IBM Integration Bus Update

Andrew Humphreys, IBM Integration Bus Product Manager

Integration needs are evolving…

New sources of data are changing the world

More endpoints need connecting than ever before

Rapidly evolving integration requirements

Integration infrastructure...

IBM Integration Bus

Provides heterogeneous connectivity across enterprise systems, applications and data
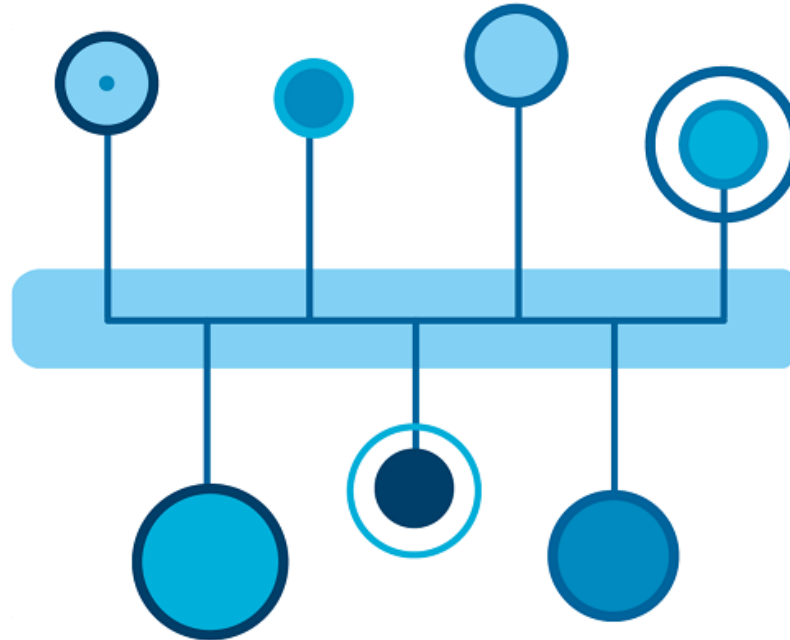
IBM MQ

The messaging backbone that provides reliable transport and data delivery across enterprise systems and applications

What makes IBM Integration Bus the Marker Leader?

IBM

Scalability and Performance
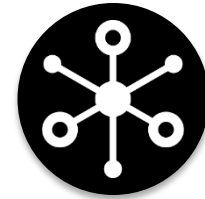High message volumes in complex IT environments

Ease of Use
Client choice of developer tools Extensive open standards support

Connector Range
Large breadth of adapters, platforms and protocols

Multiple Editions
Different editions to suit different requirements and budgets

IBM Support
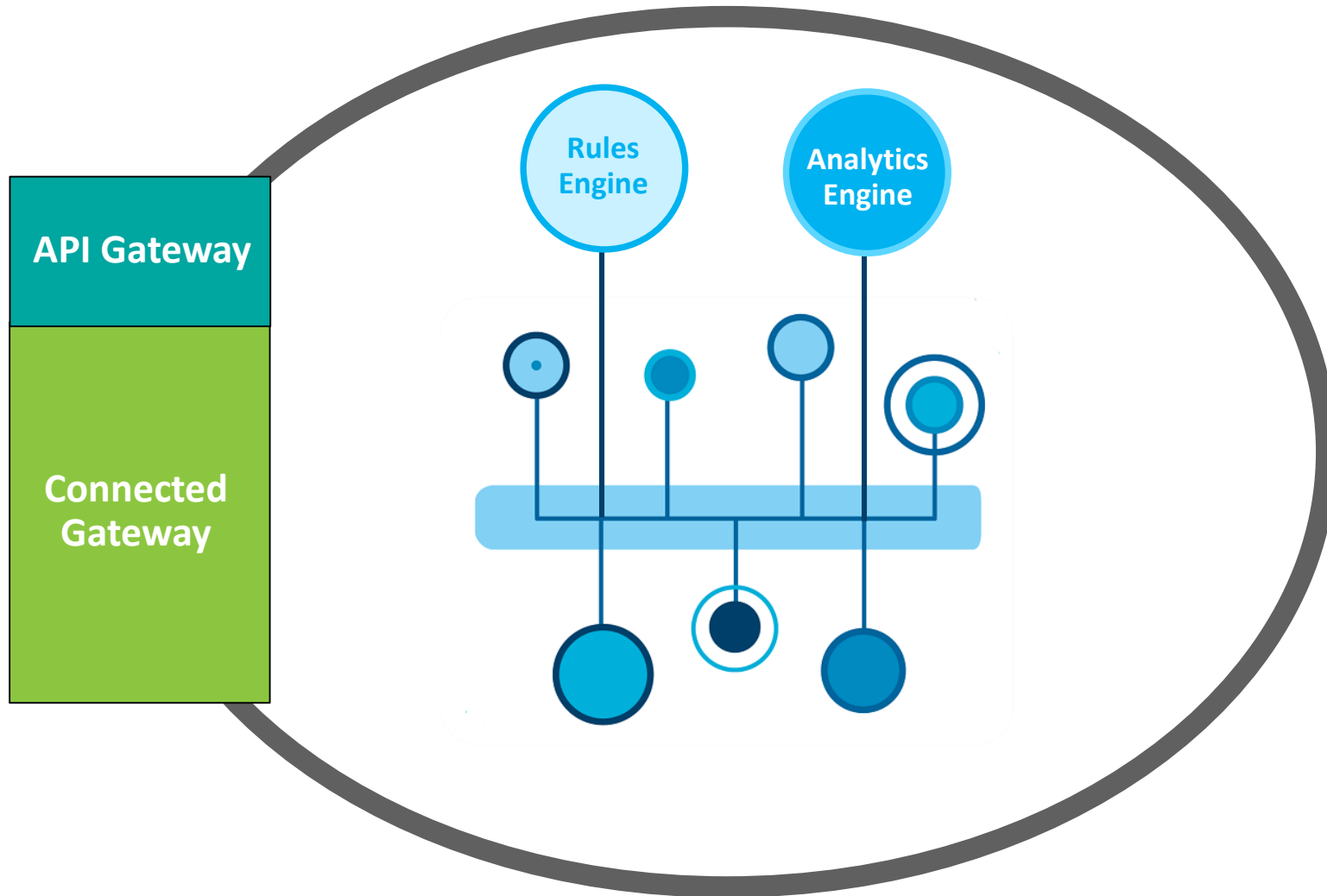Over 4,000 certified specialists, extensive network of Business Partners and ISVs
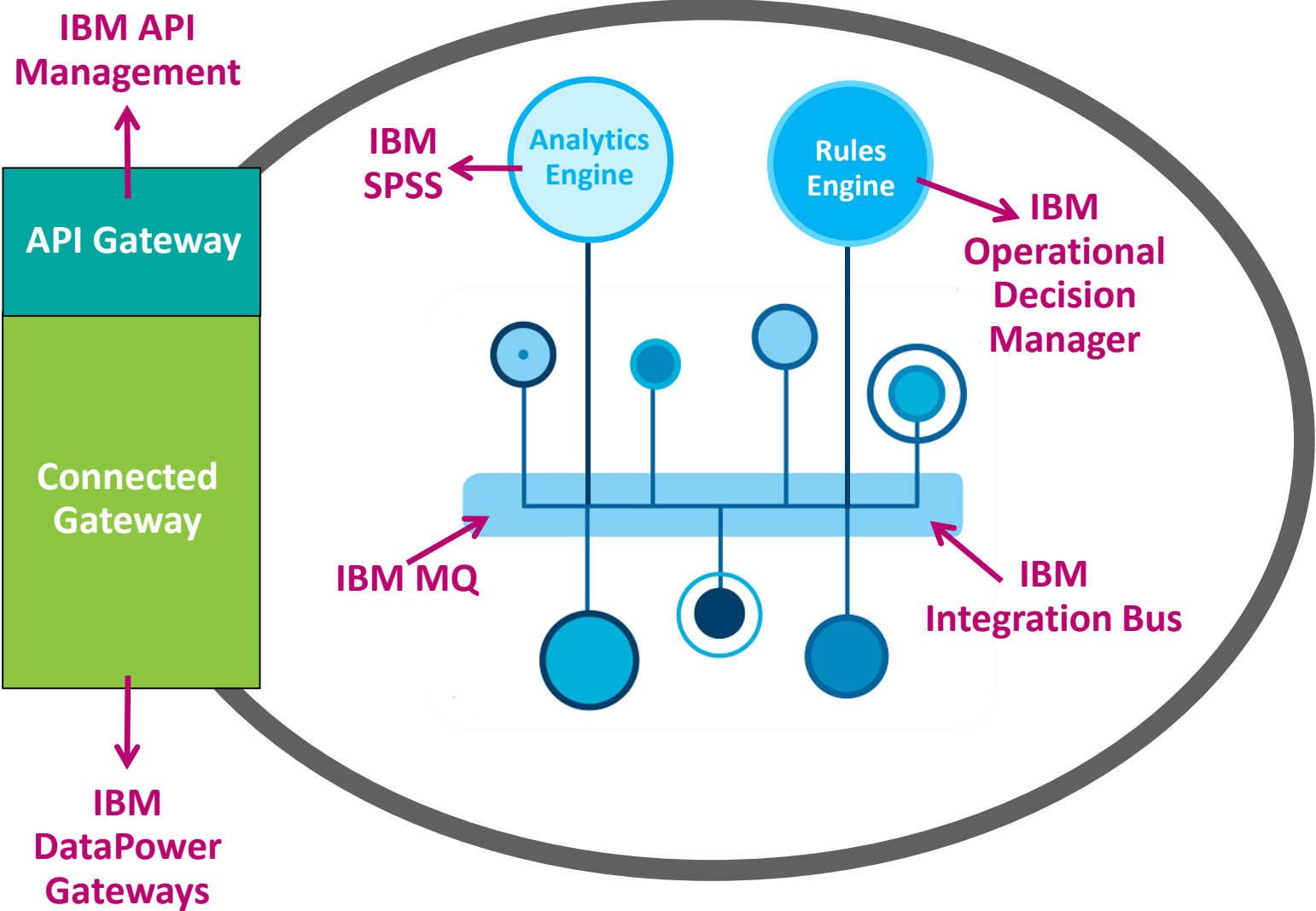
Extended Value
:Built in features that simplify and extend value

