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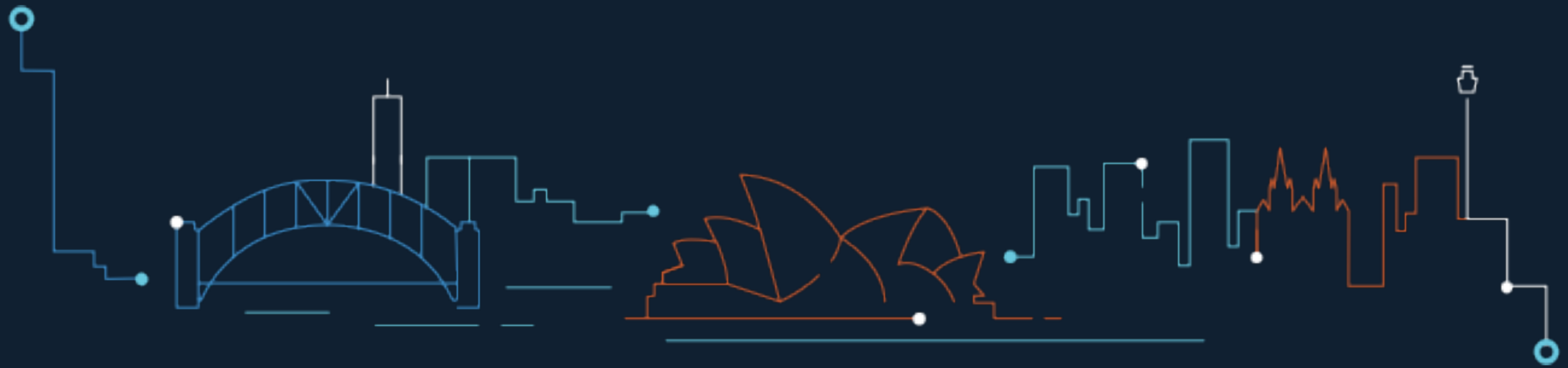
FORUM

Security in the API Economy

D. Keith Casey, Jr. API Problem Solver



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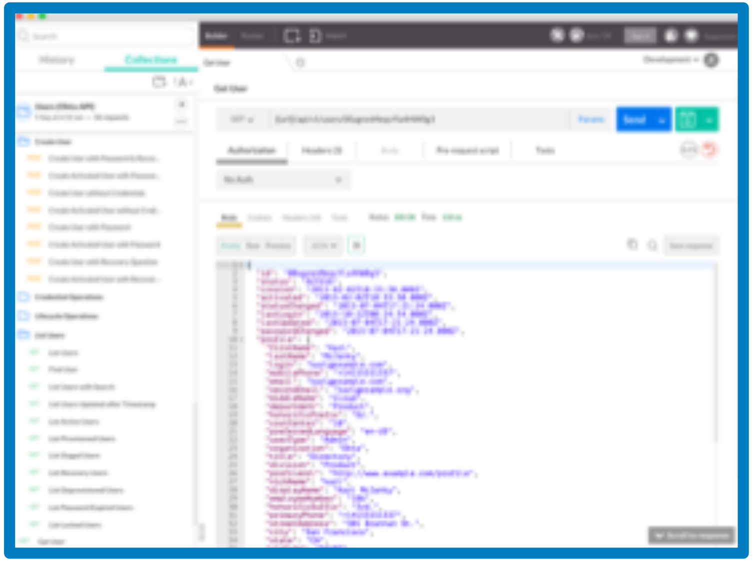
D. Keith Casey, Jr.

API Problem Solver

Connected experiences across devices

APIs have enabled this Transformation



APIs drive integrations, opportunities, and revenue

salesforce

APIs drive
50% of
Revenue *

twilio

APIs drive
100% of
Revenue
($540M ARR)

