IBM API Connect:

Introduction to APIs, Microservices and IBM API Connect

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What do these companies have in common?

Coffee company goes digital, builds $1.6B payments business, drives 21% of transactions

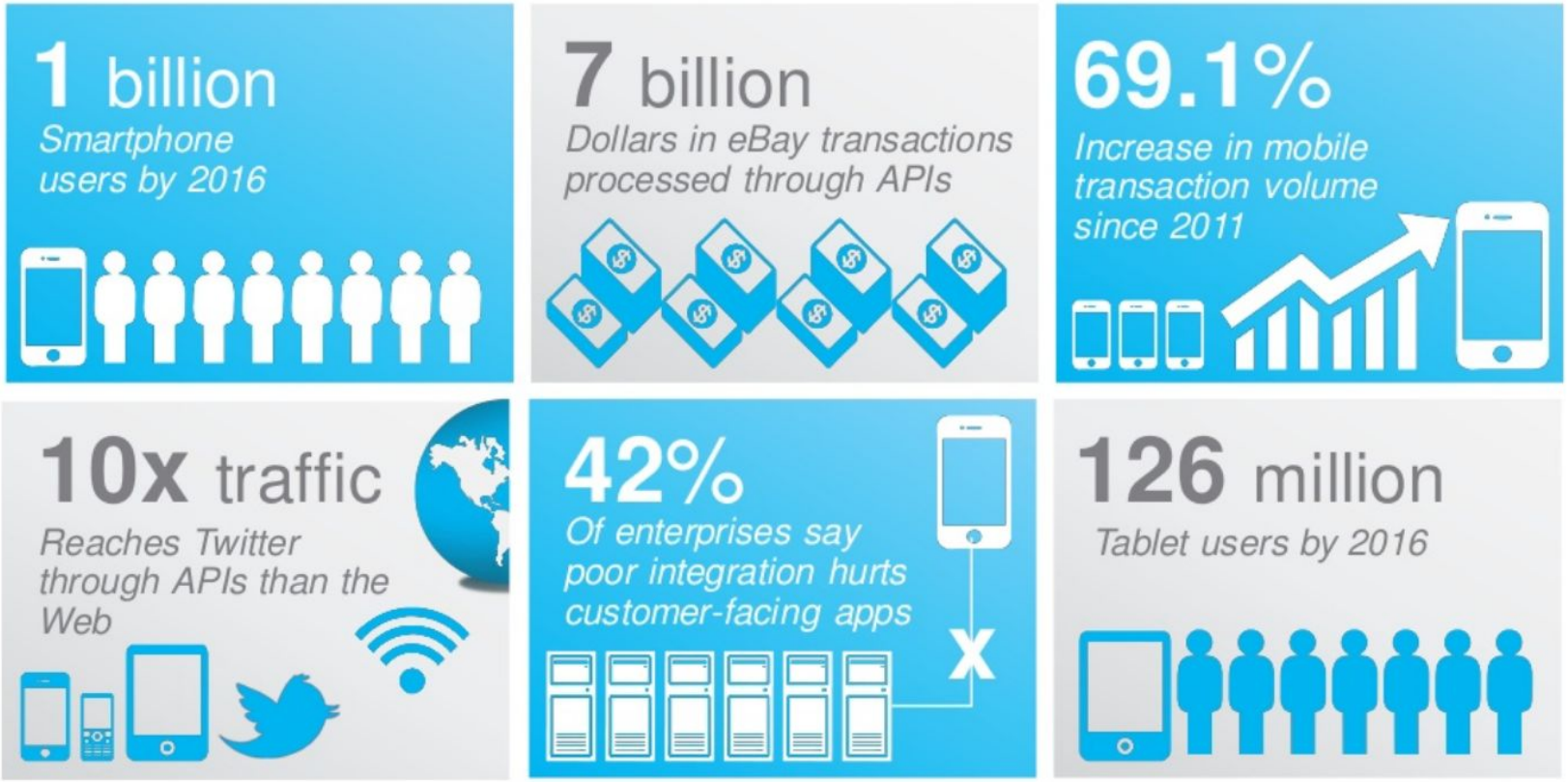
Car company offers connected car, improves driving experience, sells vehicle data to partners

Bank spurs innovation by offering hackathons, integrates rewards program with retailer partners

Digital disruption fueled by APIs

What are APIs and Micro Services

APIs - Our customers expect access to data anytime, anywhere, across a range of devices



Source: 2013 IBM Corporation

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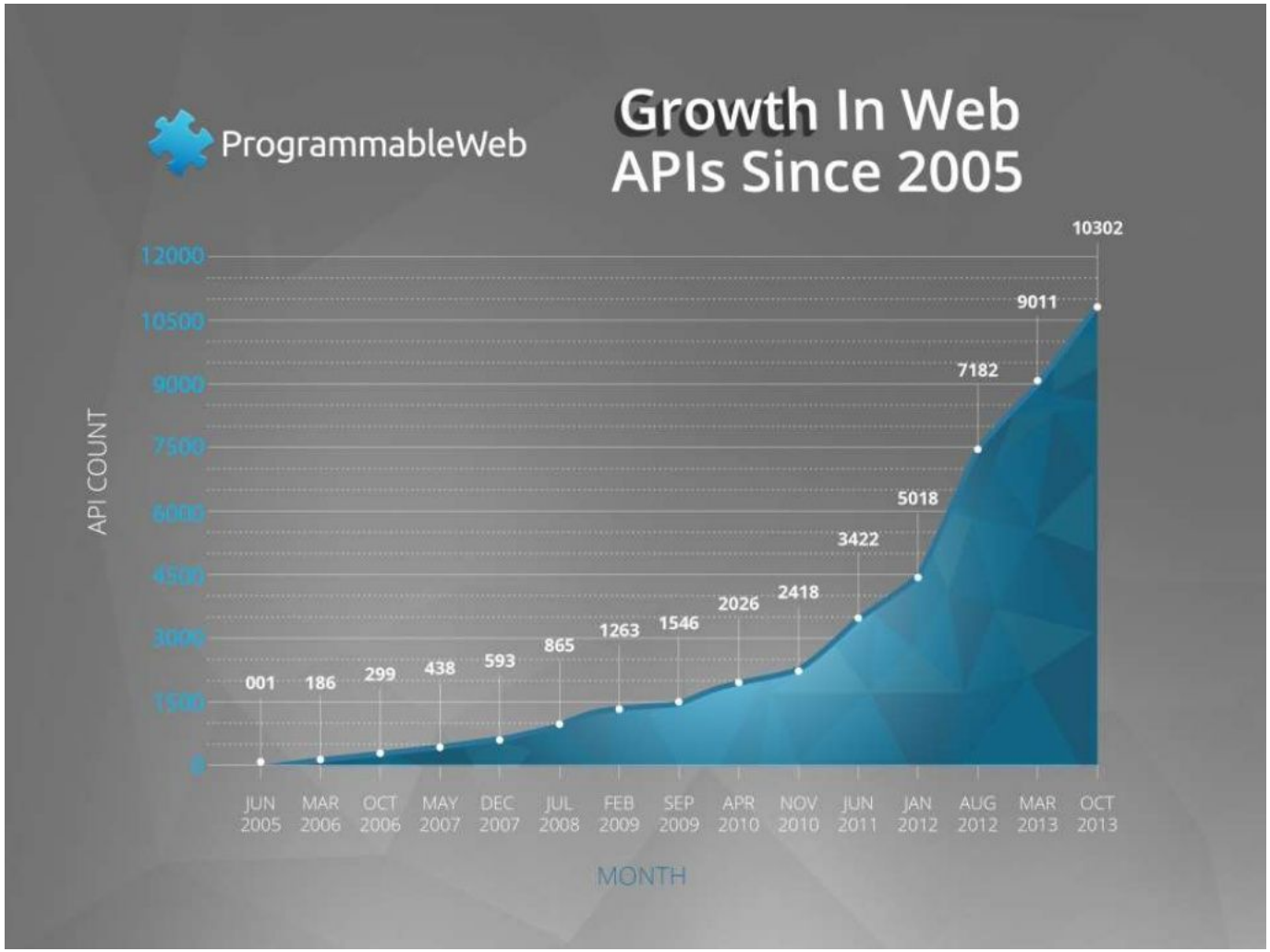
Public API Growth is Skyrocketing: 2005 to 2015