De-militarized zone

API Gateway

Connected Gateway

Rules Engine

Analytics Engine

De-militarized zone

IBM API Management

API Gateway

Connected Gateway

IBM DataPower Gateways

IBM SPSS

Analytics Engine

Rules Engine

IBM Operational Decision Manager

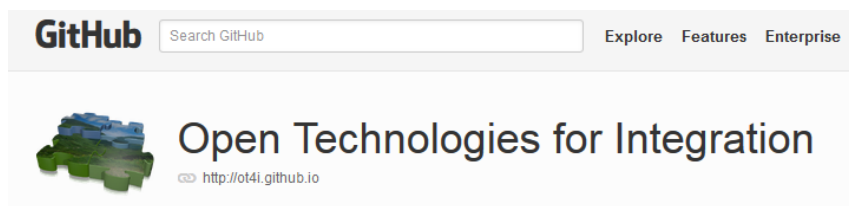**IBM MQ**

IBM Integration Bus
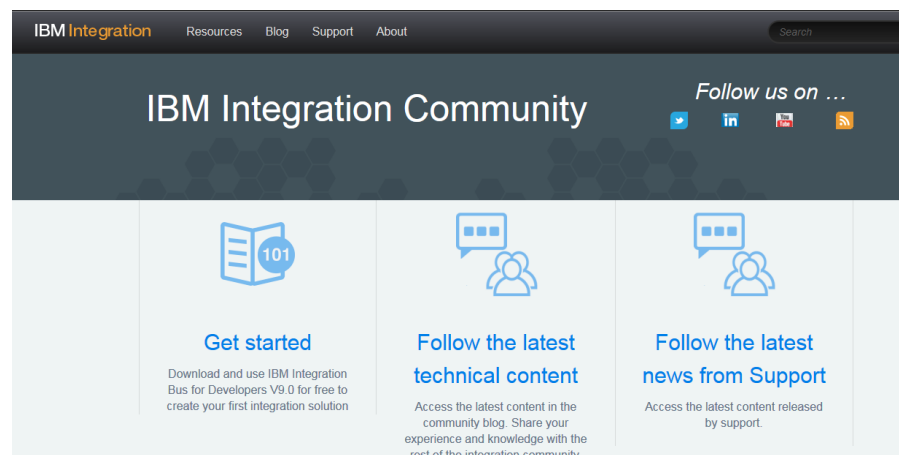
Integration Bus v10 is Open and Available

- OT4I on GitHub: Exploit and contribute to open source integration components

- No charge Developer Edition, open beta

- No charge for development & FVT environments

- Developer Outreach: Integration Community, Forums, Developer micro sites

https://github.com/ot4i

https://developer.ibm.com/integration/

IBM Integration Bus: Offerings to suit all needs

Express

Entry level offering to connect departmental applications and databases.

Standard

Full function edition for customers that do not need to have large numbers of flows or run high volumes of traffic.

Advanced

Full function and scalable edition. High performance connectivity to the broadest range of data and applications

**Why choose IBM Integration Bus***

- "Highly customizable, capable of integrating with data on over 80 platforms, makes integration intuitive."
- "IBM's longevity in the space combined with its overall reach and market strategy make it the leading integration solution vendor in the space today."
- "Entry-level pricing may make it enticing for smaller companies"