Expedia

APIs drive
90% of
Revenue *

* https://hbr.org/2015/01/the-strategic-value-of-apis

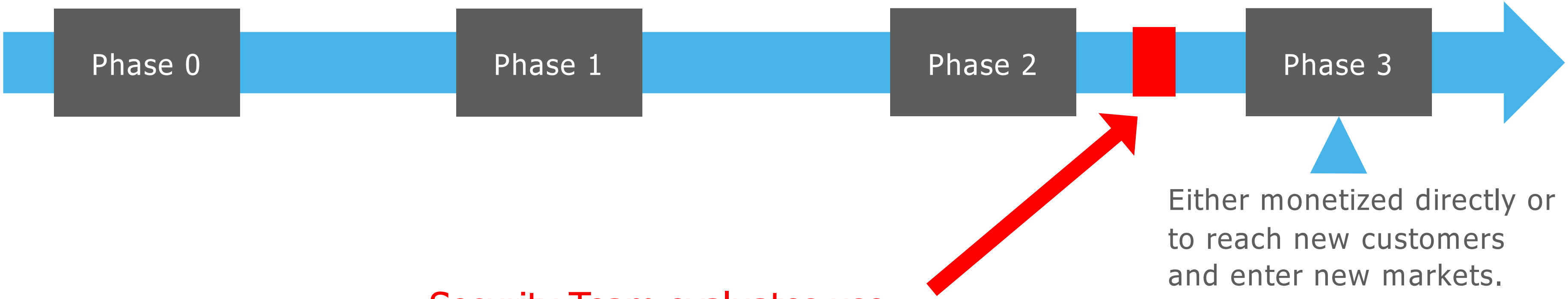
API Journey: A Maturity Model

Integrate internal systems by introducing Private APIs

Internal advocacy & collaboration for internal APIs and CoE/Governance

Limited API access to partners, resellers and suppliers

Grow these APIs as full fledged products with external developer access



Either monetized directly or to reach new customers and enter new markets.

Security Team evaluates use cases, interfaces, authentication, access management, etc, etc

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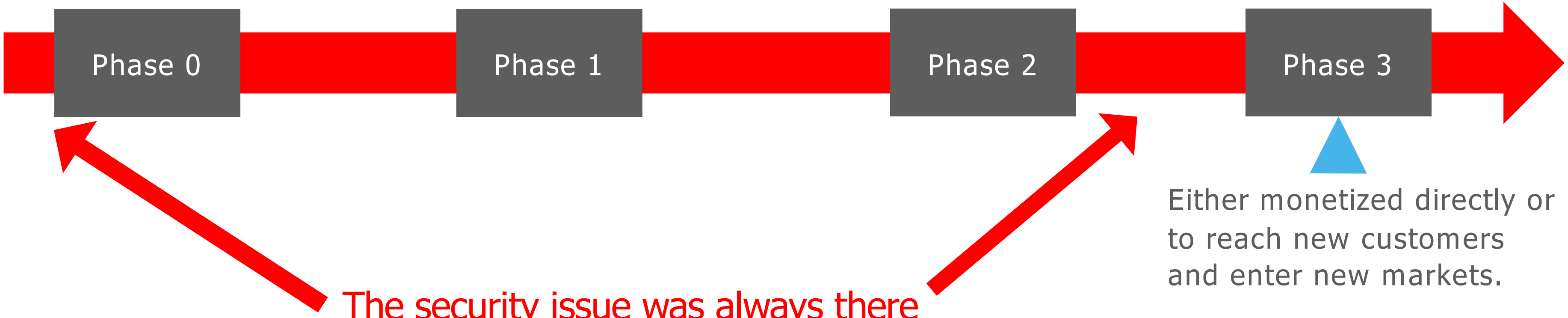


The security issue was always there

Either monetized directly or to reach new customers and enter new markets.

