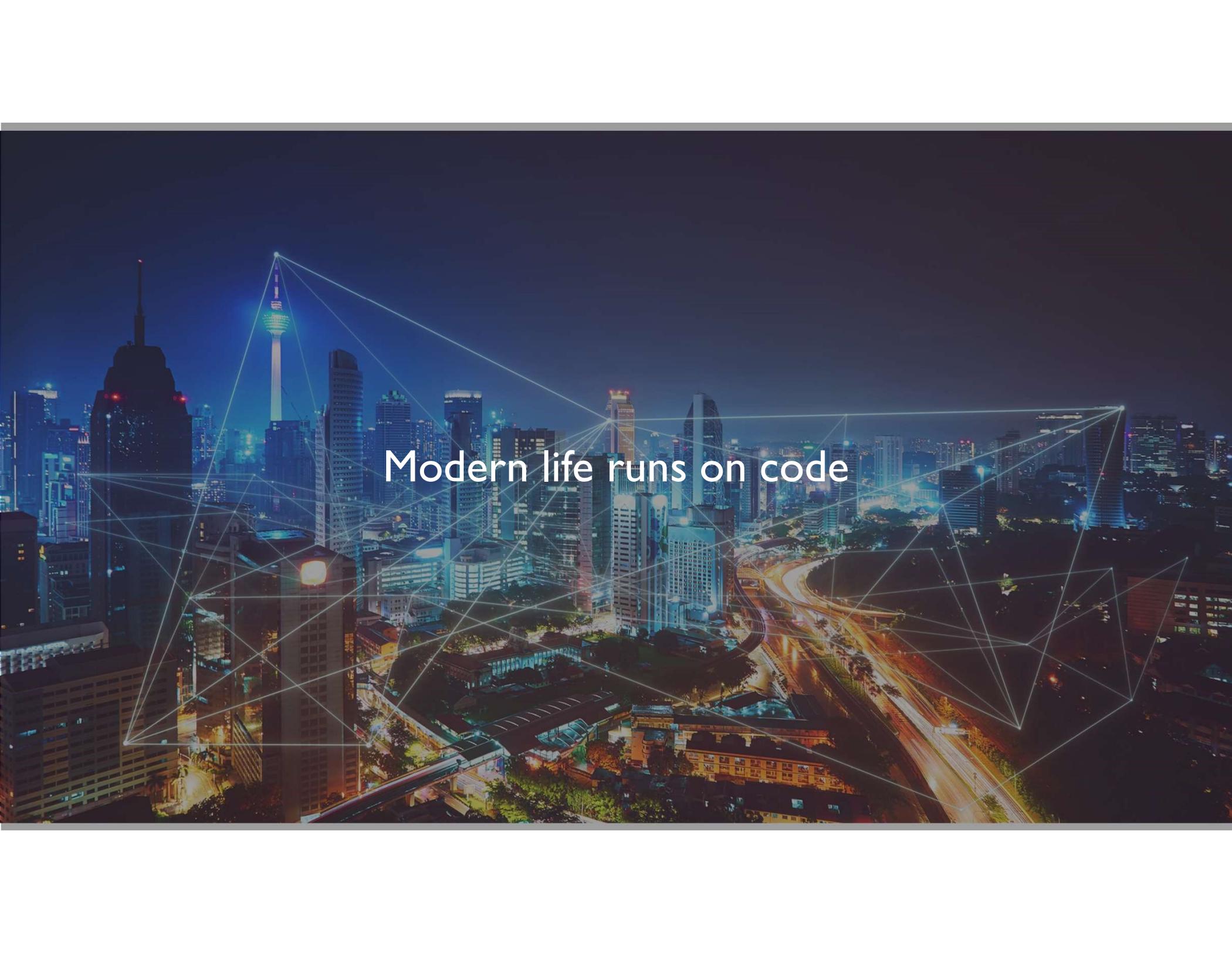


APPLICATION MODERNIZATION

*Future-proof the
applications that power
your business today.*



An aerial night view of a city skyline, featuring numerous illuminated skyscrapers and a prominent tower with a glowing top. A network of white lines is overlaid on the city, connecting various points across the landscape. The text "Modern life runs on code" is centered in the image.

