Digital Integration Platform
EAI to Hybrid Integrations

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Bill Gates: "The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency."
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Integration Tooling – Journey

1st Generation: Point to Point, Custom, CORBA, DICOM

Late 90’s

2nd Generation: Message Broker, Hub & Spoke, Adapters, B2B

Early 00’s

3rd Generation: Web Services, SOA, Product Suite

Early 10’s

Generation Next: Microservices, Cloud Native, IPaaS, Hybrid Platforms

Value Generation

Technology Complexity
Limitations of Legacy Integration Systems – Business

- Value Realization: Limitations
- Cost: Integration & Maintenance
- Time to Market: Challenges
- Application Diversity
- Landscape Complexity
- Lack of Visibility into Integration
- Multiple Integration Tooling
- DR: Limitations
- Vendor Lock-In
- Platform Management
Limitations of Legacy Integration Systems – Technology

- Message Structure: Heavy Workload
- Scalability: Feature Disparity
- Message Broker: Run Time Addition
- Pub-Sub: Lack of Support
- Hybrid Cloud Configuration
- Backward Compatibility
- Outdated Inflexible Integration Middleware
- Open Standards: Compatibility
- Performance Limitations
- Event Driven Architecture
Dimensions of Integration Platform

Integration Persona
- Integration Specialist
- Citizen Integrators
- Business Analysts
- Data Specialist

Integration Domains
- Application
- Data
- Process
- APIs
- Events
- B2B

End Points
- On Premise
- On Cloud
- Mobile
- IoT-Edge

Standards & Protocols
- Communication Protocols
- Application Adaptors
- Data Formats
- Data Standards
Integration Framework – Reference Architecture

Role Based Users

Integration Specialist
Citizen Integrators
Business Users
Data Specialist

Approaches

- Microservices
- Request Response
- Event Driven
- File Based
- Message Based
- API Based

Integration Scenarios

- Application
- Data
- Process
- APIs
- RPA
- EDI
- Events
- ETL
- Streaming
- IoT
- SaaS
- MDM
- BI
- ML
- AI

Integration Solutions

- API Management
- ESB
- MQ
- Event Broker
- Message Broker
- Workflow Engine
- Event Streaming
- ETL
- Monitoring
- DevOps

Deployment Models

- On Premise
- On Cloud
- Mobile
- IoT–Edge

Operations

- DevOps
- Observability
- Security

Governance

- API Policy Management
- Life Cycle Management
- Metadata Management
## Business Scenarios – Integration Platform Use Cases

<table>
<thead>
<tr>
<th>#</th>
<th>Integration Platform – Use Case</th>
<th>Solution Theme</th>
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<tbody>
<tr>
<td>1</td>
<td>Platform let publishers and consumers interact using multiple protocols</td>
<td>Pub–Sub Model/Message Broker</td>
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<td>2</td>
<td>Platform make it easy to ingest, combine and route data concurrently between multiple systems</td>
<td>Service Bus</td>
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<td>3</td>
<td>Solution facilitate event discovery and configurability on streaming flows</td>
<td>Event Discovery and Event Steaming</td>
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<td>4</td>
<td>Platform replay a sequence of messages while preserving the order in</td>
<td>Message Queues</td>
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<tr>
<td>5</td>
<td>Solution replay a sequence of messages while preserving the order in which they were sent</td>
<td>Message Queues</td>
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<tr>
<td>6</td>
<td>Platform guarantee the delivery of events with no data loss</td>
<td>Eventing Mesh</td>
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<td>7</td>
<td>Solution secure data at rest and in motion</td>
<td>Security by Design at all levels</td>
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<td>8</td>
<td>Platform support A/B (Blue-Green) deployments</td>
<td>Deployment Model</td>
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<tr>
<td>9</td>
<td>solution be delivered/configured as “Infrastructure as code” using tools like Terraform or Jenkins</td>
<td>Infrastructure as a Code</td>
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<td>10</td>
<td>Platform built with an architecture that’s good for stream processing</td>
<td>Event Streaming</td>
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<td>11</td>
<td>Platform work with ESB and iPaaS tools</td>
<td>ESB, iPaaS and HIP</td>
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<tr>
<td>12</td>
<td>Platform manage slow or offline consumers</td>
<td>Message Queues</td>
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<tr>
<td>13</td>
<td>Throughput the Platform offers</td>
<td>NFRs: Throughput</td>
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<tr>
<td>14</td>
<td>Platform be deployed in a variety of clouds, such as AWS, Azure, GCP, Huawei and Tencent</td>
<td>Multi Cloud Model</td>
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<td>15</td>
<td>Platform be deployed across cloud and on–premises environments</td>
<td>Hybrid Model</td>
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<tr>
<td>16</td>
<td>Platform support business continuity with minimal overhead</td>
<td>Business Continuity &amp; DR</td>
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<tr>
<td>17</td>
<td>Platform allow different kinds of disaster recovery</td>
<td>DR Models</td>
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<tr>
<td>18</td>
<td>Fast does your Platform resume service in the event of a failure</td>
<td>NRFs: RPO and RTO</td>
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## Digital Integration Platform – Solution Principles