* InfoTech Research Group, May 2013
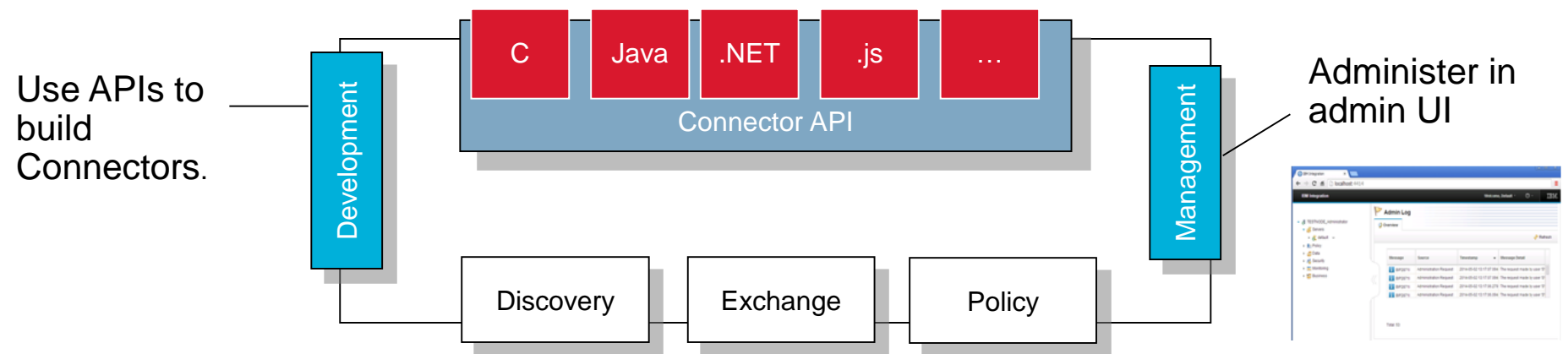
Integration Bus v10 is Productive & Intuitive

- Transform natively in Graphical, Java, .NET, XSLT and more
- Built-in unit testing
- Patterns and tutorials
- Shared libraries
- Web UI for runtime administration
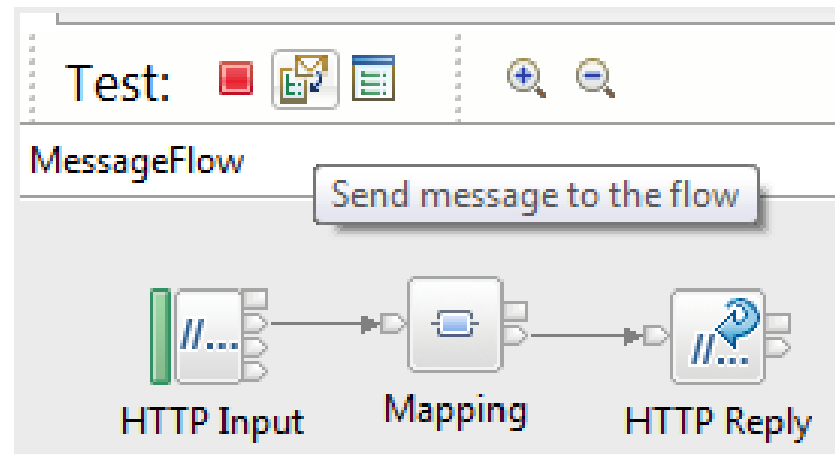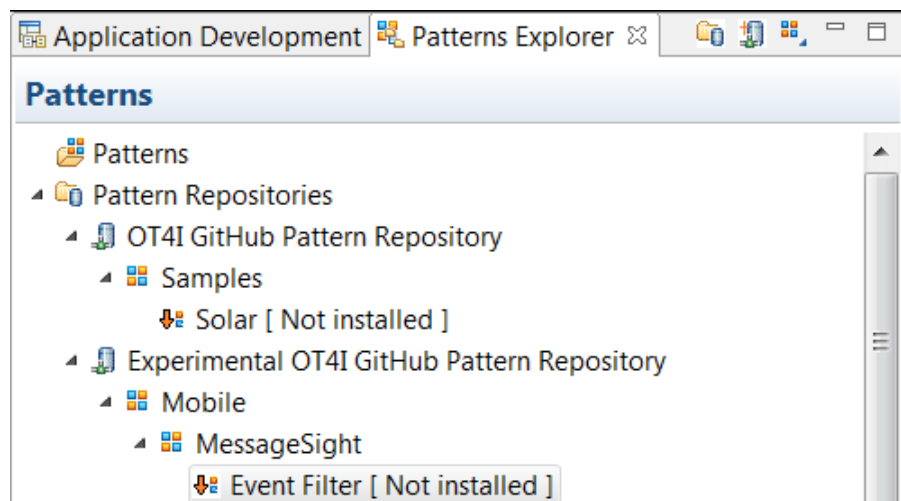
The Connector Framework

- **New endpoints are everywhere**
  - Need different systems to have their input and outputs defined as services, events & documents

- **Framework simplifies connector development**
  - Discovery: Understand & capture the end system inputs and outputs
  - Exchange: Send data to and from these systems, using event, service, document metaphor
  - Policy: Control behaviour dynamically

Use APIs to build Connectors.

Development

| C | Java | .NET | .js | ... |

Connector API

| Discovery | Exchange | Policy |

Management

Administer in admin UI

Integration Bus v10 is Enterprise Grade and Lean

- Zero pre-reqs
- MQ Flexibility
- Radically simplified packaging and installation, install in under 10 mins
- Broad range of OS and hardware platforms
- Simple migration & WESB conversion

Flexible MQ Topologies
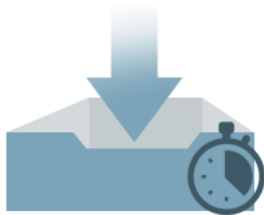
- **Provide more flexible topology options for MQ access**
  - Benefits include simplicity, scalability, availability & migration

- **Supports for Local and Remote queue managers**
  - Input node supports both local & remote queue managers
  - Includes easy-change policy based control of sources
  - Also applies to MQGet and MQOutput/MQReply nodes

- **When a queue manager is not available…**
  - Connection management and retry defined

Local or Remote

MQ Input

QM

IB1   IB2

IB3

QM3

QM1   QM2
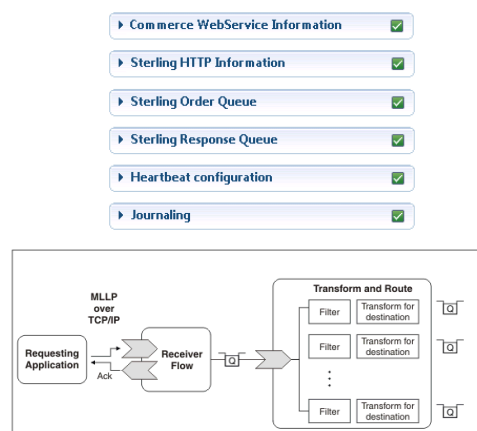
IB

IBM Integration Industry Packs
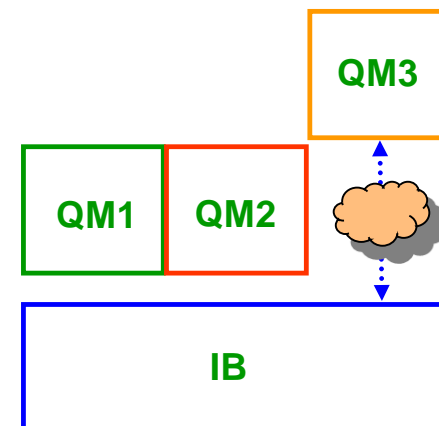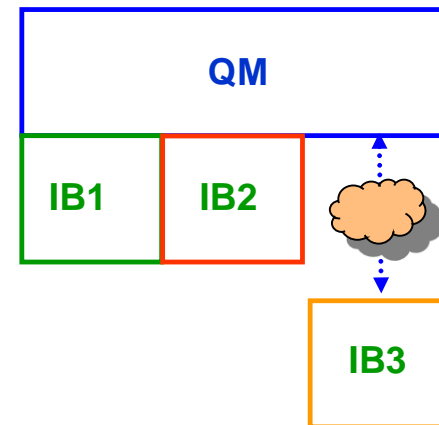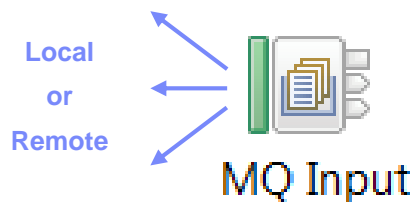
- Each pack is a separately purchased, fully supported software product, built on IBM Integration Bus: Healthcare, Retail, Manufacturing

