

# DATA-DRIVEN CLOUD MIGRATION

Actionable insights on your application portfolio  
drive faster cloud migration



tidal migrations

Approach

People

Platform

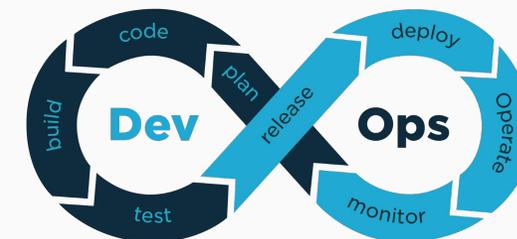
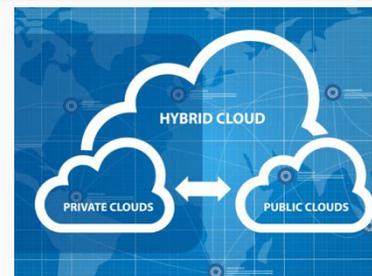
# AGENDA

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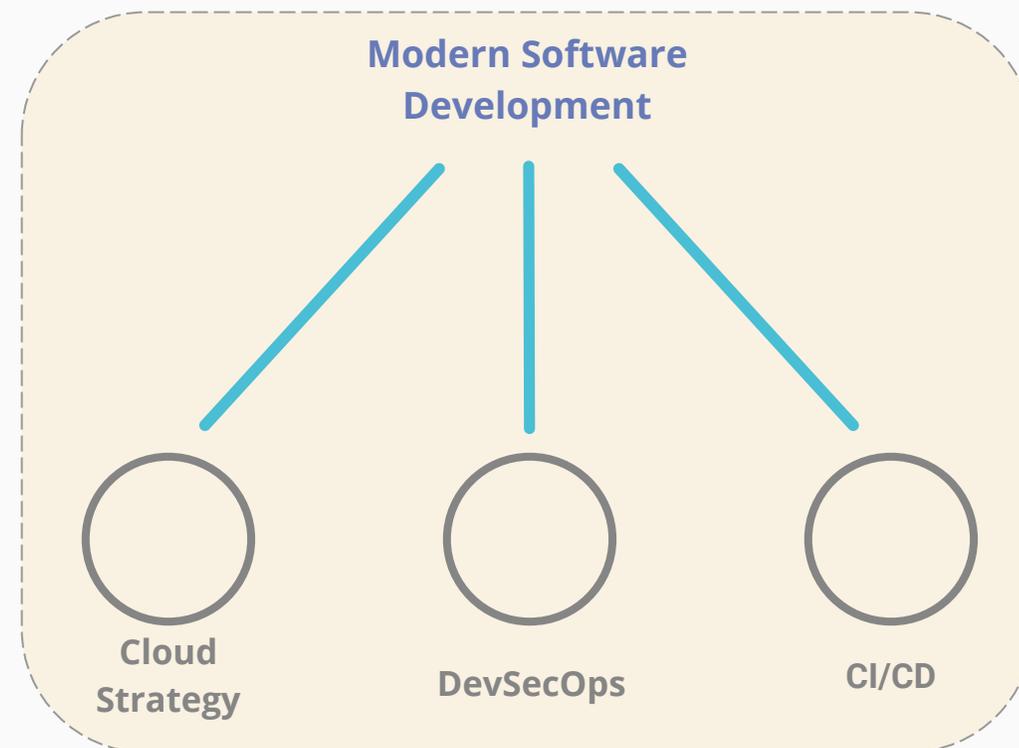
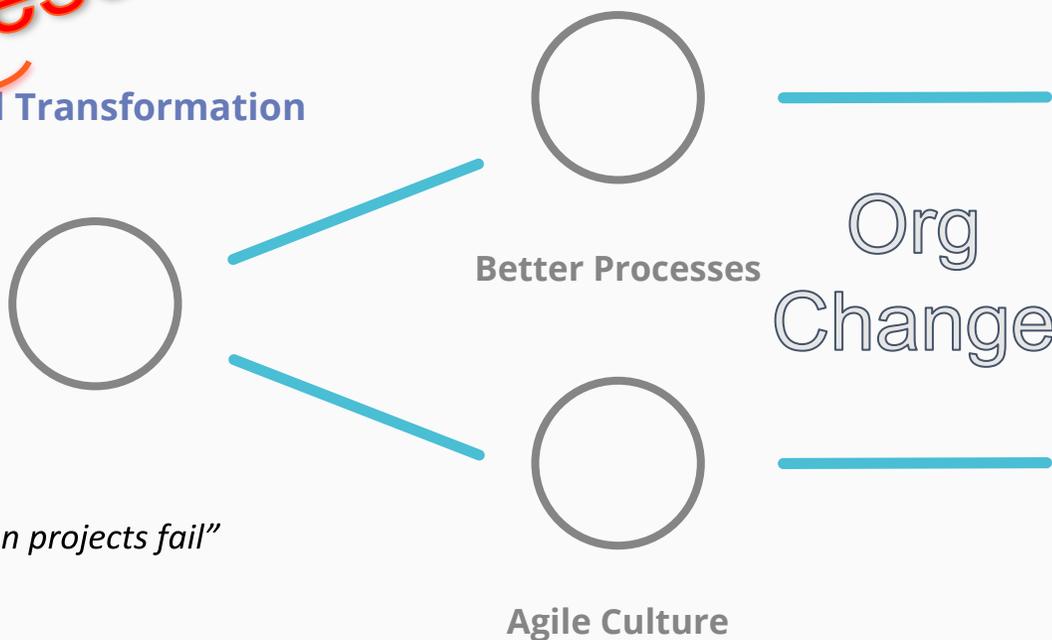
- Where Cloud Fits
- Problem Solved
- Case Study
- Unique Approach
- Demo of Platform
- Migration Factory Support
- Where from Here

