these two environments can converge.

Whatever your specific requirements or preference, the information following should help you determine which option represents the best way to advance your integration platform – whether it be a cloud, on-premises, or hybrid deployment.

¹ 2016 Cloud Platform Roadmap available from <https://www.microsoft.com/en-us/server-cloud/roadmap/>

² 2016 Integration Roadmap available from <https://www.microsoft.com/en-us/download/details.aspx?id=50408>

CHOOSE YOUR REQUIRED TECHNOLOGY CAPABILITIES: TRADITIONAL ENTERPRISE OR MODERN

How do you know whether you need traditional Enterprise or Modern Integration? The main determinant is whether your organisation will require a BizTalk Server, or Enterprise Integration capability.

Some circumstances that will decide this for you include whether:

- you have long-running business processes and the need for BizTalk's orchestrations for robust processing and performing compensation actions;
- you have distributed transactions and two-phase commit style requirements; and/or
- you need the rich set of enterprise integration adapters that are not yet available in Azure.

Alternatively, consider whether your requirements can be satisfied with just Modern Integration capabilities and technologies, such as:

- A highly scalable and reliable queuing or publish/subscribe messaging engine (Azure Service Bus);
- API applications with RESTful services (deployed on-premises or in the cloud);
- Public API management with Azure API Management;
- Distributed applications and systems – with reliable stateless or stateful microservices or actors in Service Fabric (deployed on-premises or in the cloud);
- A subset of the enterprise integration adapters/connectors that are available in Azure, for use with Azure Logic Apps (deployed on-premises with Azure Stack or using Azure App Service in the cloud);
- An expanded set of application connectors that are not available in BizTalk Server, for use with Azure Logic Apps (deployed on-premises with Azure Stack or using Azure App Service in the cloud);
- Running programs or scripts on a schedule, with Azure Scheduler or as a WebJob; or
- Many other capabilities that are regularly expanding in the cloud

IMPORTANT TO NOTE:

At the time of writing this paper, Microsoft Azure does not have the equivalent of a BizTalk orchestration out-of-the-box, with its robustness, compensation capability and suspend/resume functionality.

This could be developed as a custom solution, but that obviously incurs extra development and maintenance costs. Microsoft have indicated that they will provide feature parity in Azure with BizTalk Server, so it is just a matter of time before it will be implemented natively.

Until that time, if there is no out-of-the-box adapter or connector, you will need to determine the feasibility of your organisation developing a custom integration, or purchasing a solution elsewhere, possibly as a service.

As a general rule, we seek opportunities with customers to use Modern Integration technologies first, if the required functionality and capability is available. This is because they are quicker, simpler, and cheaper to implement than BizTalk, although currently with a reduced feature set. The introduction of BizTalk Server into an organisation can drive many benefits for the customer, but it has a higher level of level of technical skills for both operations and solution development.

HAVE BOTH!

You might require traditional Enterprise Integration for some parts of your solution, and at the same time you might be able to use Modern Integration approaches for the other parts. As more equivalent functionality is added to the Modern Integration capability set, over time you could migrate to only using Modern Integration capabilities.

This is true regardless of whether you can or cannot deploy into the cloud. Modern Integration capabilities are being released gradually in the Azure Stack, which is a subset of the Azure technologies that you can download and run in your own datacenter. As such, with a few limitations, a solution can be designed and developed using Modern Integration Microsoft Azure technologies, and easily deployed on-premises.