- Provide industry-specific development accelerators for common industry integration problems

- Provide industry specific pricing e.g. store, factory and hospital per bed deployments

Industry Connectors & data formats

Association for Retail Technology Standards (ARTS)

TLOG (PoS Transactions)

Proprietary Medical Devices

OPC (industrial & Manufacturing)

Health Level 7

Digital Imaging and Communication in Medicine (DICOM)

Integration Patterns

- ▶ Commerce WebService Information ✓
- ▶ Sterling HTTP Information ✓
- ▶ Sterling Order Queue ✓
- ▶ Sterling Response Queue ✓
- ▶ Heartbeat configuration ✓
- ▶ Journaling ✓

MLLP over TCP/IP

Requesting Application — Ack → Receiver Flow

Transform and Route
Filter | Transform for destination
Filter | Transform for destination
Filter | Transform for destination

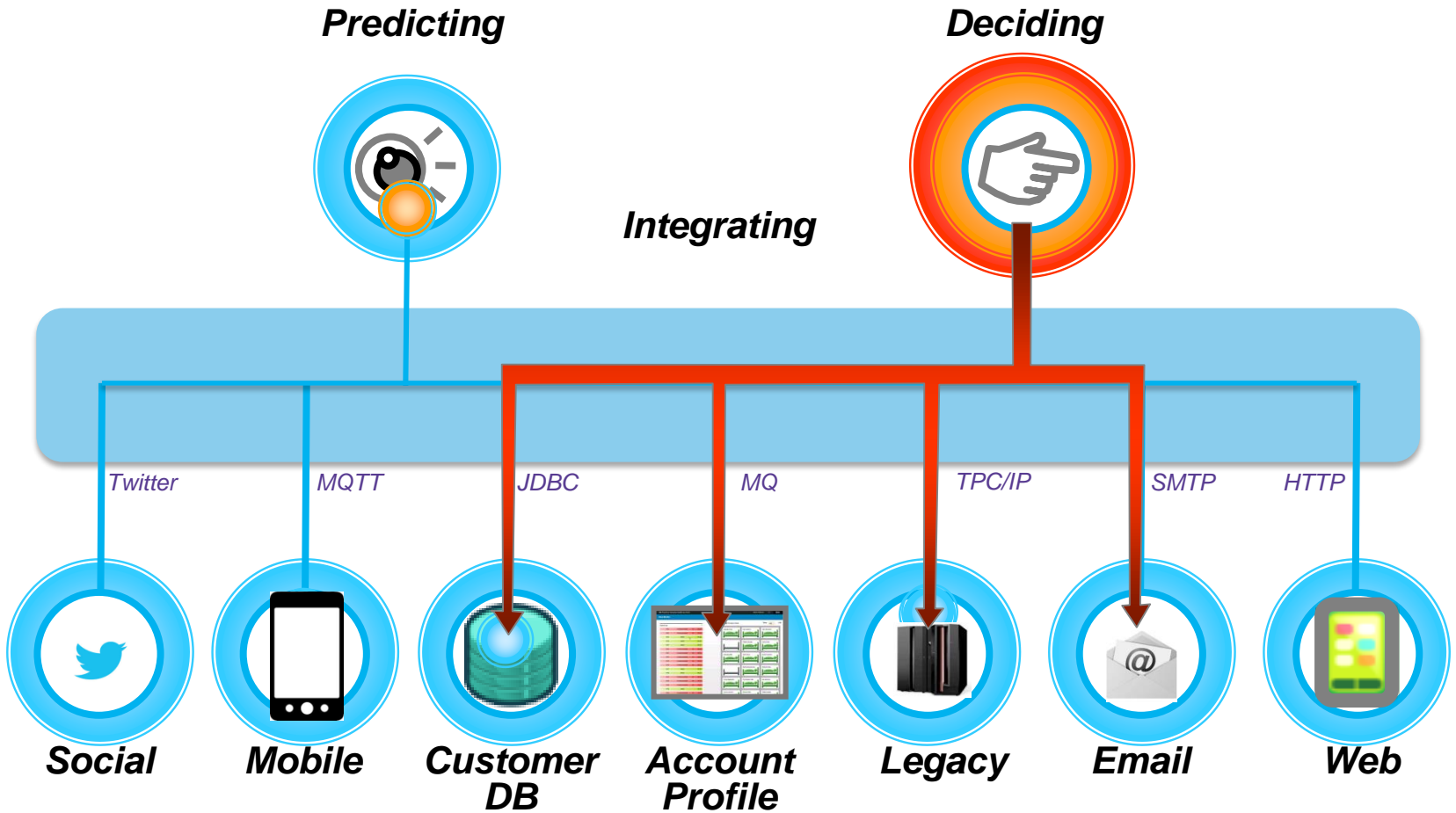### Domain specific Operational Views

Analytics and Business Rules
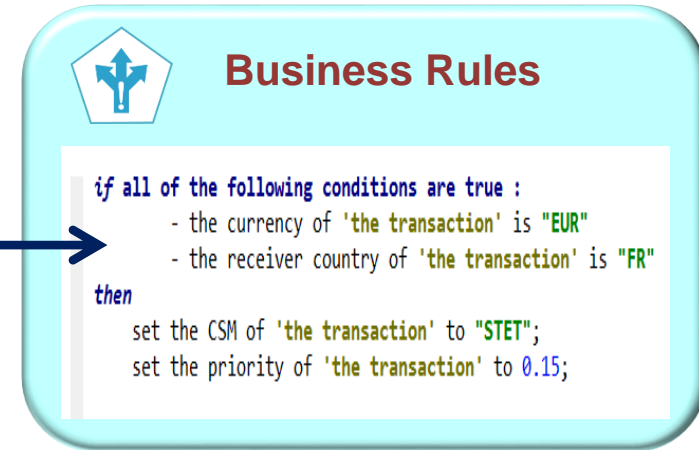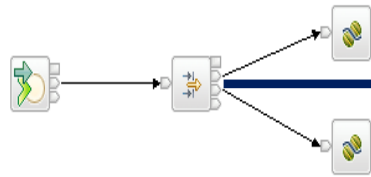
The value of data is greatest as soon as it is created

Reacting quicker than a competitor can give
you a real advantage

Predictive analytics in action

Integration Bus - Predictive Analytics Built In

- **Enable business insight to in-flight data**
  - Near real-time decisions influencing processing flow
  - Invoke Rules with built in decision service nodes to inform routing, validation and transformation within integration solutions