<table>
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<tr>
<th>Traditional</th>
<th>Description</th>
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<tr>
<td><strong>Cloud Native</strong></td>
<td>Provides benefits like automation, auto-scaling, serverless operations and highly customizable. Platform are fully managed by vendor, which frees customers from worries of building, hosting, scaling, managing, monitoring, and maintaining the solutions.</td>
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<td><strong>Hybrid Integrations</strong></td>
<td>Integration processes need to run in multiple deployment scenarios whether multi-cloud or on-prem. Deploying applications and not worrying about where they are deployed.</td>
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<td><strong>Efficiency &amp; Control</strong></td>
<td>The platform is highly customizable and provides a plug and play architecture providing agility and faster time to market. In terms of the NFRs the customer load increases, the platform allocates more resources automatically. This can speed up development time and provides a competitive edge.</td>
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<td><strong>Observability</strong></td>
<td>This enables the monitoring and governance of application and integrations in a real time. This feature implies having reactive observation events that react to monitoring events such as alerts when thresholds are breached. Enables end-to-end detailed traceability, from integration source to destination.</td>
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<td><strong>Ease of Maintenance</strong></td>
<td>Platform are fully managed by vendor, which frees us from worries of building, hosting, scaling, managing, monitoring, and maintaining the solutions.</td>
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Digital Integration Platform – Azure Native – iPaaS
**Azure Monitoring Platform:** Maximize the availability and performance of the applications and services. It delivers a comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments. This platform will provide business operations oversight and end-to-end detect and response.

**Azure Monitoring Platform:**

- **Maximize the availability and performance of the applications and services.**
- **Collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.**
- **Business operations oversight and end-to-end detect and response.**
DevOps Platform – Azure DevOps

Azure DevOps

- Azure Boards
- Azure Repos
- Azure Pipelines
- Power Shell
- Azure Artifacts
- Azure Test Plans, Application Inspector
- ARM, Bicep

Hosting Model
- SaaS

Core Capabilities
- Boards
- Version Control
- Build
- Orchestrate
- Binaries
- Verify
- Release

Development

Testing

Staging

Production

SDLC Environments
CI/CD Pipeline Automation – Azure DevOps

Deployment Pipeline

A. Version Control
B. Orchestrate
C. Build/Assemble Verify
D. Register Binaries
E. Verify Code
F. Verify Functional
G. Verify Non-Functional

Environments

Development
Test & Acceptance
Production
Digital Integration Platform – Integration Architecture
Event Driven Architecture – Eventing Backbone
The HIP Aggregates Technology Plumbing and Products Into a Platform for Service Delivery (the “3Ps”)
Closing Notes..
For further information, please contact us@iasaglobal.org