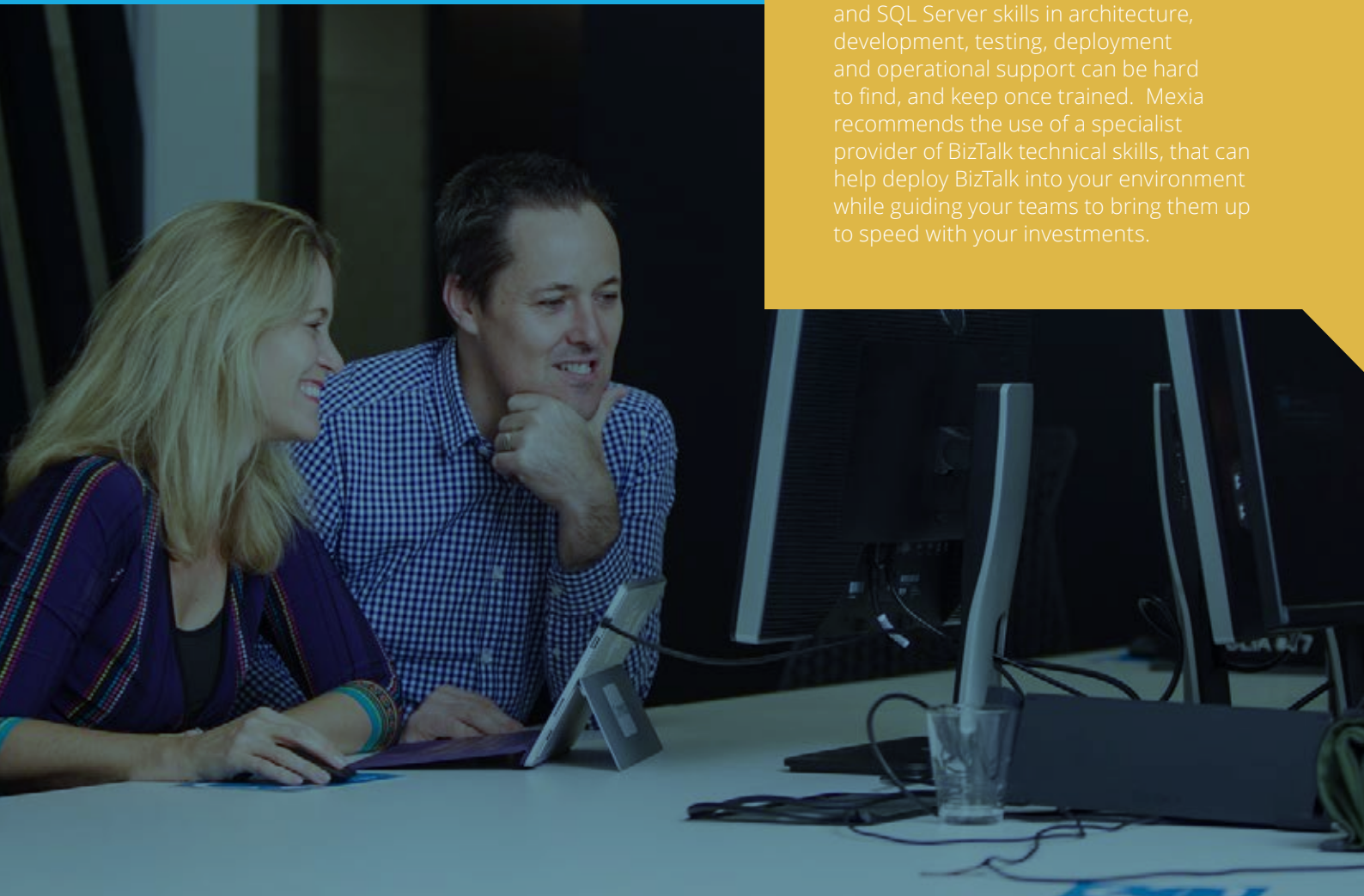
The Azure Stack therefore gives an organisation that is currently blocked from deploying in the cloud the option of easily doing so in the future, if a policy or other impediment happens to change.

BIZTALK SERVER - STAFF TRAINING CONSIDERATIONS

The impact of introducing BizTalk Server into an organisation is a significant investment that can deliver fantastic value for your business operations and stakeholders. However it can be a complicated server product that requires a multi-disciplinary team across your business, infrastructure, operations staff and/or consulting partners.