Business Rules

```
if all of the following conditions are true :
        - the currency of 'the transaction' is "EUR"
        - the receiver country of 'the transaction' is "FR"
then
    set the CSM of 'the transaction' to "STET";
    set the priority of 'the transaction' to 0.15;
```

- **As data flows through the bus, score it against a predictive model**
  - Analytics node for model based decision making
  - Find & express patterns in data with analytics models
  - Analytics equivalent to Business Decision node
        Pluggable engine for e.g. R, SPSS, SAS…

Score

Rserve

Cloud Deployment Solutions for IBM Integration Bus
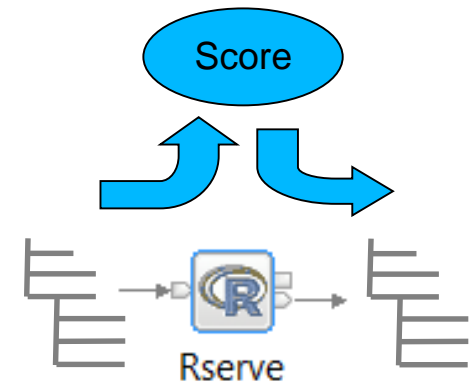
- Full IBM support on popular public IaaS options such as Softlayer, Azure and Amazon
  - Subscription / Rental pricing
  - Chef scripts, IBM UrbanCode plugins simplify provisioning

- Run IIB patterns on IBM Pure Application Service on SoftLayer
  - Fully integrated, managed environment, hosted on IBM SoftLayer
  - Automated provisioning of machines as well as deployment of middleware via IBM Patterns

- IIB Cloud managed offering* on IBM Cloud Marketplace
  - Rent dedicated server instance provisioned with IIB and managed by IBM
  - Development, deployment and admin through current toolset

IBM Cloud

Integrate   Secure

Grow   IBM Managed

* Statement of General Direction in IIB v10 announce

IBM Integration Bus Managed Cloud

Flexible Pricing

- Free trial environment for evaluation

- Paid environments charged by (virtual) machine capacity

Fully Supported and Managed Environment

- IBM provides and manages environment.

  Customer responsible for deploying flows
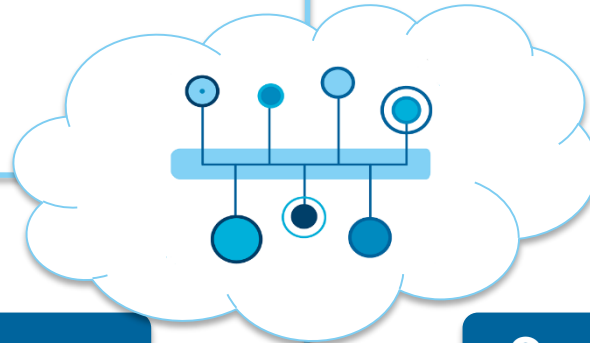
Ease of Use

- Provision a ready to use IIB topology in minutes

- Allows users to focus on developing solutions not on installing and configuring software

Compatible with IIB On-Prem

- Can be used for all IIB use case within the constraints of a cloud environment

Evaluation

Temporary applications

Agile dev/test environments

Host business partner solutions

Subscription based managed software

Variable capacity for seasonal spikes

IBM

IDC Predicts CMOs Will Drive $32.3B In Marketing Technology Spending By 2018

The New Normal

Customer experience was the top marketing technology investment, averaged 18% of total marketing budget in 2014, and is ranked the #1 innovation project for 2015
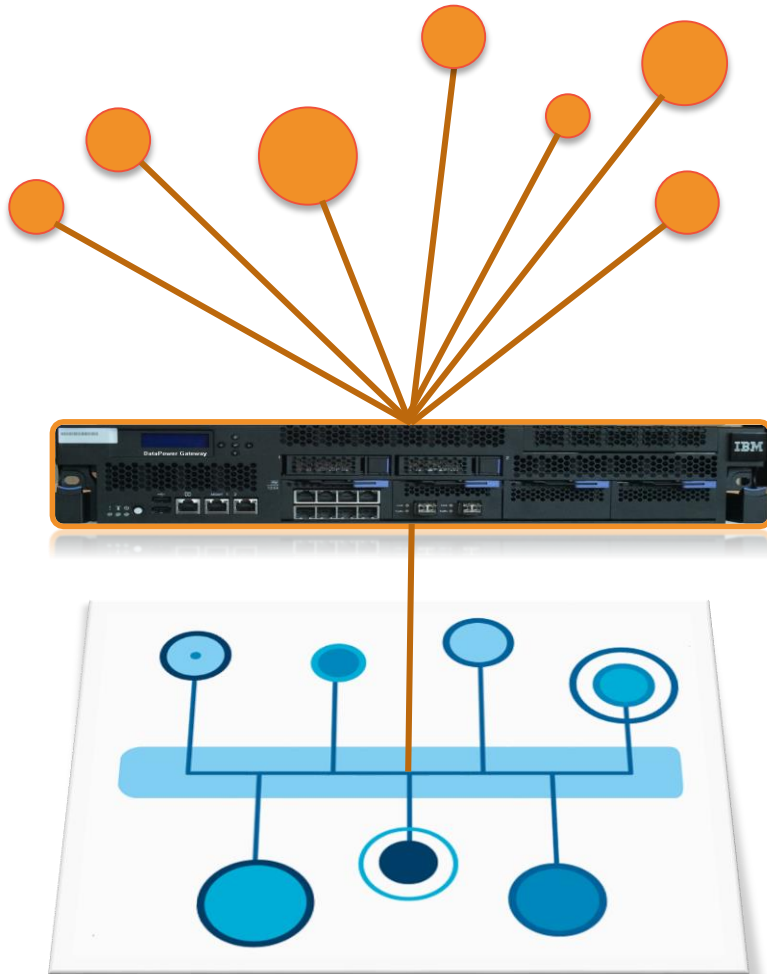
Gartner – Eye of the Buyer

Pressure to differentiate

43% of marketers say connecting with customers is their biggest challenge — followed by serious competition (36%) and revenue/profit growth (33%).