Current Count:
15,838
(as of 9/25/2016)

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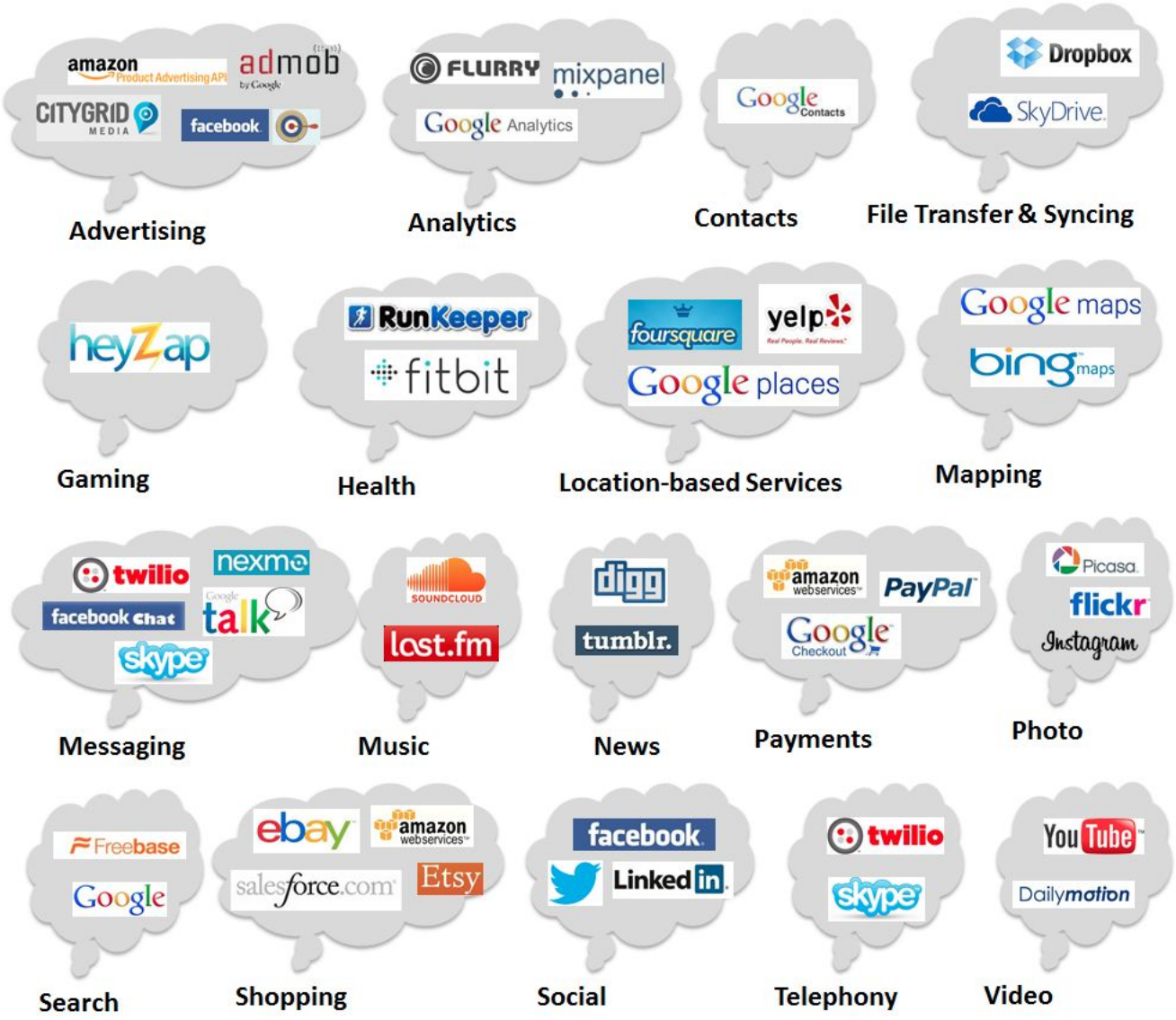
API Providers