# Digital Transformation in a Nutshell



INNOVATION

**Business**  
Digital Transformation



*"70% of Transformation projects fail"*  
McKinsey & Company

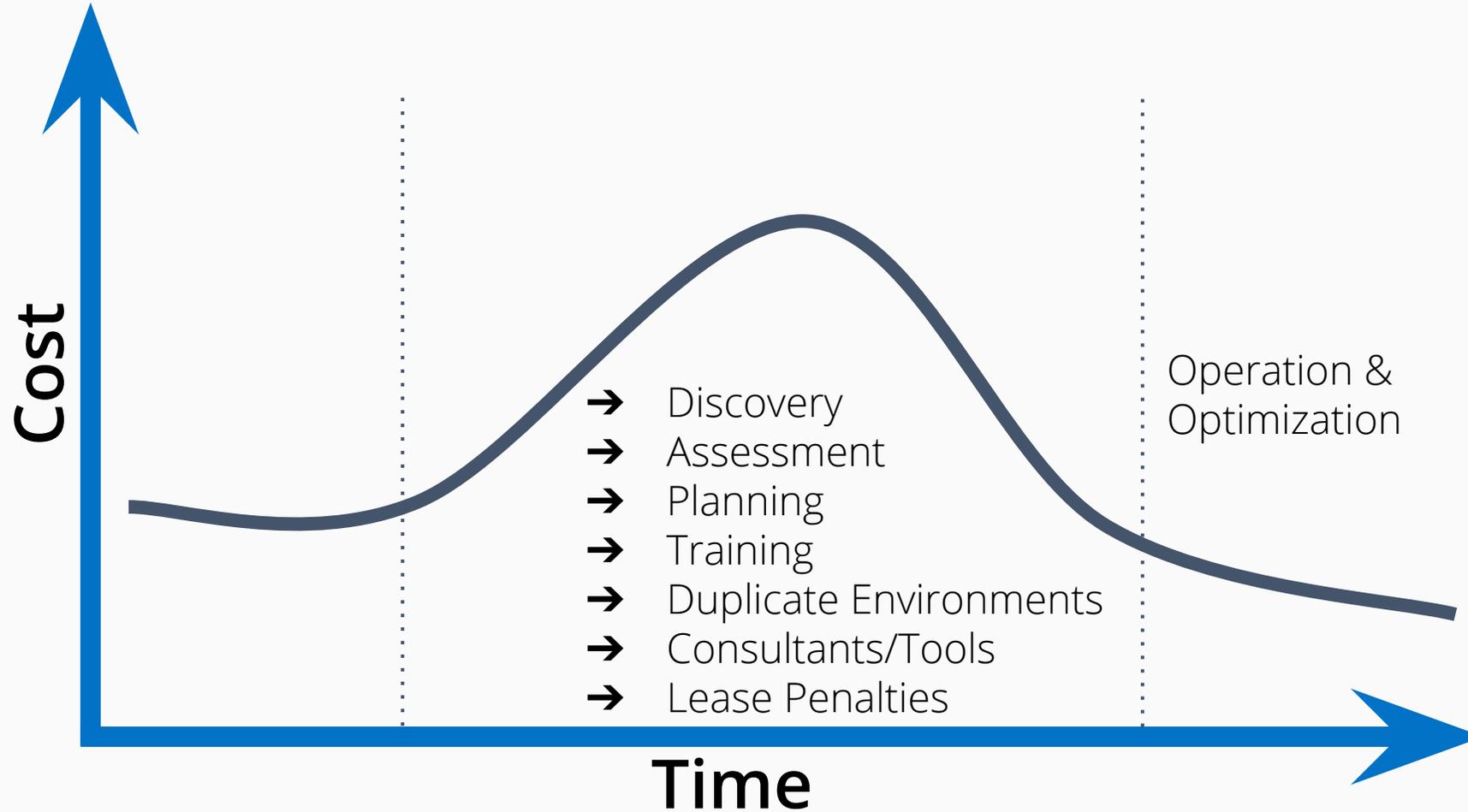
<https://www.mckinsey.com/business-functions/transformation/our-insights/why-do-most-transformations-fail-a-conversation-with-harry-robinson#>