Gartner – Eye of the Buyer

Digital Transformation has different goals

Record

Interact

Systems of record, insight & engagement

IBM

Systems of Engagement

- Continuous Availability for **User**
- **Simple** Query Complexity
- **1,000,000**s of Users
- **Variable** and **Growing** Demand
- Updates **quickly**

IBM Hybrid Integration

Systems of Record

- Continuous Availability for Business
- **MID** Query Complexity
- **1,000**s of Users
- **Predictable** Demand
- Updates **slowly**

Systems of Insight

- Mostly Available
- **Complex** Queries & Analytics
- **100**s of Users
- **Unpredictable** Demand
- **Traditional** changes slowly
- **Non-traditional** change quickly

Digital Transformation creates 2 Speed IT
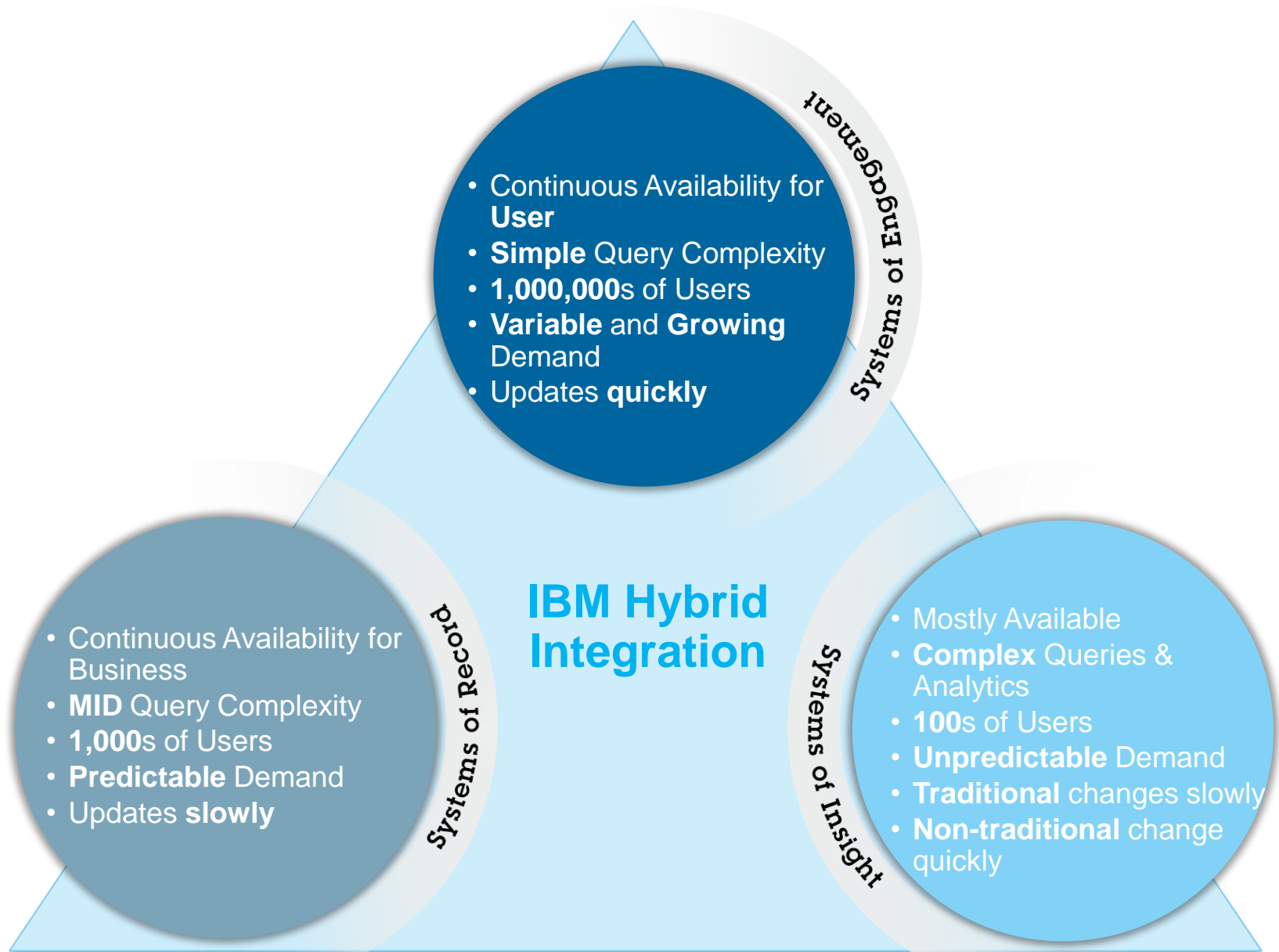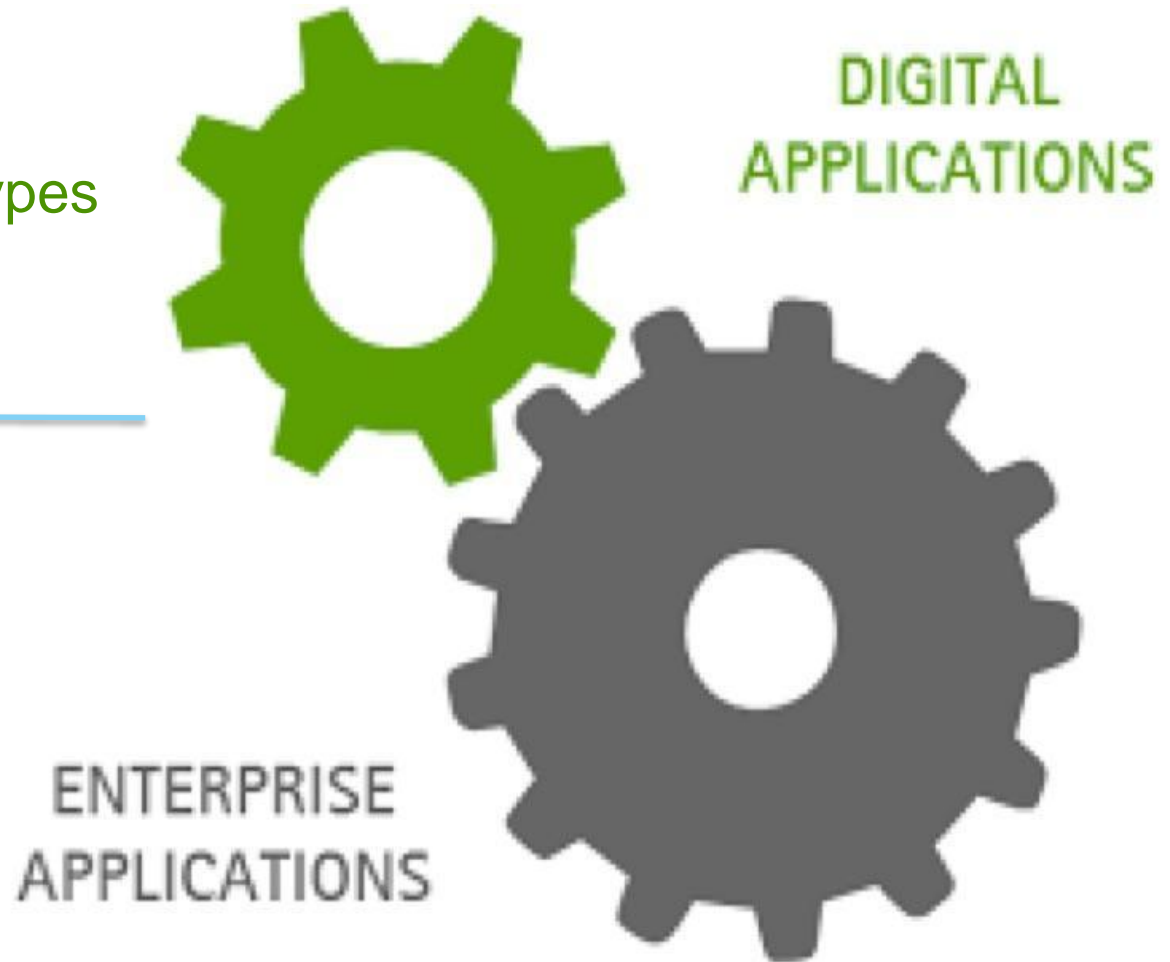
- Explore, adopt, adapt
- Rapid, Iterative prototypes
- Innovate through experimenting

- Always on, always available
- Security, control, and governance
- Transactional integrity

DIGITAL APPLICATIONS

ENTERPRISE APPLICATIONS

Digital & Enterprise Integration Personas

Digital Integration

Startup Developer
Integration requirements driven by needs of building engaging apps.