Source: API Evangelist

API Consumers

IFTTT

zapier

IFTTT

ifthisthenthat

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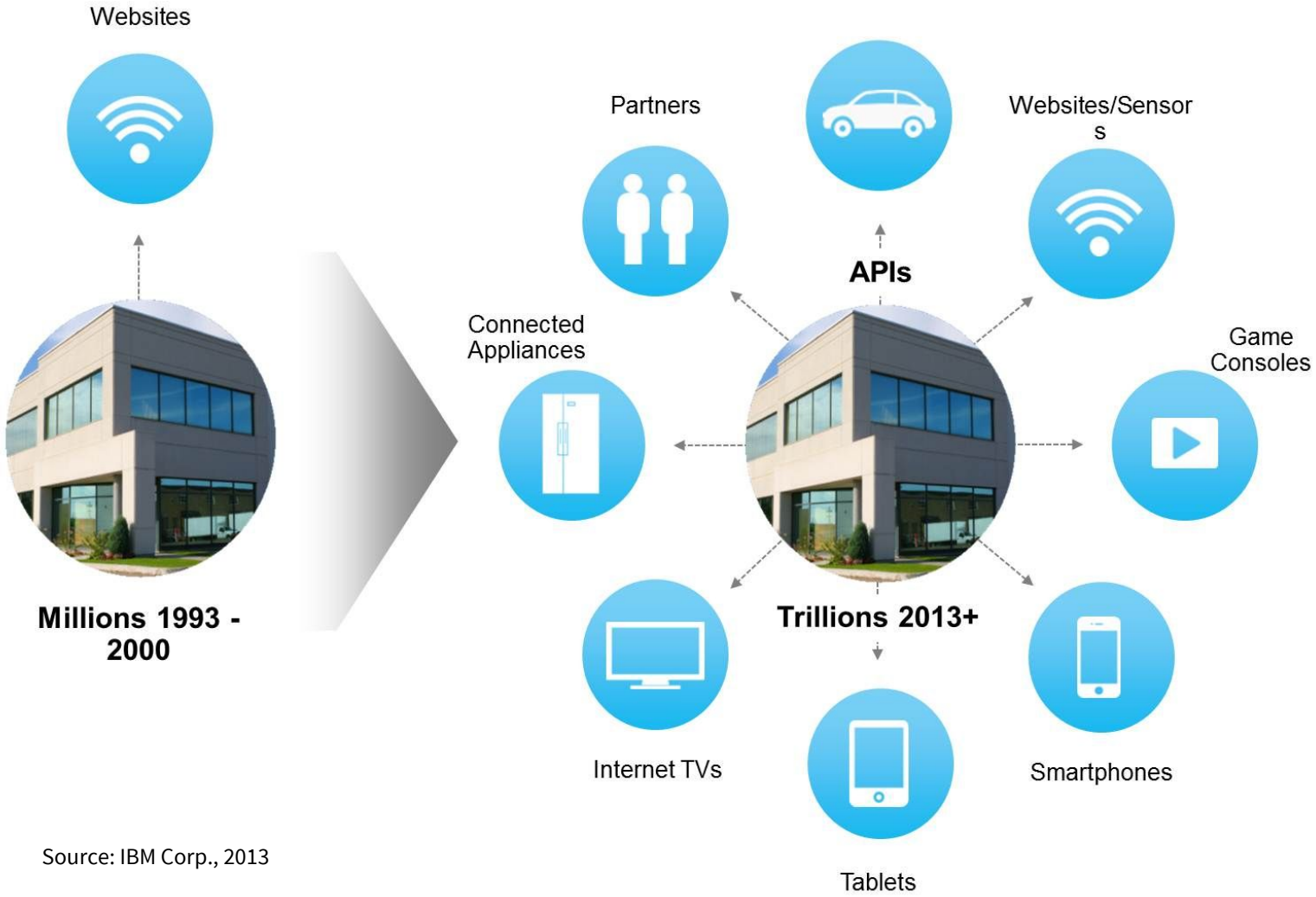
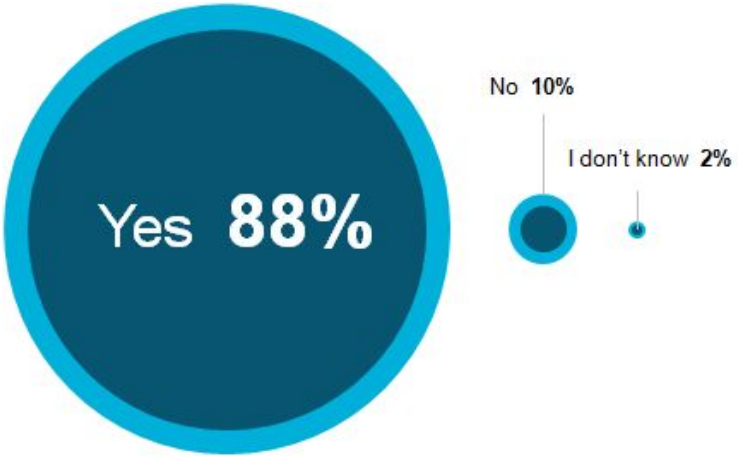
Why APIs?

Why APIs?

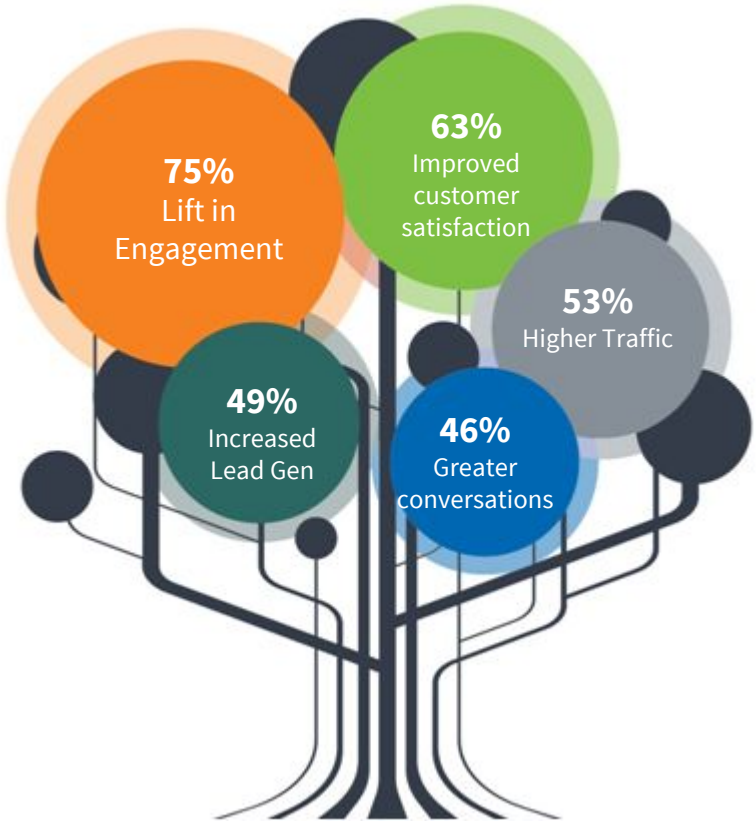


Source: IBM Corp., 2013

Digital Transformation is happening everywhere



Organizations undergoing digital transformation



Benefits of digital transformation

Slack - Is this going to disrupt my work-life balance?

slack :be less busy

All your tools in one place.

Connect all the tools you use to Slack and avoid all that constant switching between apps. Set up your integration so that you **get all your notifications directly within Slack**—from support requests, code check-ins, and error logs to sales leads—all of them searchable in one central archive.

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APIs, the glue of SaaS

200 SaaS companies with API success stories:

The Small Business Web

Batchbook

Constant Contact

intuit

FRESHBOOKS
cloud accounting

"We find that if our customers use any single integration, they are three times as likely to convert to paid."

Sunir Shah, FreshBooks Blog, Aug 25, 2010

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Types of APIs

- These APIs are used exclusively within an organization or company.
- Although adoption of REST is growing strong among all industries within an enterprise, SOAP/HTTP. In most cases, REST will wrap an existing SOAP/HTTP or .NET service.

- These APIs are specifically designed for partners to be able to access business functions in relation to the business relationship of the partnership.
- Examples include agent access to quotes, online catalog, ordering, and reconciliation.