This team will need to be very comfortable with BizTalk Server administration, in addition to Windows Server, SQL Server, and networking administration. Lastly – and perhaps most importantly - the BizTalk administration and management skills need to be folded into your operational management teams to ensure you can support the platform in production, in many cases 24/7 for mission-critical solutions.

As a result of these requirements, specialised staff with BizTalk Server and SQL Server skills in architecture, development, testing, deployment and operational support can be hard to find, and keep once trained. Mexia recommends the use of a specialist provider of BizTalk technical skills, that can help deploy BizTalk into your environment while guiding your teams to bring them up to speed with your investments.



CHOOSE YOUR PREFERRED SERVICE MODEL

As discussed in our white paper, *Planning your Integration Journey: 5 Essential Considerations when choosing your Microsoft Integration Tools*, flexibility is the hallmark of today's computing environment. The cloud has expanded the options for enterprise deployments, with each approach having unique capability sets and oversight requirements. Software can be hosted on-premises, or in the cloud with Infrastructure as a Service (IaaS), Platform as a Service (PaaS), or as Software as a Service (SaaS).

The following diagram explains the various service models available to you when choosing what path to take on your integration platform journey. Each model describes the full stack of capabilities required to establish an integration platform, with the only variation being the level of capabilities you consume 'as-a-service' with the remaining provided by yourself and Mexia as your partner.