Modern life runs on code

BMW

Challenge

Create an intelligent, highly personalized world of digital services that integrate the vehicle seamlessly into the customer's life and are available 24/7, anywhere.

Solution

BMW created the Open Mobility Cloud, an intelligent, continuously learning platform based on Azure that melds environment, context and services to address individual mobility needs.



Next Trip

Dinner with Robert

🕒 12 min

🕒 6:27 PM PDT

📏 0.9 Miles

15 The Embarcadero
San Francisco, CA 94111

Carrier 12:46

Hello Tom

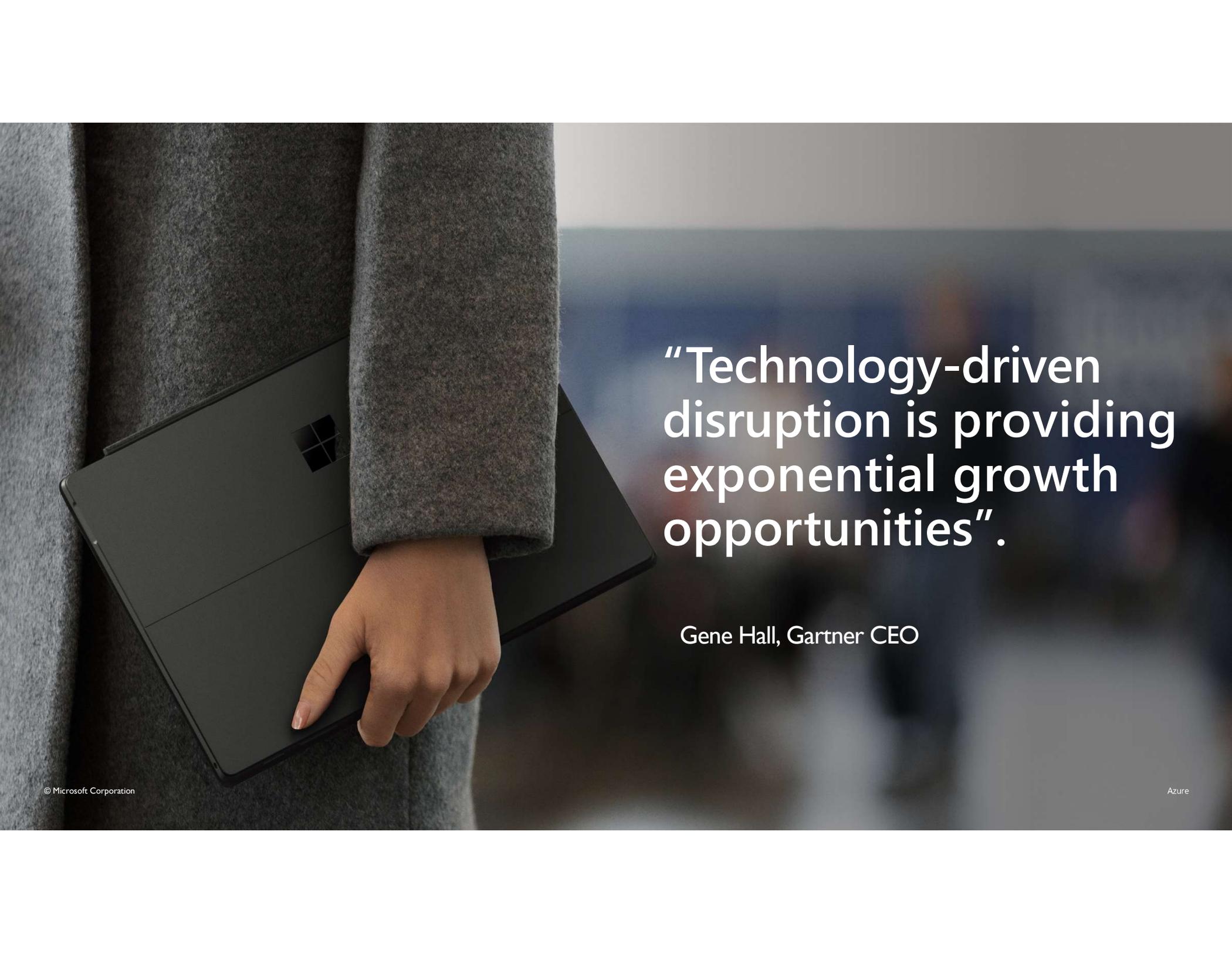
750LI XDRIVE



SCHEDULED

1 Dinner with Rob

Pier 15, The Embarc

A person wearing a grey wool coat is holding a black laptop. The laptop lid is closed and features the Windows logo. The background is a blurred cityscape at night.

**“Technology-driven
disruption is providing
exponential growth
opportunities”.**

Gene Hall, Gartner CEO

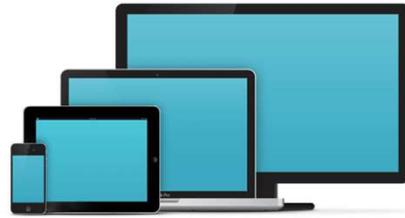


@ HOME

Expectations



EXPERIENCE