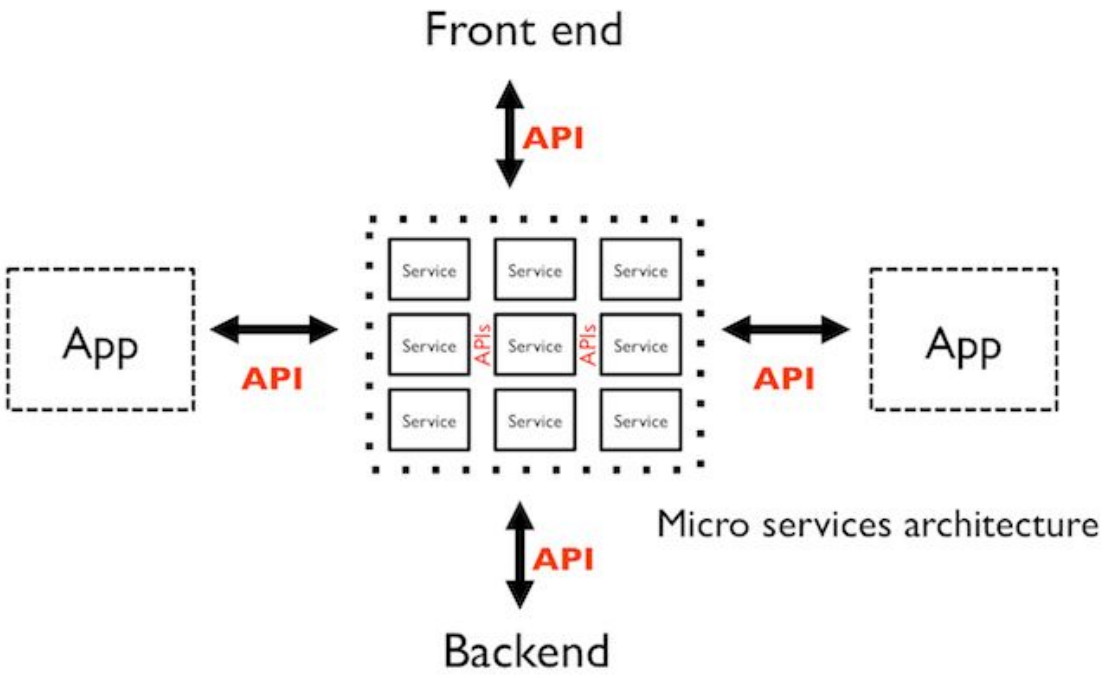
- These APIs are primarily available externally to consumers.
- At this stage of maturity, the growing trend for external APIs are written based on REST/JSON technologies.
- They provide access and integration capabilities that are easier to use than the more industrial-strength capabilities leveraging web services (for example, WSDLs).

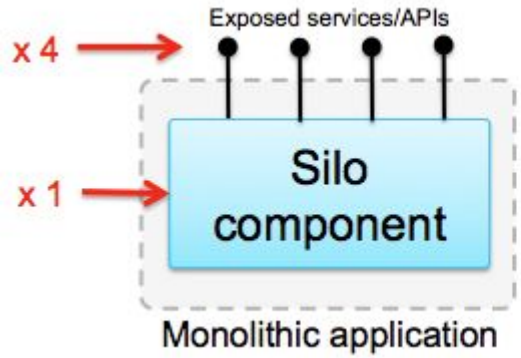
APIs and Microservices - Are they the same?

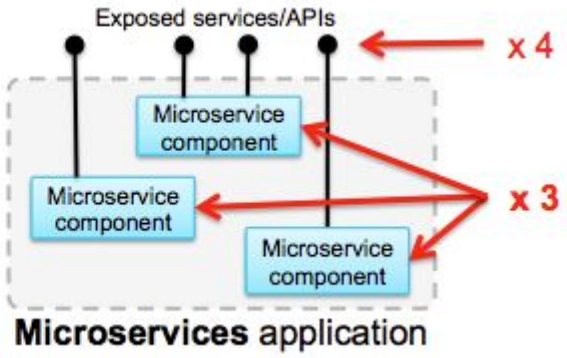
Microservices:

- Services implementing a limited set of functions. Usually purpose built.
- Services that are developed, deployed and scaled independently.
- Shorter Time to Results
  - Scale development and reuse of services
  - Use the right technology for the job
- Increased Flexibility
  - Make changes to the functionality without major disruptions.
  - Continuous Delivery / Continuous Improvements
- APIs are the interfaces that exposes a mix of one or more Microservices. "micro" in microservice refers to the granularity of the internal components, not the granularity of the exposed interfaces (APIs).
- They should have been called “Micro Components”

Micro Services Architecture (MSA)







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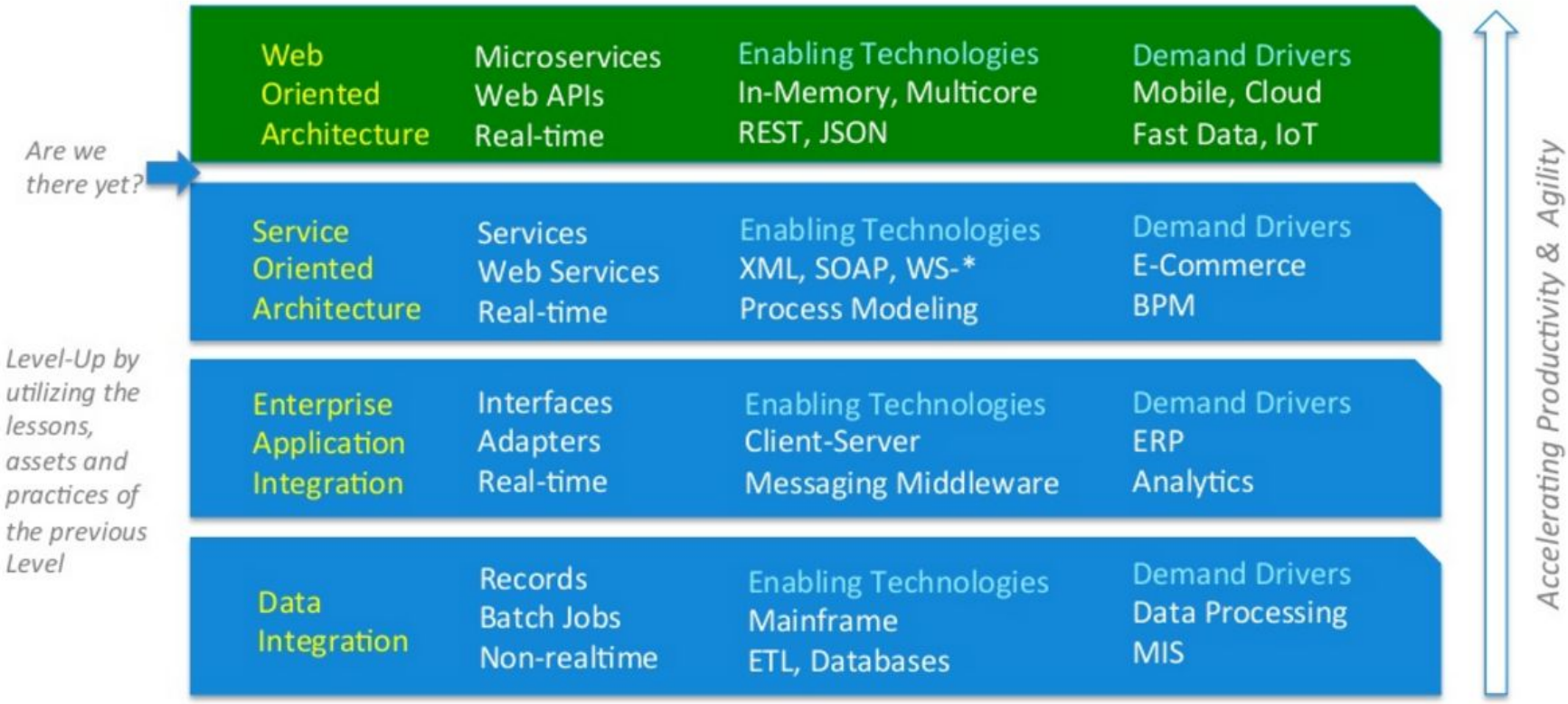
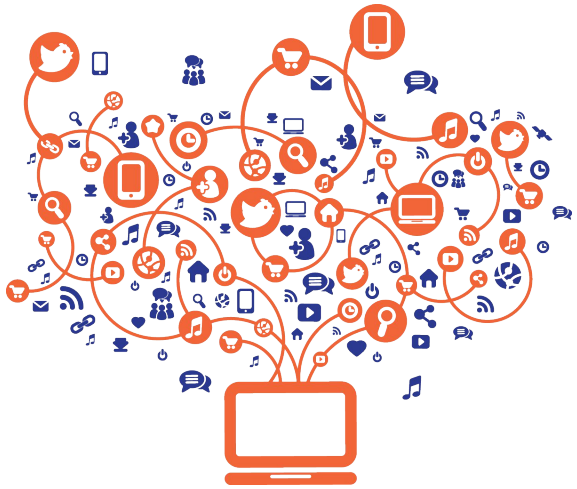
Evolution of Integration