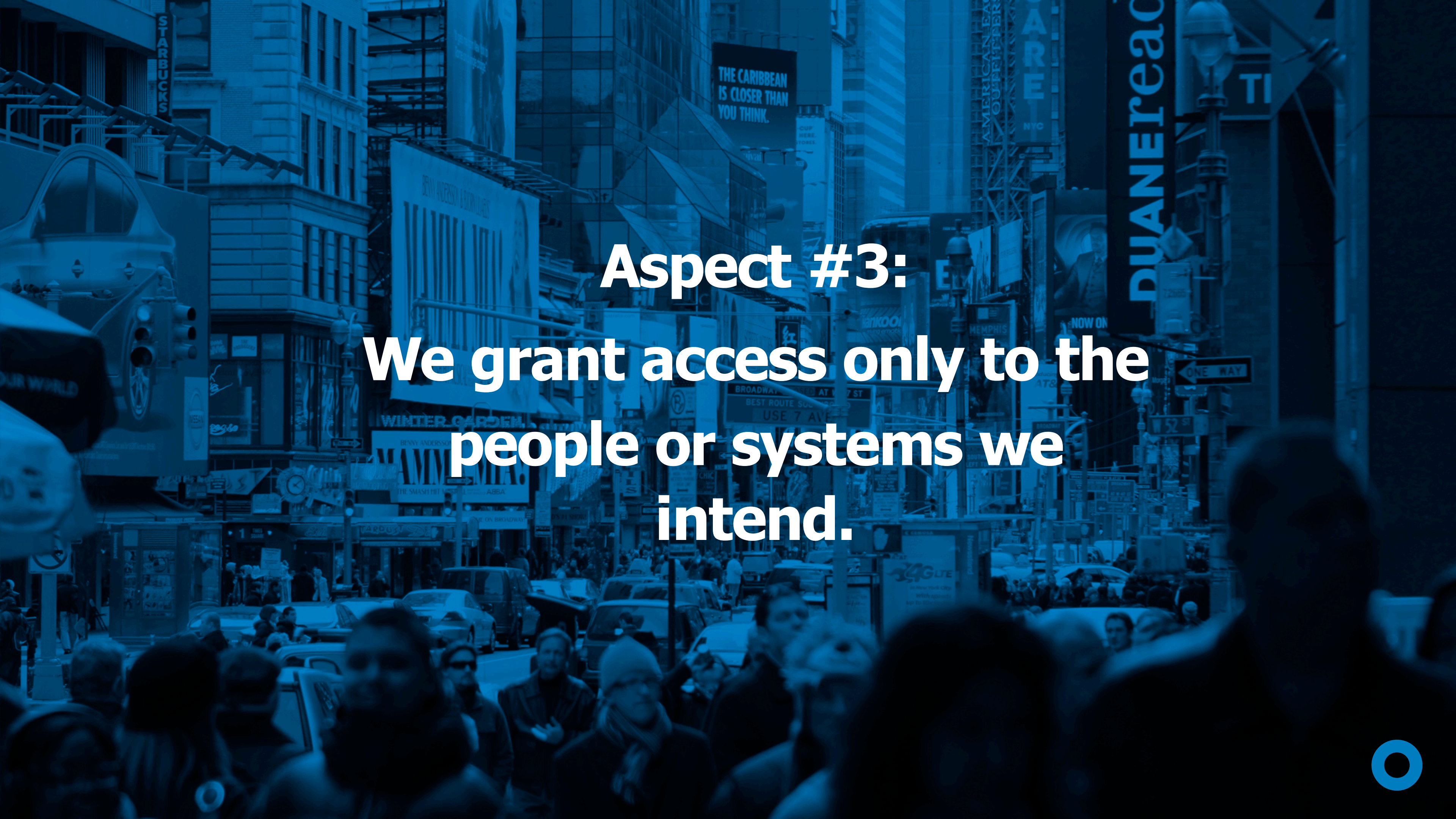
What is API Security?

Aspect #1:

We expose only the interfaces which we intend.

Aspect #2:

We share and accept only the data which we intend.



Aspect #3:

We grant access only to the people or systems we intend.

Approach #1: Trust our End Users

No, I’m kidding.
Unqualified trust is not security.

Approach #2: Use an API Gateway

API Management Capabilities

Full Lifecycle API Management

Lifecycle	Interface	Access	Consumption	Business
What state is it in?	What does it expose?	Who can use it?	How to succeed with it?	How does it drive business goals?
• How was it designed? • How was it built? • Is it deployed? • To which GWs? • Is it live/available?	• Which resources? • Which methods? • Which objects? • Which fields?	• Which users/groups? • How do they authenticate? • Using which clients? • In what contexts?	• API Documentation? • Debugging/errors? • Track usage? • Examples/SDKs?	• Partner CRM • Monetization • Marketing • Business Analytics

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API Gateways - Drawbacks

- Yet another user database
- Doesn’t have full context on the user
- Designed to manage APIs, not authorization policies

Approach #3: API Keys

An Example

-
  ```
  curl –X POST https://api.company.com/projects
    --header “Authorization: Bearer abcdef012345”
    --data ‘{“name”:”My Project”, “date_due”:”2018-09-14”}’
  ```

-
  ```
  curl –X DELETE https://api.company.com/projects/1234
    --header “Authorization: Bearer abcdef012345”
  ```

API Keys - Drawbacks

- All the joys of passwords
- Rotating at scale is really painful
- Generally all or nothing access

- *The de facto standard for APIs, API gateways, etc.*

Approach #4: OAuth

Hotel key cards, but for apps

OAuth Authorization Server

Access Token

Resource (API)