DEVICE
AGNOSTIC



COGNITIVE

Microsoft Azure
Has all the tools
You need.



Operational Benefits



**LESS IT
OPERATIONS**



**FASTER
APP DEVELOPMENT**

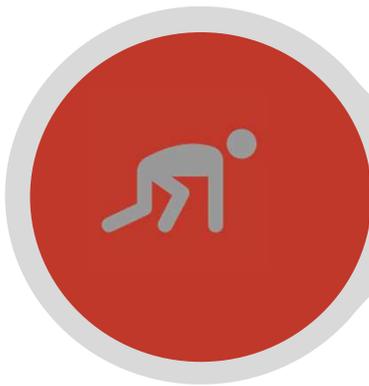


**SECURE &
COMPLIANT**



Stages Of Modernization

CLOUD BENEFITS



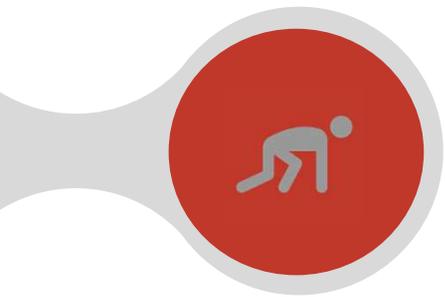
CLOUD OPTIMIZED



CLOUD NATIVE



Stages Of Modernization



CLOUD BENEFITS

This scenario encompasses a **lift&shift** of the entire IT stack from storage & networking up to the application code. **Virtual machines are leased within a Microsoft datacenter.**

BLOCKERS

Some legacy software works with **physical dependencies** such as USB license dongles, (bar code) scanners, medical equipment,... **Compliance** with local laws is an attention point.

PRO

This approach results in **less IT Operations** since customers enjoy managed services and higher value services for DNS, secret management,... This is a **least effort** approach. No application or architectural changes are made.