In this Digital Economy, Are you..



BEING DISRUPTED?

THE DISRUPTOR?

API Economy Value Chain - a Digital Transformation Journey

Existing Enterprise IT Investments

Self Service Consumed by Developers

Delivering Differentiated Customer Experiences & Interactions

Interactions vs. Integrations

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Challenges in Digital Transformation Journey

- What business outcome is expected?
- How will business & IT roles be impacted?
- How to manage the consumption of APIs across the enterprise?
- How to provide self-service for internal & external developers?
- How to enforce security at runtime?
- How to throttle and provide controlled access?
- How to introduce change with new versions?
- How do I know who is using my service and how much?
- How much should I charge for access to my service?

API Strategy to:

1. Speed application development

   Via self service library of reusable APIs

2. Securely expose systems of record

   Apps and data to Mobile, IoT, & hybrid cloud apps

3. Publish APIs to expand brand reach

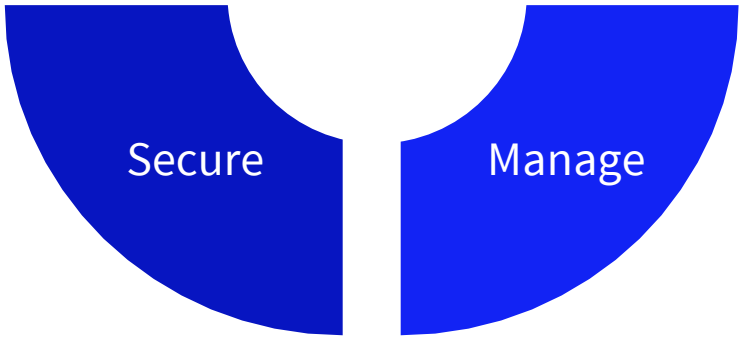
   Tap into developer & partner ecosystems

4. Enable new business models

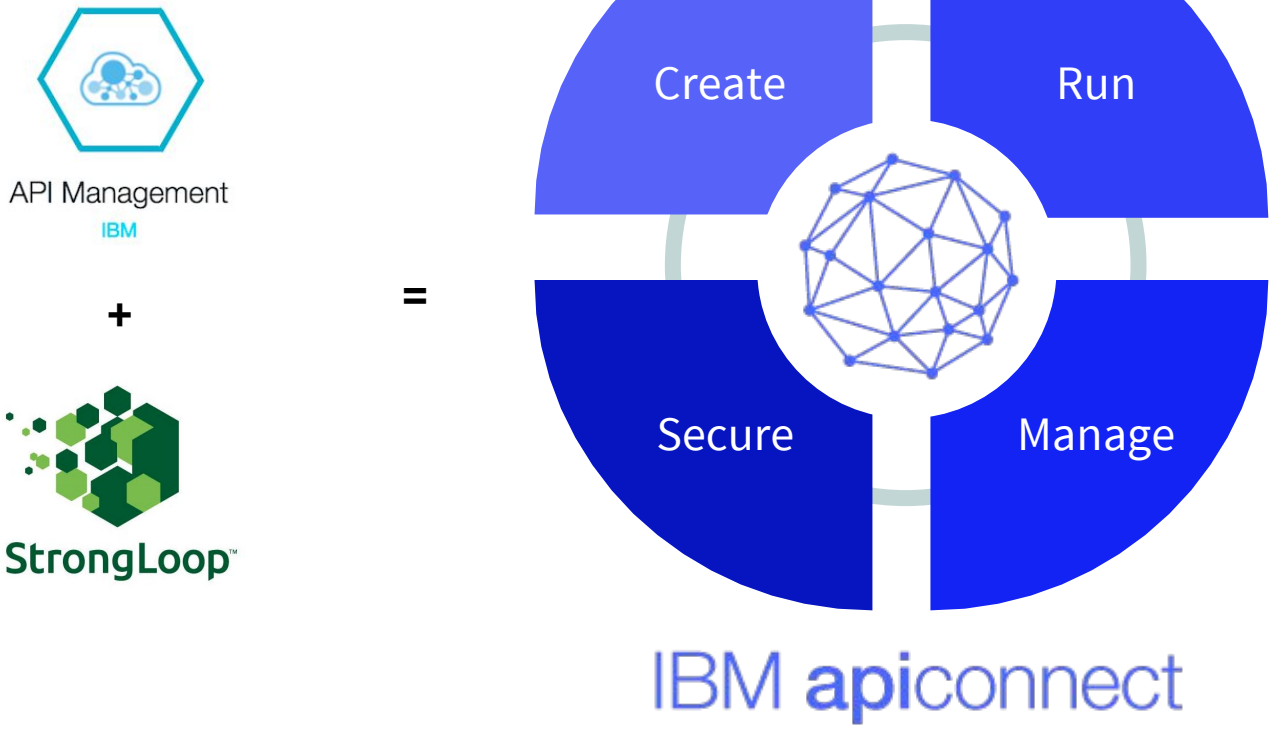
   Monetize existing and new data & algorithms

Other API Management Offerings

- Traditional offerings limited to Manage and Secure
- “Good Enough” Security
- You are left to figure out the rest yourself



IBM apiconnect: Simplified & Comprehensive API foundation



Easily discover existing APIs and back-end data sources and create new APIs and microservices based on the popular open-source Node.js, Express and LoopBack® frameworks

All managed from a **single unified console**

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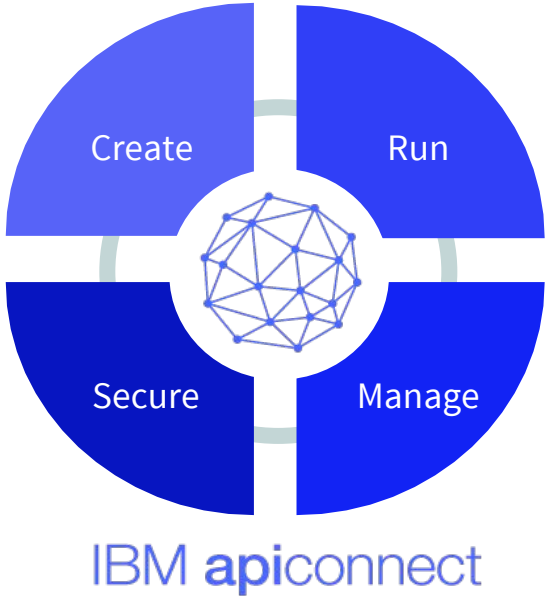
IBM apiconnect: what is it? & what can it do for us?