# Hard to Hear - Migration Findings

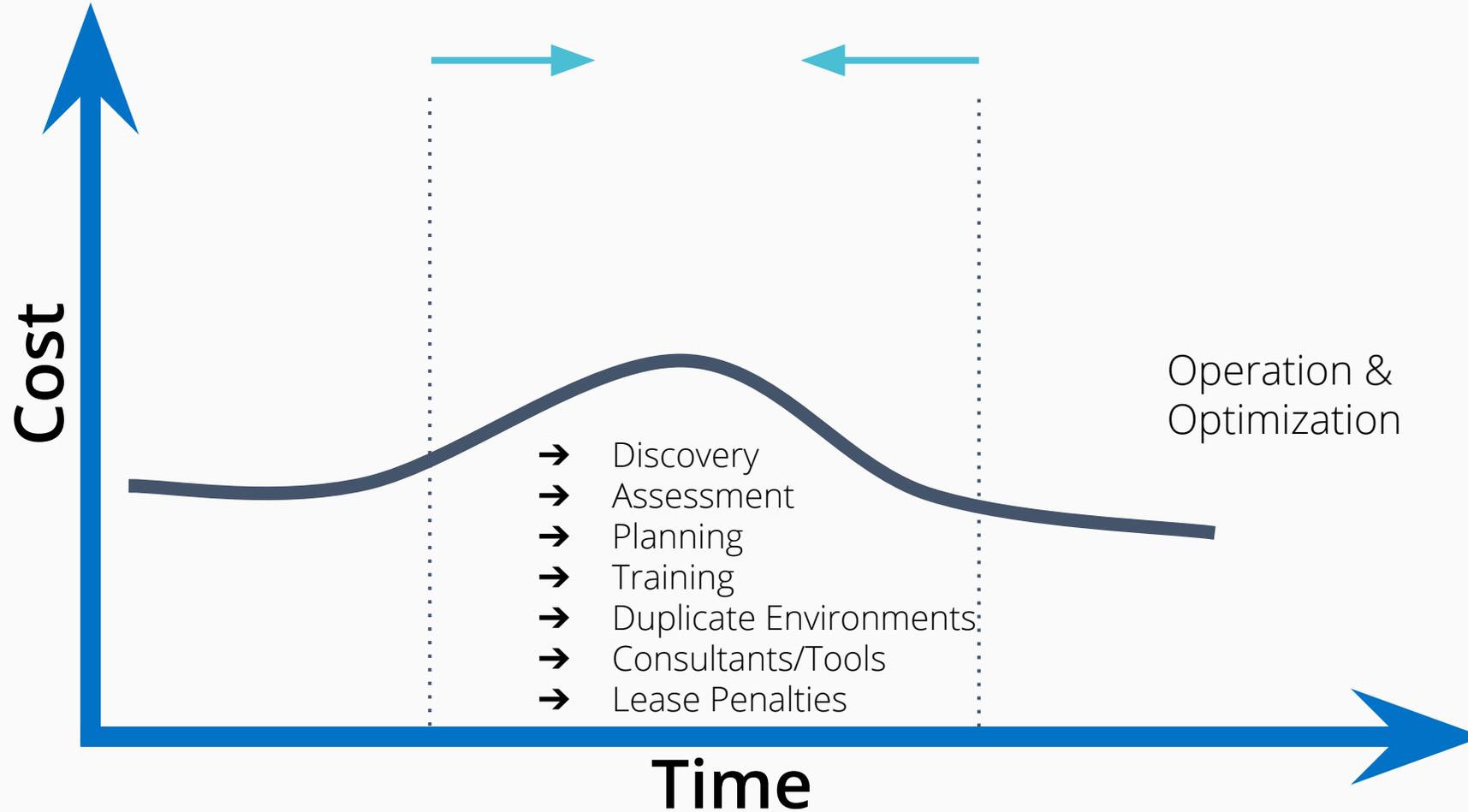


- 96% are migrating applications to the cloud with 4% already completed their migration
  - 62% of initial migration projects are more difficult than expected or fail
  - 73% expect the application migration project to take a year or longer
- 64% of application projects took longer to complete than planned
  - 55% exceed the application migration project budget
  - 47% believe their organizations are not moving to the cloud on schedule