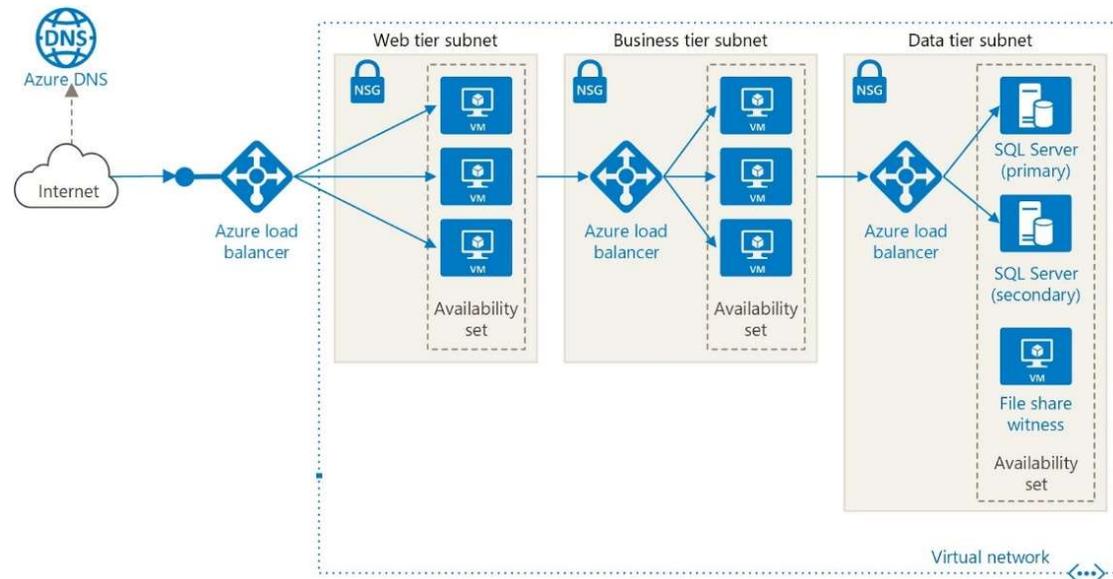
CONTRA

The value of cloud is rather small.



Stages Of Modernization

- > Managed up to operating system
- > Higher added value services such as Azure DNS, Azure Recovery Services,...



Stages Of Modernization

CLOUD OPTIMIZED

In a cloud optimized scenario the applications are hosted within **PaaS components** such as App Services or Container services which share the operating system layer.

BLOCKERS

Not all applications are meant to run on PaaS components

PRO

Improved productivity & DevOps agility is the main benefit of this app modernization stage. Containerization of applications enable the **portability of an app and its dependencies**.

CONTRA

Containerization has a learning curve and requires an additional effort.



Modernizing with PAAS services



Challenges

Infrastructure management slows down business processes

Inefficient resource management

Lock-in to a limited (legacy) stack. Lack of portability across clouds

Deployment not automated, slow, wasted time due to manual tasks

Production infrastructure can not be replicated on developer machines



Azure Benefits

Managed services let you focus on apps, not admin and speed up deployments

Smaller instances increase packing density and improve resource utilization

Managed services support all stacks. Containers run on any cloud

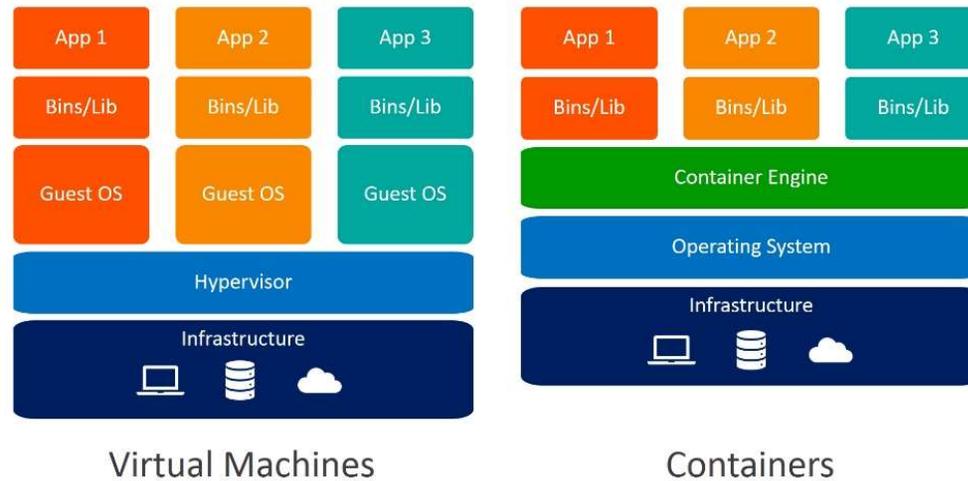
Fast and agile app deployment with built-in DevOps and instant startup

Environments are consistent across development, test and production



Refactoring with container technology

- > Containers are isolated but share the same OS
- > Increase the compute density and memory utilization
- > Lightweight alternative to virtual machines
- > Support all frameworks & technology stack across clouds and on-premises



Stages Of Modernization



CLOUD NATIVE

The ultimate cloud experience is realized by applying **heavy code changes** or rewrites using serverless cloud components.