What is API Connect?

An integrated creation, runtime, management, and security foundation for enterprise grade APIs and Microservices to power modern digital applications



What does API Connect provide?

- Automated, visual and coding options for creating APIs
- Automated discovery of system of records APIs
- Node.js and Java support for creating Microservices
- Integrated enterprise grade clustering, management and security for Node.js and Java
- Lifecycle and governance for APIs, Products and Plans
- Access control over API's, API Plans and API Products
- Advanced API usage analytics
- Customizable, self service developer portal for publishing APIs
- Policy enforcement, security and control

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Definitions: System APIs and Interaction APIs

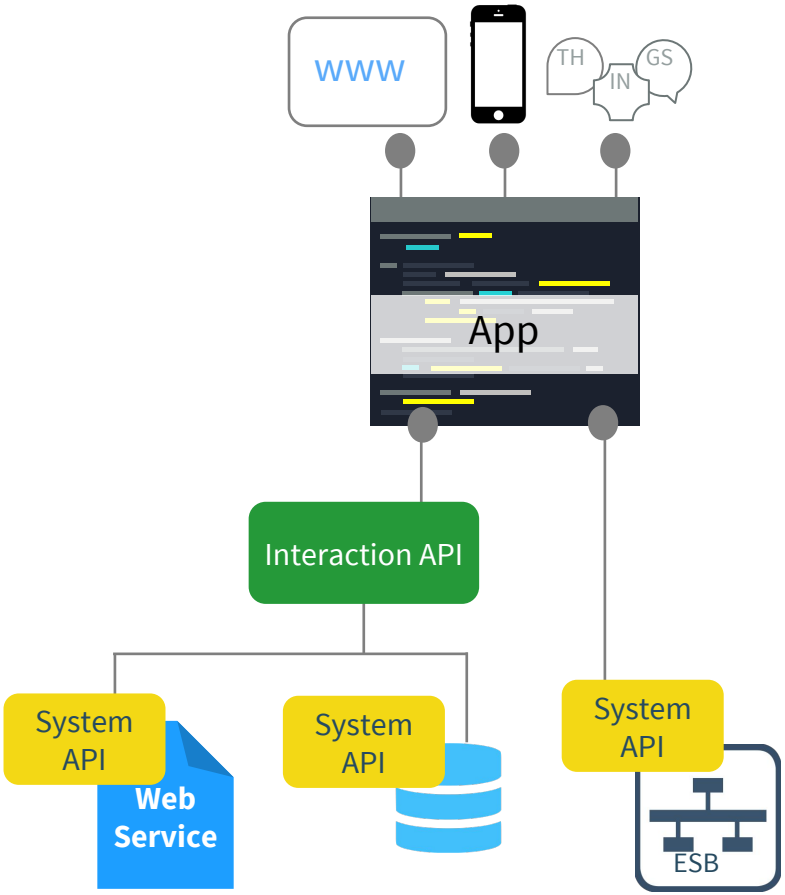
System APIs:

APIs that pass through data from a system of record unchanged

Interaction APIs:

Invoke one or more System API's or data sources, and manipulate the returned data with new logic

Promote reuse across new applications



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Already have APIs?

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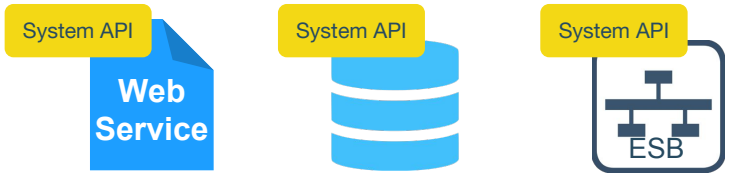
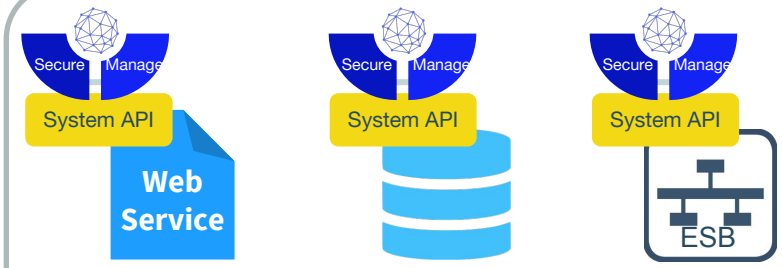


Companies already have web services, which can be exposed as APIs

Software vendors are adding API support to existing products to pass through data from a system of record unchanged; aka System APIs

Vs.

Manage and Secure APIs



Added Management & Security to protect enterprise assets

System APIs should be managed and secured to protect enterprise systems:

- Where are they published?
- Which developers can discover them?
- Which applications can access them?
- How frequently?
- At what cost? Etc…

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Create & Run - Why are they important to be integral part of an API platform?

Digital Business Relies on Enterprise Grade APIs

Interaction APIs must be Created & Run

Existing & System APIs are invoked & their results manipulated to create new reusable Interaction APIs

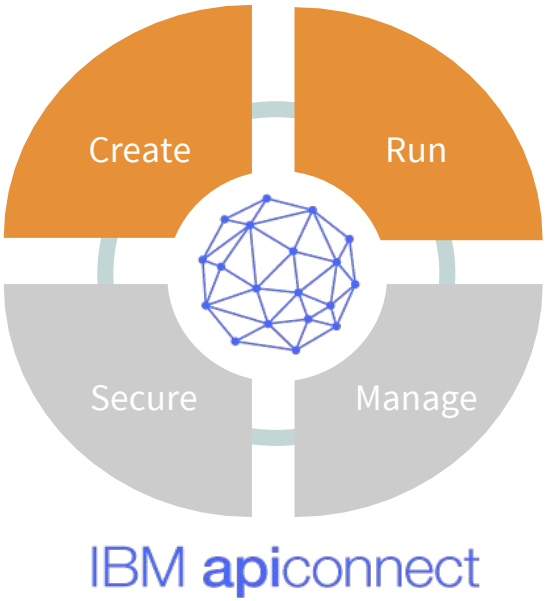
APIs are (small) Applications with

Similar lifecycles:

Creating a new API requires the same iterative process as creating a modern app

Different scale needs:

APIs face web scale demands of the Digital economy, with millions of requests per month; A proven runtime approach is needed to meet these demands



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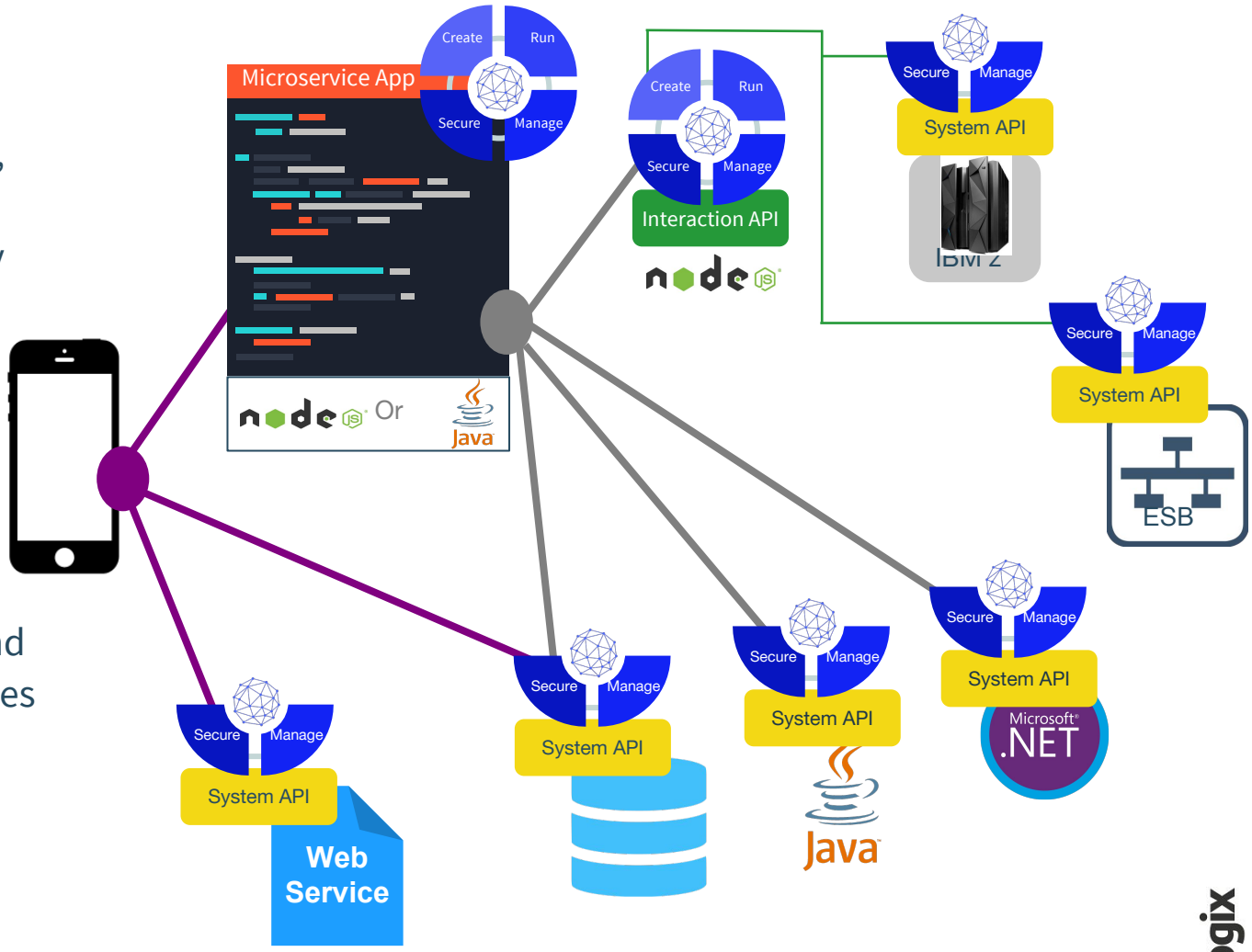
IBM apiconnect powers Digital Applications

Manage and Secure existing or System APIs, regardless of back end language or technology

Create, Run, Manage and Secure new Interaction APIs

Create, Run, Manage and Secure new Microservices in Node.js or Java



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Integrated Experience across the entire API Life Cycle

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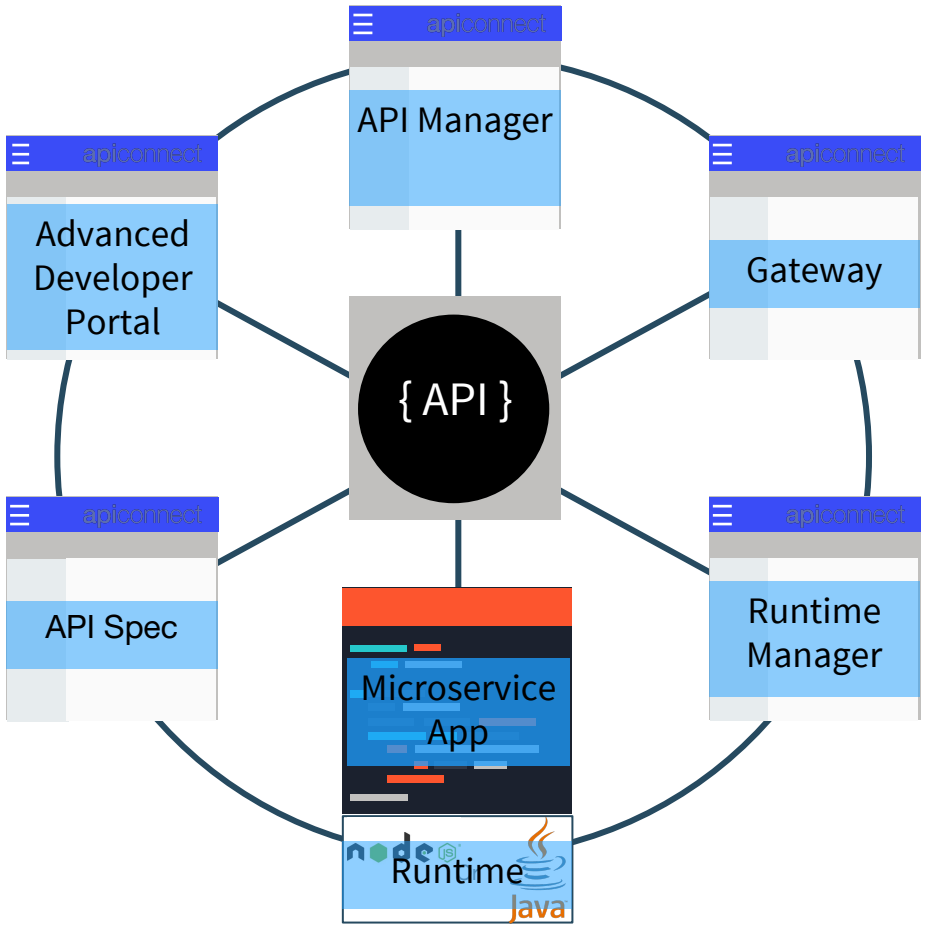
All components are integrated and aware of each other; Changes in one stage of the API lifecycle are automatically reflected in other components of API Connect

Deploy, monitor & scale components together for optimal performance

Unified user experience across the API lifecycle



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IBM apiconnect Ver 5.0, GA 3/15/2016

IBM apiconnect

Create. Run. Manage. Secure.