Compared to API Keys

- All the joys of passwords
- Rotating at scale is really painful
- Generally all or nothing access

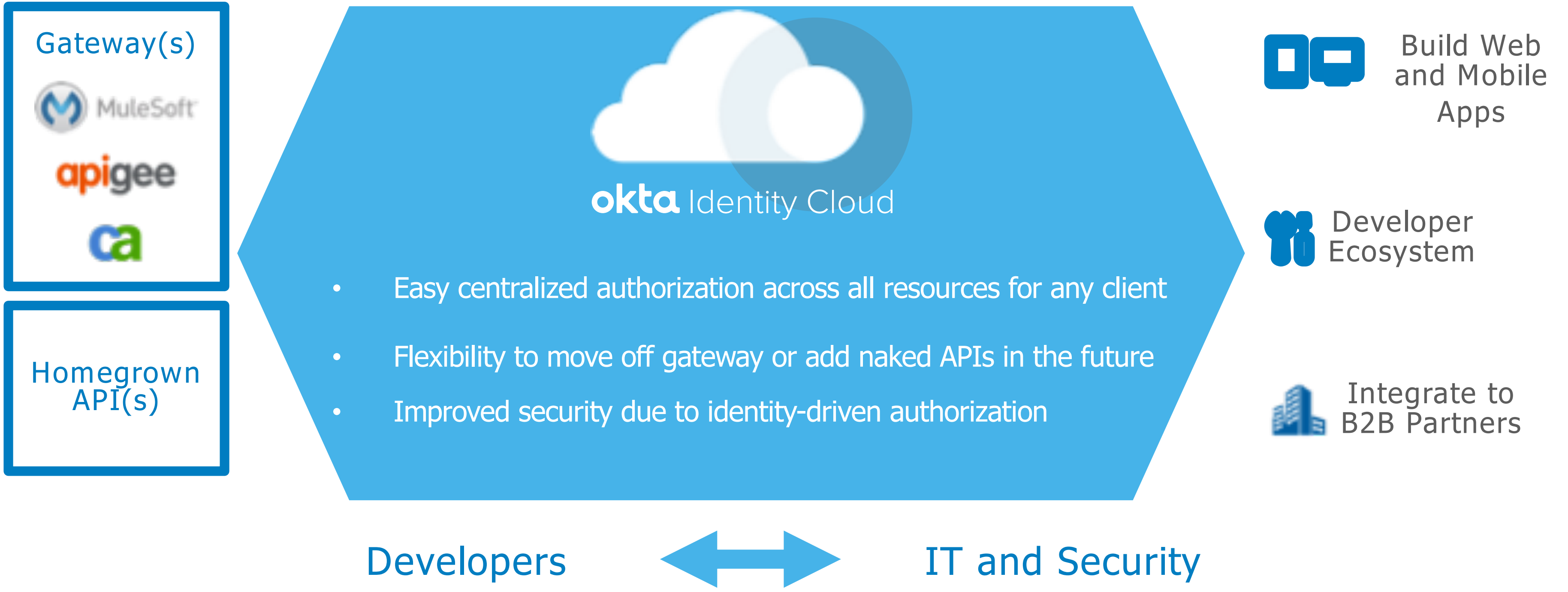
- Tokens expire automatically
- Rotation is part of the spec
- Each application has separate, rotatable credentials
- OAuth is inherently scoped
- Widely & consistently supported in all major programming languages & frameworks

OAuth - Drawbacks

- Not a single specification but a framework
- More complex, more flexible, less standard as a result

- *No, really. Those are the only major drawbacks.*

Okta lets developers focus on development and IT manage policy



Gateway(s)

MuleSoft

apigee

ca

Homegrown API(s)

okta Identity Cloud

- Easy centralized authorization across all resources for any client
- Flexibility to move off gateway or add naked APIs in the future
- Improved security due to identity-driven authorization

Build Web and Mobile Apps

Developer Ecosystem

Integrate to B2B Partners

Developers

Add the Okta SDK and stay focused on core features

IT and Security

Empowered to create, manage, and audit access across all points of access

Closing Thoughts

Questions to Ask Yourself

- Who is responsible for your APIs?
- Who is responsible for security policy & enforcement?
- Who are your users?
- Who will be your users in a year?
- What are their apps: mobile, web backends, IoT, other apps?
- Is their access fine-grained or the same for every user/app?
- What happens when your application is compromised?

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Thank You