PRO

Cloud native development ensures a focus on the application. **IT Operations & DevOps efforts are minimized.** The application is now optimized for long term agility.

BLOCKERS

Business case. Not all applications are meant to drive this far. There must be a clear future for the application with

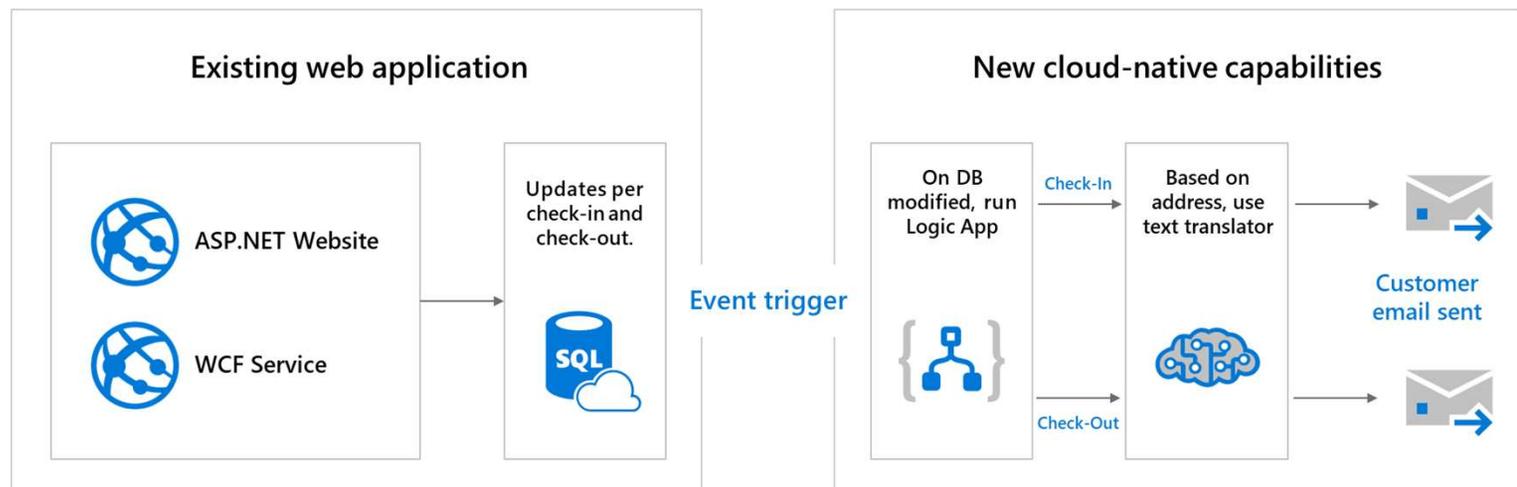
CONTRA

This is the **highest effort** scenario. Deep integration with vendor cloud components results in lock-in.



Future-proofing applications with serverless

- › Adding new capabilities to existing applications:
 - › Existing code and functionality is left as-is and moved to managed cloud services
 - › New capabilities are added incrementally using serverless functions triggered by events