Enterprise focused

Comprehensive API Solution

End-to-end integrated experience across API lifecycle - create, run, manage, secure, socialize & analyze APIs through a single offering on-premise, in the cloud or hybrid

Built-in Assembly UX & Policies

Use a visual tool to compose API policy flows & utilize new built-in policies to secure, control & optimize API traffic without writing custom code or touching the gateway

New Intuitive Interface

Modernized user experience to reduce complexity, improve performance and allow quicker creation, management, and enforcement of APIs

Create & Run APIs & Microservices

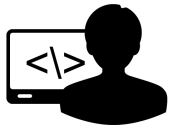
Rapidly create Microservices, connect to data sources, and expose them as REST APIs via model-driven approach. Run Node.js & Java runtimes via unified operations & management

First Class Developer Experience

Empower developers to create and test APIs locally on their laptops in minutes and stage it to on-premise or cloud deployment

Developer Toolkit

Enable automated scripting & DevOps automation through a command line environment for defining, managing & deploying APIs



Developer focused

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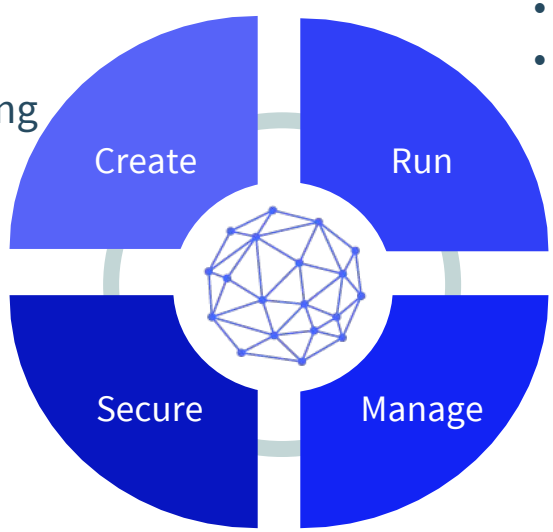
IBM apiconnect: Capabilities Delivered

- Rapid model-driven API creation
- Datasource to API mapping automation
- Standards-based visual API spec creation in Swagger 2.0
- Local API creation and testing
- On-cloud & on-premises staging of APIs, Plans & Products

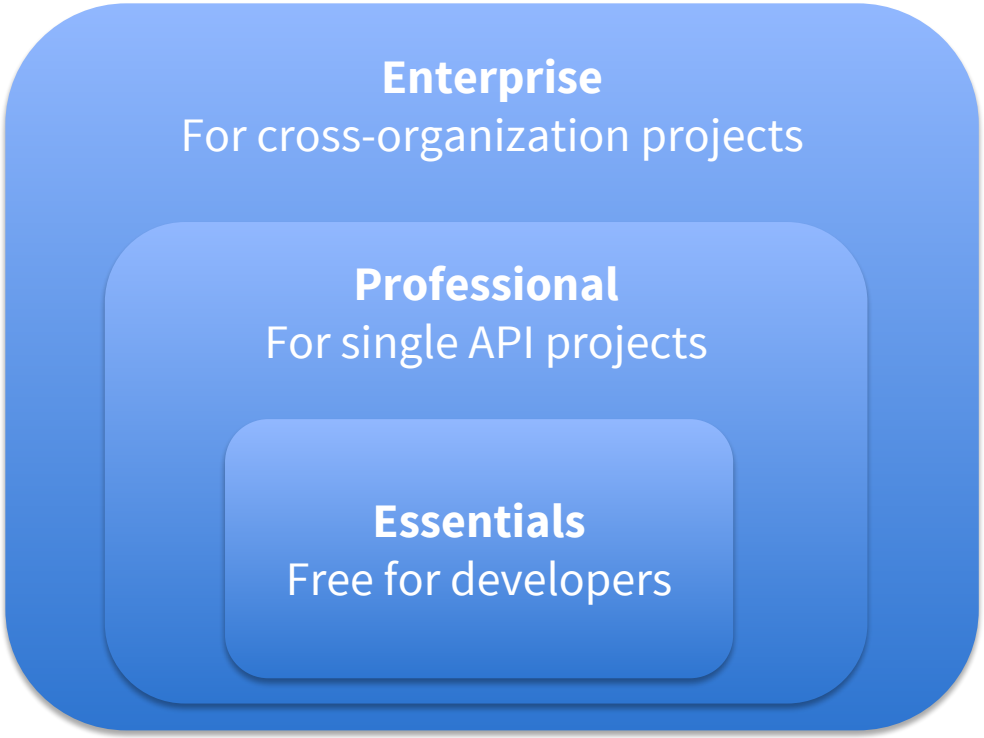
- Node.js & Java Microservice runtime
- Node.js & Java integrated runtime management
- Enterprise HA & scaling
- On-cloud & on-premises staging of Microservice applications



- Policy enforcement
- Enterprise security
- Quota management & rate limiting
- Content-based routing
- Response caching, load-balancing and offload processing
- Message format & transport protocol mediation

- API discovery
- API, Plan & Product policy creation
- Self-service, customizable, developer portal
- Advanced Analytics
- Subscription & community mgmt.

IBM apiconnect Offerings: Deployment Options



IBM apiconnect

Deploy where it's most convenient for you:

- Deploy on IBM Bluemix
- Deploy to 3rd party clouds
- Deploy on-premises

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A few takeaways

- The API Economy is a HOT topic with our customers
- Remember it is interactions that matter, but not integrations
- Enterprises are migrating from SOAP & XML to REST & JSON
- Understand the differences between EAI vs. SOA vs. ESB vs. Microservices
- Remember the 4 aspects of an API Strategy
- Go back to work and figure out some Use Cases in your business for API

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Runkeeper

Sources

- www.ibm.com and related websites including, but not limited to IBM Partnerworld and Developer Works
- www.programmableweb.com
- www.apigee.com
- www.mulesoft.com
- IBM Channel on YouTube

Thank You

API Jumpstart Offerings from OpenLogix

(A) Discovery and Planning Workshop

Target: LoB Decision Makers, Chief Architect

Itinerary:

- Fully interactive onsite workshop to define and/or refine your business goals. Dive deep on infrastructure, APIs, capabilities and constraints. Use Design Thinking techniques to examine API strategies customized for your business and industry.

Outcome:

- Actionable plan for you to execute on a pilot project imminently with longer term recommendations on next steps.

Duration: 3 Days

Price: $10,000 US, local pricing applies

(B) - API Connect Developer Quickstart

Target: Technical Developers

Itinerary:

3-day deep technical enablement workshop focused on API Connect. Maximum attendees: 10.

Outcome:

At the end of the workshop, your technical teams will be thoroughly trained on all aspects of API Connect. They will have skills that they can immediately use.

Duration: 3 Days

Price: $10,000 US, local pricing applies

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API Reference Model