SERVICE MODELS

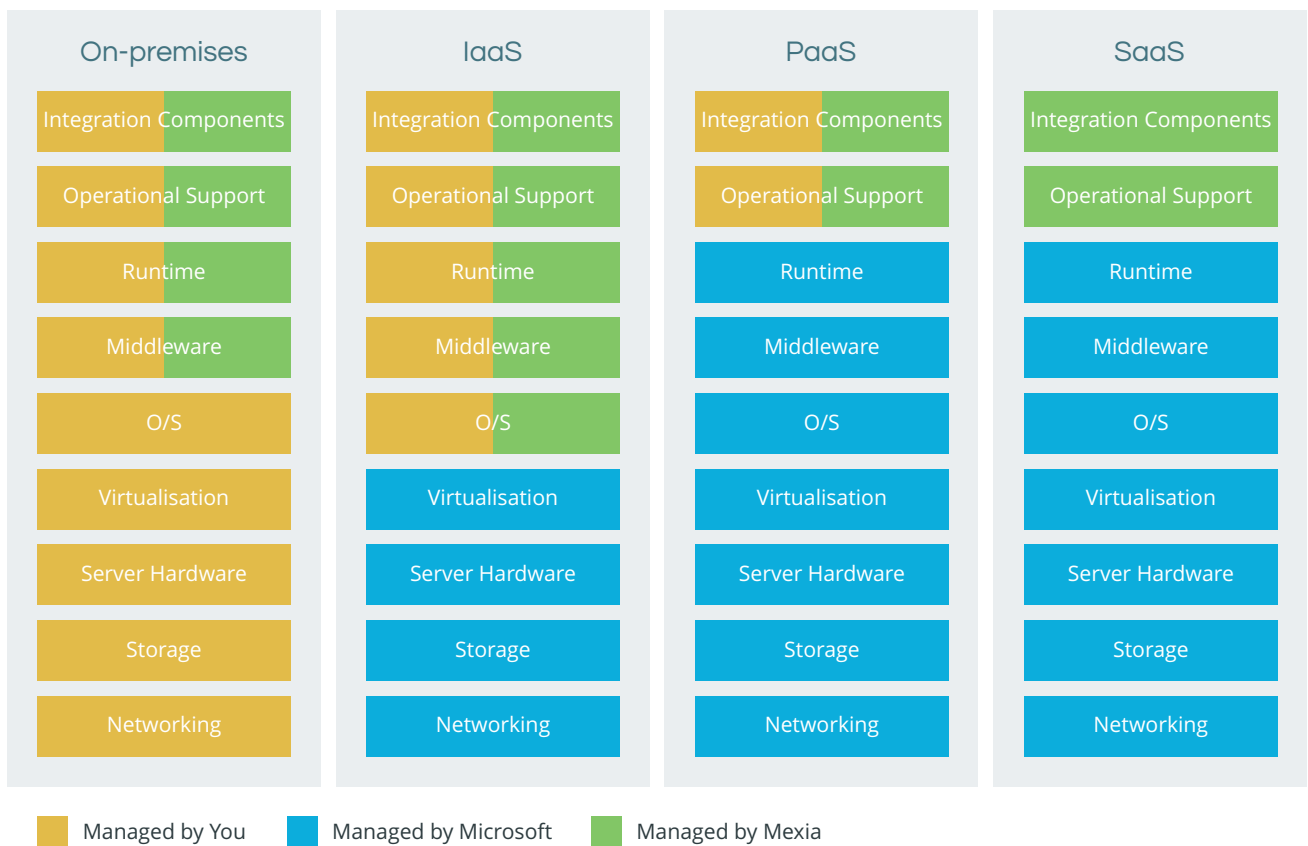


Figure 1 - Integration Platform Service Models

With both SaaS and PaaS, Microsoft is primarily responsible for the maintenance. With PaaS, you – or Mexia's Managed Services team - are responsible for the integration components and operational support.

With IaaS, your organisation (or Mexia's Managed Services team) is primarily responsible for everything down to the level of the virtual machine. The underlying infrastructure that runs the virtual machine is Microsoft's responsibility.

CHOOSE YOUR PREFERRED HOSTING MODEL

Depending on the ideal outcomes you have identified in light of the considerations outlined previously, Mexia recommends choosing one of the following four technology options (Figure 2):

1. An Azure-only integration platform using Azure's iPaaS capabilities [top-right];
2. BizTalk Server hosted in Azure IaaS [bottom-right];
3. Azure Stack running on-premises [top-left]; or
4. BizTalk Server hosted on-premises [bottom-left].