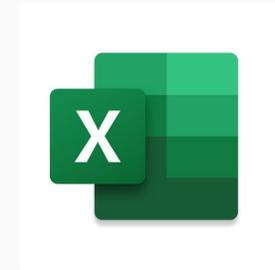
# Cloud Migration Bubble



# Cloud Migration Bubble



# Traditionally...



# Tidal-ly...



The screenshot displays the Tidal Migrations dashboard interface. The browser address bar shows the URL `demo3.tidalmg.com/#/dashboard`. The user is logged in as a "Guest" with the email `philip.rees@tidalmigrations.com` from WAYNE ENTERPRISES.

The dashboard features a left-hand navigation menu with the following categories and items:

- DISCOVER**
- ASSESS**
- Dashboard** (highlighted)
- Applications
- Code Analysis
- URLs
- Servers
- Database Instances
- Virtualization Clusters
- Technologies
- Analyze
- Cloud Readiness
- Portfolio Reports
- Premium Insights
- PLAN**
- EXECUTE**

The main content area, titled "Main", contains four large metric cards and a "New Group" button:

- Production Apps:** 18 items (Production)
- Test Apps:** 22 items (Test)
- Test Databases:** 13 items (Test)
- Production Databases:** 18 items (Production)
- New Group:** A button with a plus sign (+) to create a new group.



# A CASE STUDY



Highlights

**Budgeted 2 years for Lift and Shift  
Transformative in just 15 months**

Results

Vertical: **Public Sector - State/Provincial Government**  
Compelling Event: **Hardware Refresh Avoidance**  
Previous technology stack: **AIX, Solaris, Windows, Mainframe**  
Previous spend on hosting: **\$2,070,000 per year**  
Hardware refresh project: **\$15 mil *avoided***

## 30 Apps Analyzed

- Refactored 20
- Replatformed 5
- Rehosted 1
- Repurchased 2
  - Retired 2

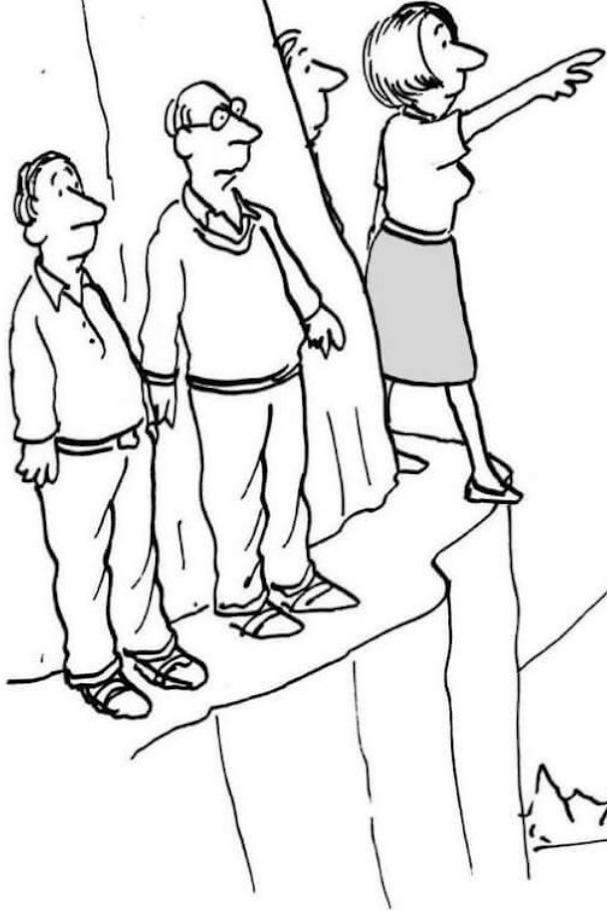
Modernization process:  
**Rationalize applications, and migrate J2EE to serverless**