LOB Developer
Works on tactical lines of business projects e.g. HR. Dealing with SaaS projects, e.g. CRM and analytics and mobile extensions.

Data Scientist
Overwhelmed with new available data sources. Needs to extract data from multiple on-prem and cloud sources, clean, de-dup, manage and analyze

Enterprise Integration

CIO
Aligns IT initiatives with business goals, determine if IT spend meets business initiatives.

Integration Architect
Responsible for providing a platform to create and operate horizontal, standardized, scalable SOE and SOR services.

Integration Developer
Builds integrations between different systems. Builds standardized, scalable, reusable service interfaces and APIs.

IBM Integration for Digital Transformation

IBM Bluemix

IBM API Management

Exposes data for internal/external developers to innovate businesses into the digital world

Cloud Integration Service

Integration driven by need to develop apps for Systems of Engagement

IBM CastIron

Synchs data with SaaS apps to leverage the new cloud economy

IBM Integration enables customers to take advantage of new business opportunities

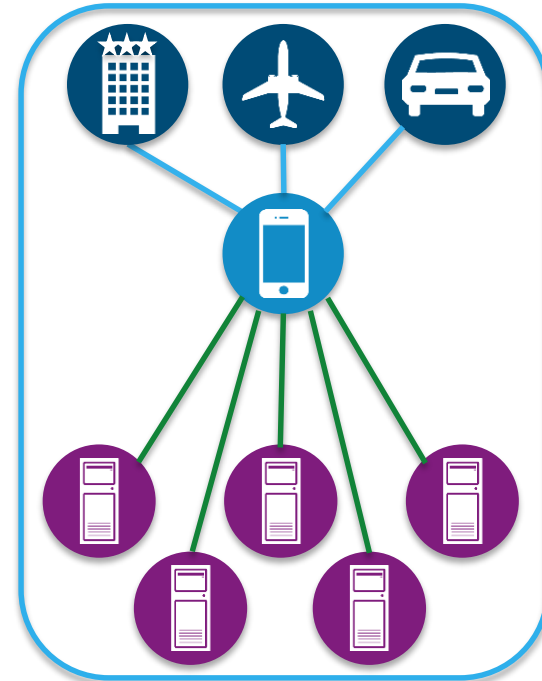# If it's not integrated it's not engaging

Unconnected

Back-end systems

x Bad customer experience

x Negative perceptions

x Lose customers

x Less revenue

Connected

✓ Good customer experience

✓ New opportunities

✓ Repeat custom

✓ More revenue

What are the Pain Points?

- Innovation now starts fast and small within the LoBs. Traditional integration tools are not equipped to support these new projects.

- New projects need access to IT systems to interact.

- New projects are driven outside the CIO office, creating a need for collaboration that does not interfere with speed of innovation and time to market.

So many great new tools in the cloud. I want to build stuff myself, but I need access to data, simple tools, and ways to collaborate with other teams…

Startup Developer

All these new LoB users are building new stuff with my precious data. I need to control what they're doing and make sure it works with my stuff…
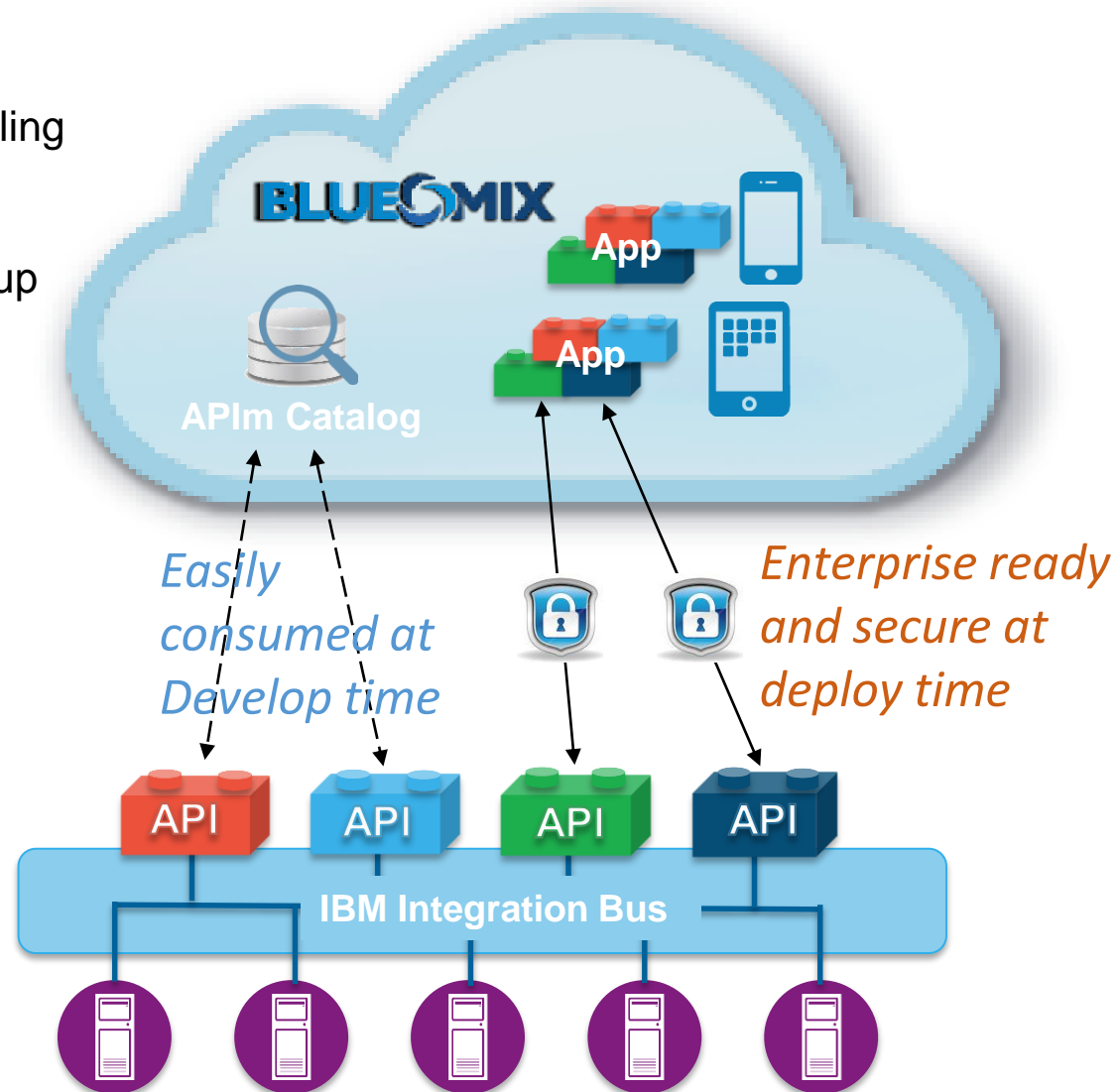
Integration Architect