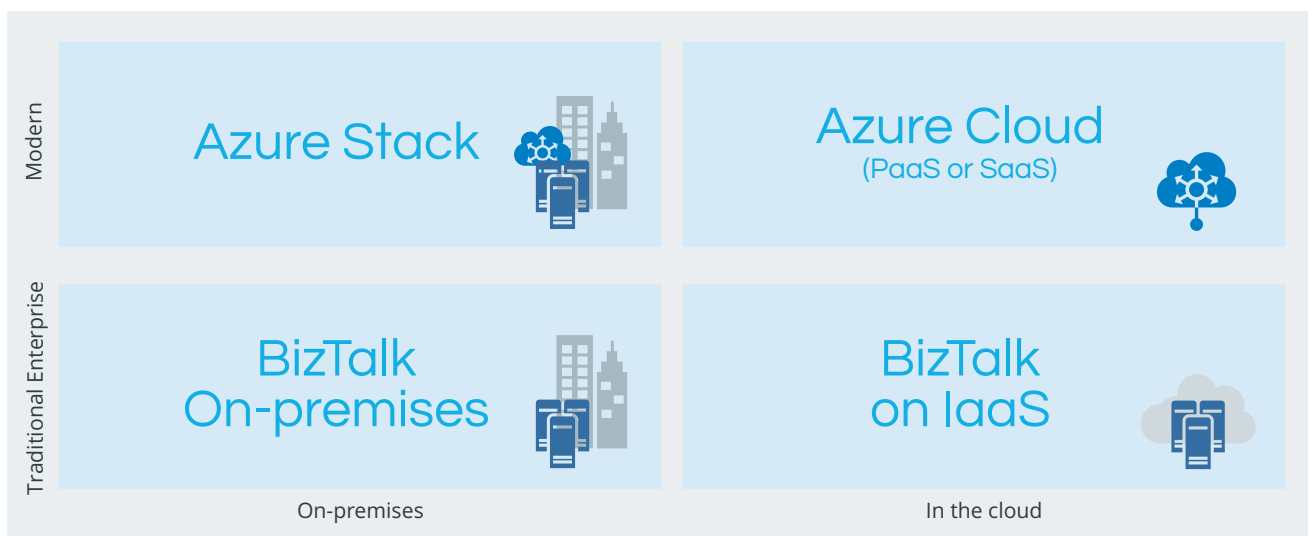


Figure 2 - Traditional Enterprise or Modern Integration? Your technology options.

These options are categorized into traditional Enterprise Integration and Modern Integration:

TRADITIONAL ENTERPRISE INTEGRATION TECHNOLOGY (ON-PREMISES)

Traditional Enterprise Integration is generally characterized by the use of a battle-tested, traditional brokered Enterprise Service Bus such as Microsoft BizTalk Server, to reliably handle mission-critical workloads. This approach is typically focused on transactional message processing and Service-Oriented Architectures (SOA). Specialist Enterprise Integration skillsets are usually required in order to successfully design and develop effective solutions. BizTalk Server can be deployed on-premises or on Virtual Machines through Azure Infrastructure as a Service (IaaS).

MODERN INTEGRATION TECHNOLOGY

Modern Integration however is more focused on the use of Software as a Service (SaaS), web-centric architecture and design patterns for handling high scalability with eventual data consistency. Specialist integration skills are still required to design an effective solution, but less specialist skills are typically required for development and operations. This approach also is an enabler of bimodal IT practices.

UNDERSTANDING THE IMPLICATIONS OF YOUR CHOSEN PLATFORM

As can be seen, the integration strategy you choose to adopt will have deep and long-lasting ramifications on your business and how it operates, and must be determined in line with the considerations outlined in this paper. Following is an at-a-glance overview at the essential implications of your desired deployment.



AN AT-A-GLANCE OVERVIEW

	Azure Only	BizTalk Server IaaS	Azure Stack On-Premises	BizTalk Server On-Premises
Business Drivers	<p>Beginning your integration journey with Azure PaaS is a safe first-step towards business agility and building a modern digital enterprise.</p> <p>This is the lowest cost and risk option compared to the other alternative solutions. It will allow you to innovate rapidly, deliver value to your customers faster and grow your enterprise integration capability as the Azure iPaaS capabilities grow.</p>	<p>Choose this option if you require a high performance integration platform with high availability for implementing high volume, mission critical process flows, and would like to minimize your up-front capital expenditure costs for provisioning the platform.</p> <p>By provisioning your BizTalk integration environment using Azure IaaS Virtual Machines, you will save a significant amount on initial physical infrastructure purchasing and provisioning costs across your production and DR environments.</p>	<p>Establishing a BizTalk Server IaaS and Azure PaaS integration environment on-premises with the Azure Stack provides the best of both worlds.</p> <p>Whilst this solution approach may be new, the capacity of iPaaS is ever increasing.</p> <p>Mexia feels this choice will increase in popularity for organisations unsuited, unable or unwilling or to use the Azure public cloud over the longer term.</p>	<p>BizTalk Server is a tried and tested enterprise-grade technology platform for on-premises integration solutions.</p> <p>Choosing this approach will enable your existing on-premises LOB and legacy applications seamlessly communicate in support of your business processes and information flows.</p>