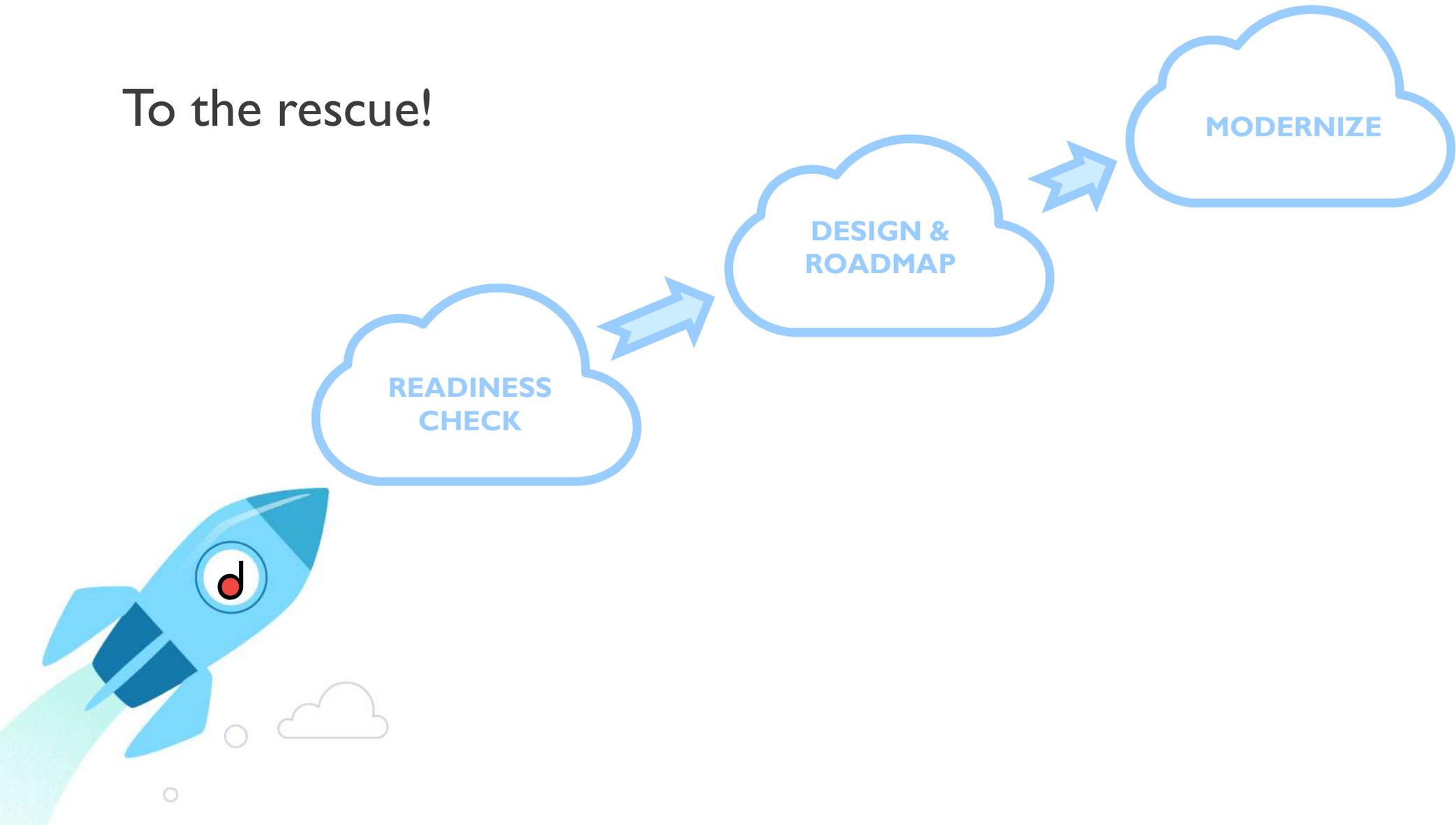


How can I make sure that my existing applications can take maximum advantage of cloud capabilities?

How do I get started, I have so many apps!

I'm worried that I need to start from zero and rebuild for the cloud?

To the rescue!





€ | 500 per app



DELIVERABLE

- › Gather business expectations:
 - › Future view on the application
 - › Criticality
 - › Target audience

- › Technical assessment:
 - › Agent-based scan of codebase & configurations
 - › Detailed report:
 - › (In)compatibilities
 - › Effort & development planning
 - › Required detailed code-level changes (with recommendation)
 - › Gathering of load estimations
 - › TCO calculation

- Overview
- App Service Assessment
- Container Assessment
- Virtual Machine Assessment
- Database Assessment
- Application Dependency Tree
- Security Recommendation
- Azure Compliance Report
- Costing Dashboard
- Other Recommendations
- Costing Recommendation

- Overview
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- Costing Recommendation

Azure SQL DB Recommendations

Costing Dashboard

- Overview
- App Servi
- Container
- Virtual Ma
- Database
- Applicatio
- Security F
- Azure Cor
- Costing D

Select Region: East US Dev / Test

Reason of Change

Application uses Un Encrypted connection string if you are planning to move your database on SQL Azure then current setting can have security related issue.