Bridging the chasm

Bluemix Developer

- Quickly builds SOE apps by assembling and invoking APIs from Bluemix Catalog
- Self service - No SLA's to negotiate up front
- Saves assembled APIs to catalog

IIB Integration Developer

- Rapidly creates APIs that expose SOR interfaces and facade complex integration requirements
- Loads APIs into Catalog, SLA's and governance built in
- Startup Developer can access them
- Search and invoke APIs from catalog to extend reach of bus

BLUEMIX

App

App

APIm Catalog

Easily consumed at Develop time

Enterprise ready and secure at deploy time

API   API   API   API

IBM Integration Bus

Integration Bus v10 - Digital Transformation
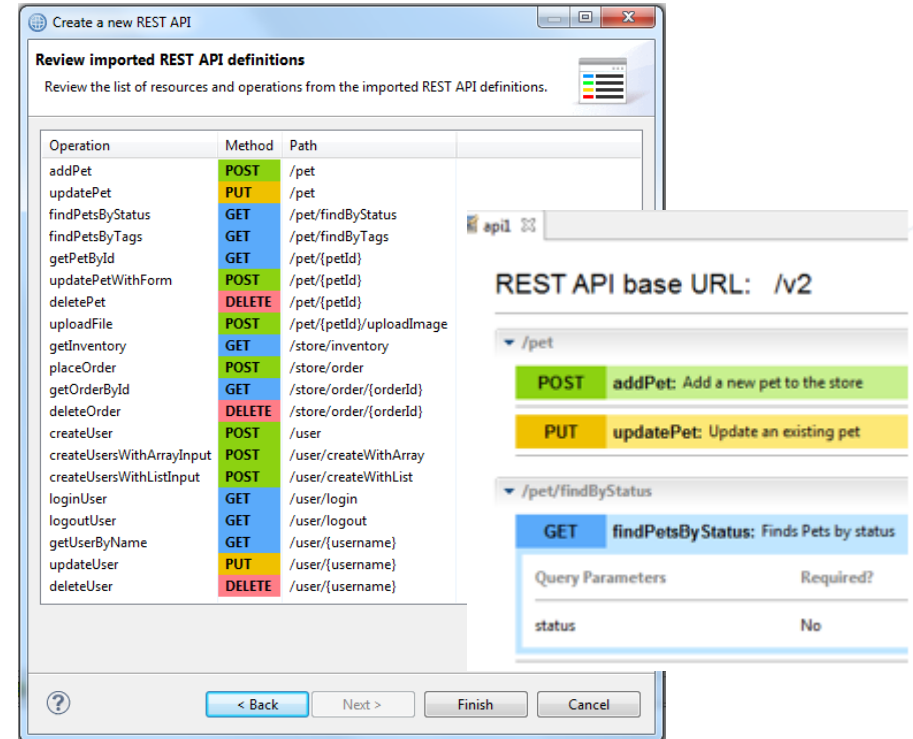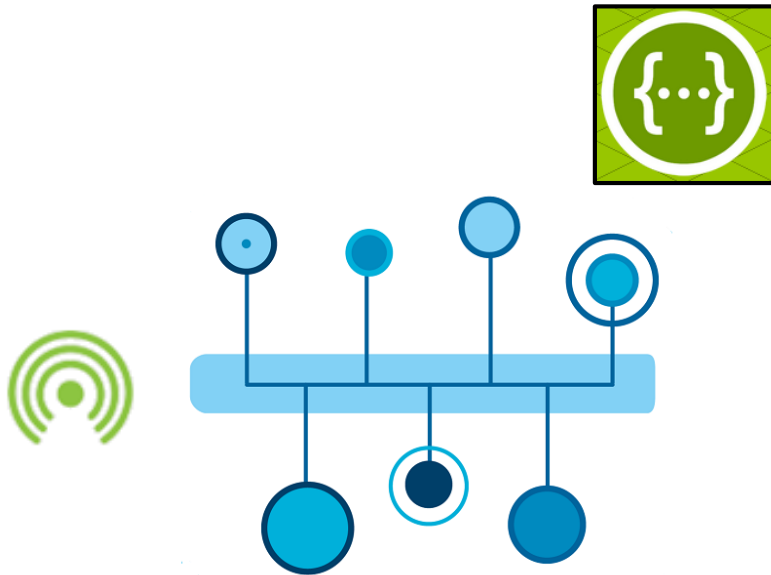
- New REST API Project
- Schemaless mapping
- Invoke integration directly from programs using a API
- Generate JavaScript API from a service
- Import Swagger 2.0 definitions, clients can use existing Swagger tools and projects to retrieve Swagger definitions
- Patterns for rapid mobile development

IBM Integration Bus v10

IBM

Cloud
- Deploy on AWS, Azure, SoftLayer
- Rental pricing
- PureApp as a Service IIB Patterns
- CHEF scripts
- IIB Cloud Offering*

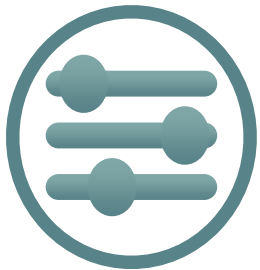## Open and Available
- Free Developer Edition
- Integration Community
- Connector Framework
- GitHub Repository

Mobile
- RESTful Services
- SaaS Java Acript APIs
- Patterns for rapid mobile development
- MQTT Connector

Productive & Intuitive
- Web administration
- Built-in unit testing
- Patterns and tutorials
- Shared libraries

Analytics
- Analyse data in real-time
- Embedded ODM
- Analytics engine integration

Enterprise Grade and Lean
- Zero pre-reqs
- Radically simplified packaging and installation, install in under 10 mins
- Market leading performance
- Simple migration & WESB conversion
- MQ Flexibility

* Statement of Direction as part of IIB v10 announce.

IBM Integration Bus v10 Key Features

IBM

Simplicity

Flexibility

Connectivity

- Radically simplified single package installation and improved support for unit test.
- Flexibly interact with WebSphere MQ (using connection policies) by exchanging messages with local and remote queue managers.
- Simplified administration using an improved web browser user interface, which includes new capabilities for deployment, creating, editing, and attaching policy documents.
- Easy migration, directly migrate installed environments from v7, v8 and v9
- Rapidly create REST APIs and use new graphical data mapper support for the transformation of unmodeled data structures such as JSON messages.
- Reuse common resources such as message models, subflows, Java and ESQL code in shared libraries, leading to significant memory improvements.
- Integrate publish-subscribe based applications using MQ Telemetry Transport messages.
- Easily transform and model data structures with multiple new Graphical Data Map and DFDL features.
- Extend the reach of the IBM Integration Bus with file, database, and security enhancements.
- Create new application connectors and control them using independently managed policies.
- Import and convert existing IBM WebSphere Enterprise Service Bus integration assets so they can run on IBM Integration Bus.
- Share product extensions with the integration community, including an enhanced explorer configured to access a GitHub repository of IBM Integration Bus patterns.