	Azure Only	BizTalk Server IaaS	Azure Stack On-Premises	BizTalk Server On-Premises
Cost / Existing IT Infrastructure	<p>No up-front costs.</p> <p>Pay only for the individual services that you use and scale as your capacity requirements increase</p>	<p>No up-front costs for infrastructure. Pay only for what you use.</p> <p>BizTalk Server license is included in the usage fee.</p> <p>No charges for virtual machines that are provisioned but stopped.</p>	<p>Depending on available infrastructure, an on-premises solution may require significant up-front investment in servers or storage infrastructure.</p>	<p>Depending on available infrastructure, an on-premises solution may require significant up-front investment in servers or storage infrastructure.</p> <p>BizTalk Server Licensing under an Enterprise Agreement can be paid over a period of time rather than all up-front.</p>
Information Flow: Data Usage, Traffic Reach, Capacity & Scale	<p>The elastic scalability and pay-as-you-use costing model of cloud computing allows you to handle any, near unlimited, data usage scenario.</p>	<p>BizTalk Server virtual machines can be scaled up/down or out/in easily, when required. You only pay for what you use.</p>	<p>Scale up/out is limited by on-premises infrastructure availability.</p>	<p>Scale up/out is limited by on-premises infrastructure availability.</p>
Security & Organisational Policies	<p>For organisations or solutions with strict security requirements, the addition of typical enterprise security features into a publicly-exposed cloud environment may result in higher setup and/or running costs, and may also require the training of internal staff on new technologies.</p> <p>The unit cost of these security features may make the global distribution of cloud based services prohibitively expensive.</p> <p>Access control may be fragmented across Azure and On-Premises Active Directory, unless additional investment is made into AD federation between on-premises and Azure.</p>	<p>For organisations or solutions with strict security requirements, the addition of typical enterprise security features into a publicly exposed cloud environment may result in higher setup and/or running costs and may also require the training of internal staff on new technologies.</p> <p>The unit cost of these security features may make the global distribution of cloud based services prohibitively expensive.</p> <p>Access control may be managed at reasonably low cost and complexity with hybrid cloud configurations between Azure IaaS and On-Premises Active Directory.</p>	<p>Reuse of on-premises, edge tier security infrastructure and network load balancing infrastructure is possible with relatively little effort and cost.</p> <p>Organizational policies relating to data sovereignty are satisfied.</p> <p>Access control for entire solution is managed through on-premises Active Directory.</p> <p>Additional internal policies and procedures on the self-service features of Azure Stack will be required to prevent over-utilization, and to manage resource costs across internal cost centers.</p>	<p>Reuse of on-premises, edge tier security infrastructure and network load balancing infrastructure is possible with relatively little effort and cost.</p> <p>Access control for entire solution managed through On-Premises Active Directory.</p> <p>Organizational policies relating to data sovereignty are satisfied.</p>
Features & Capabilities	<p>The Azure iPaaS suite of technologies are not as feature-rich as BizTalk Server yet.</p> <p>However Microsoft are investing heavily into Azure App Services and are releasing new capabilities at a higher cadence than the BizTalk Server product.</p>	<p>BizTalk Server 2016 will be released soon, and Microsoft has committed to BizTalk Server for at least another 10 years.</p> <p>This means a BizTalk Server deployment into Azure means you gain all of the features with the benefit of cloud IaaS server provisioning speed and cost management.</p>	<p>The Azure Stack feature set is increasing over time to include more and more Azure services.</p> <p>Easy to switch to deploying parts of the solution into the cloud if that ever becomes a viable business option.</p>	<p>BizTalk Server 2016 will be released soon, and Microsoft has committed to BizTalk Server for at least another 10 years. The means your investment now into the feature-rich, battle-tested BizTalk Server product will be supported by Microsoft for another 10 years at least.</p>

CUSTOMER STORIES

In light of the above, every company will have specific needs, configurations, and desired outcomes for their integration platform. Here are some viable, real world scenarios faced by our valued customers, illustrating the tangible ways in which specific deployments could benefit you.



When Unisuper were looking to re-platform their existing BizTalk Server environment in 2015 as part of their Digital Transformation initiatives, they turned to Mexia to upgrade all of their developer, test and production BizTalk environments to take advantage of Windows Server, SQL Server and Visual Studio platform alignment.