Source of Scan

ApplicationCode

Source Code Detected

Total Connection Strings Section Found: 1

Code Block

```
initial catalog=databaseName;user id=username;password=*****
```

Line no : 32 File path : C:\Users\UnifyCloud\Desktop\lurvashi\AppsToScan1\AppsToScan1\AppsToScan1\UnifyCloud.OpenWIFY.General\UnifyCloud.OpenWIFY.DTO\SRA.cs

Recommendation

Encrypt connection string info... View More

```
aspnet_regiis -pe "connectionStrings" -app "/SampleApplication" RSA Key
WCFEB0XBvYlFASvW8ghZVAG1674ZfC10aHBoazGwd8FihcAmQmIn0hTz5toZEXG1+dyh10g1Em09NeeH4Y2k+JH1In+
IttEay9CGa0XSen9uQLpCQkQqUErZ1Pk4qPZaRwqckLq1C19XbX90E7Jk1S02Ibapj+1J0= OpiuQbQzWZEGYAEV8F82yz6q5WfJ3rcuq8T0P97a095H2iaWggsE12VrL4o
mXOGA4mJt0VZaxgb9TveGBDhJPh5Z1rLmFYSoze+h2Lsm7hmf6VvF83Ff10a6+h0JTheCXBdmzG/vQb0u3oej5Gz84ly+V908T4Yx0m9uVdV8PH0eRTZ//3
iZf7fhaV2N24e6vJ4Byjfb1o3JvngRjmm9hr9b1vbbT3Q8/J5zJ+TELCn62Phvnu8781G2KP3Xqaj2GBz8k6Chq+MeebQqWtD70TPumuzK0yN1XDZ5gkfBuqnshe
0STE7mC1eP9rgATf6qglg46zyVvW4DjoiqbCV8071CzXa3bF5KzKawU54F515pdZKA66/kkr9Ps++CE+
```

Help URL

https://msdn.microsoft.com/en-us/library/dtkwfdky(v=vs.100).aspx

Impact and Sizing

Impact: Mandatory
Estimated Cost : Small-1 Hrs task for one developer

Compliance Status

Targeted Azure Service : Cloud Service



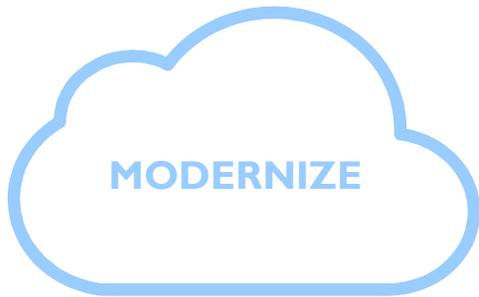


**DESIGN &
ROADMAP**

DELIVERABLE

- › Decision on TO BE modernization stage
- › Final design  
- › Roadmap: 
 - › Set concrete actions towards milestones
 - › Define roles & responsibilities

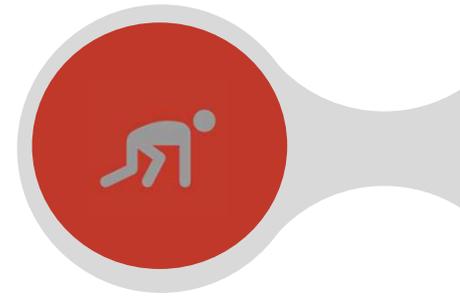




DELIVERABLE: modernized app & as-built 

Automated lift&shift of virtual servers

Addition of value add services (DNS, Backup, DR, secret management,...)



(Automatic) migration of app code & database

Containerization



Enablement of platform services

Application (re)write on top of serverless components



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