Their new highly-available BizTalk Server production environment is now securely and efficiently processing B2B and B2C integration workloads with external partners, customers and external SaaS platforms, ensuring Unisuper can participate in the new digital economy.

“ In addition to improving customer experience, we’ve made significant cost savings. The biggest benefit for us is the fact we now have a solid platform for future growth, making it easy to add new channels to consume additional services. ”

Sunil Dargani,
Manager, Web & Integration Services
at UniSuper



CPA is one of Australia's largest accounting bodies, with over 155,000 members working in 118 countries. When they sought to implement key business systems organisation-wide, they turned to Mexia to assist with their integration strategy and transitioning to Microsoft Azure. With our agile, structured methodology and integration consulting frameworks, we helped CPA achieve a superior solution while reducing the original project budget by 30%.

“ This integration platform has given us a new level of flexibility. It has allowed us to deliver on our strategy, and continue improving the experience we offer to members. Mexia provided ongoing support and valuable recommendations throughout the project such as alternative solutions to maintain security at decreased cost, and other recommendations to lower the complexity in our network architecture. ”

Peter Harrison,
Architecture and Strategy Manager, CPA Australia



When faced with organisational transformation, RACQ contacted Mexia to consolidate their end of life financial systems into a single ERP, and align their adopted finance system (Microsoft Dynamics AX) with a new BizTalk integration that could translate their old data easily into their new system.

In addition to building the integration platform, we also provided them with mentorship and training in BizTalk, enabling them to support their new platform independently. The result? A solid foundation of development practices, reduced support cost through the decommissioning of legacy system, and an increase in RACQ's agility and speed to market.

“ The new platform has paved a path forward for us. The fact that we don't have to re-write all the integration components from scratch is a load off my mind. Mexia is a premium provider in this specialist field and consistently went the extra mile during this challenging project. ”

Chris Mercer,
Solution Delivery Manager, Group Financials Project at RACQ



FINAL THOUGHTS

BizTalk Server and Azure represent the most complete Integration Platform offerings on the market today, with a flexibility that can accommodate essentially any deployment scenario one might expect an Enterprise to consider.

As such, Mexia is confident that for organisations seeking to re-platform, extend, or upgrade their existing environments, the Microsoft stack is the strongest, most robust and full-featured approach to integration available in the market, enabling businesses to harness the full enterprise potential of the cloud.

As demonstrated, the advantages are many, the implications significant. Formulating a clear and focused Integration strategy is the best way to ensure maximum value can be extracted from whichever integration pathway you decide upon.

We know the benefits that your development environment can achieve through integration, and we know the Microsoft stack inside and out.

“ For those who have weighed the options and seen the possibilities that an optimised integration solution can provide for their organisation, we encourage you to contact us and allow us to demonstrate the value of our experience. ”

If you're ready to integrate, Mexia is ready to assist.

Confident. Capable. Committed.
We love solving integration
challenges in any form – that's
just what we do.

The name Mexia is a play on the widely-used industry term "MEX" for message exchange. Originally specialising in building enterprise on-premises integration solutions with Microsoft BizTalk Server, Mexia was an early adopter of cloud computing. Now, we're also an Australian leader in integration, API and internet-of-things (IoT) solutions using the Microsoft Azure cloud platform.

Mexia is a world-class integration consultancy demonstrating consistent growth year after year, recognition in the BRW Fast 100 for 3 years in a row, and were recent inclusions in the Deloitte Australia Fast 50 and CRN Fast 50 awards.

Mexia combines a deeply talented team of integration specialists with a structured delivery methodology and proven technologies to take you from solution design to managed go-live with a minimum of hassle. We will lead from the front to engineer the best outcome for your business.

World-class technical excellence. A deep focus on customer service and outcomes. A champion team that lives and breathes innovation.

This is Mexia.



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