OpEx to: **\$80,000 p.a.**

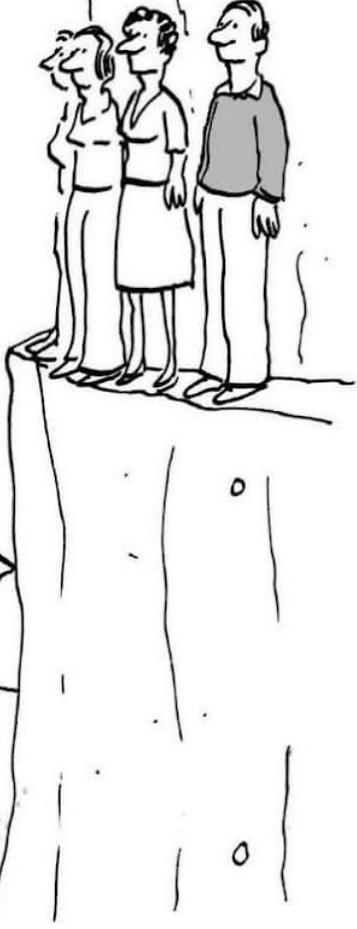
**Remove over 100 Critical + High CVEs**

**Refactor core applications that have high-levels of technical debt first,  
to enable faster transformation**

COME  
OVER  
HERE



HOW?



# Tidal Application-centric Best Practices



## DISCOVER

1 Review Company Objectives

2 Identify Discovery Sources

3 Organizational Skills Assessment

4 Application Inventory

## PLAN

## ASSESS

8 Transition Wave Planning

7 Transition Requirements

6 Deep Dive Source Code + DB Assessment

5 Preliminary Application Assessment

## EXECUTE

9 Retire, Repurchase, Rehost

10 Refactor, Replatform Retain

11 Policy Automation + Enforcement

12 Stabilization

# IT-centric vs Business-first Approach



## Infrastructure-centric



## Application-centric\*\*



Migrate faster,  
with better results.

\*AWS Consulting average application assessment time  
\*\*Based on portfolio of 100 applications

# Application Portfolio Assessment



## DISCOVER

- Project Goals
- Application Inventory
- Dependency Mapping
- Skills Assessment
- Business Value

## ASSESS

Basic Insights

Premium Insights

→ Classification

→ Prioritization

1. Easy App
2. Easy App 2
3. Medium App
- ...
- n. Hard App

### 6 R's

- Refactor
- Replatform
- Rehost
- Repurchase
- Retain
- Retire

Source Code  
Database Analysis

CONTINUOUS RATIONALIZATION

# Database Premium Insights



## Deep analysis & insights

- Configuration compatibility
- Application dependencies
- Licensing savings
- PL/SQL conversion
- Cloud-native migrations
- What-if scenarios



Tidal Migrations

demo3.tidalmg.com/#/database\_instances/10229

tidal.migrations philip.rees@tidalmigrations.com WAYNE ENTERPRISES

Record Database Insights

Service Management

Name	Description
db2	--

Tags: --

Apps: Airbnb, Inc. KTSJ

Environment: --

Technology Stack

Cluster: ip-10-1-0-196

Database Path: --

Database Engine: Oracle 11.2

Database Analysis Results

**Migration Difficulty**

Choose a migration target below to see its difficulty.

Amazon RDS Oracle Low

Difficulty by Feature

Below are the three features that will complicate the migration the most. [Go to premium insights](#) to view the remaining features.

BTree Indexes	Low
User Defined Types	Low
Functions	Low

**Server Metrics**

Architecture:	x86_64/Linux 2.4.xx
CPU Count:	2
Storage Used:	13 GB
RAM Allocated:	4 GB
Maximum Storage Requests:	4 IOPS
Maximum Storage Throughput:	0 MB/s
SGA Size:	3 GB
Maximum Number of Sessions:	43
Number of Sessions Used:	1

Discovered Applications Show Ignored

The below applications were discovered by the database analyzer. You can match each one to an application in Tidal Migrations.

KTSJ	<span>✓</span>	<span>&lt;/&gt; KTSJ</span>
JDBC Thin Client	<span>!</span>	<span>Match</span> <span>Ignore</span>

Rapidly identify the volumetrics required across your database portfolio, and measure the relative complexity to migrate from Oracle or SQL Server to cloud-native databases.

Discover applications that connect to your databases and map the dependencies with one-click

Tidal Migrations

demo3.tidalmg.com/#/database\_instances/10229

tidal migrationz philip.rees@tidalmigrations.com WAYNE ENTERPRISES

Record Database Insights

Migration Analysis from Oracle to Azure SQL Database V12

ip-10-1-0-196  
ORCL (11.2)

orcl

40 60 80 100

20 18

0

**Migration Complexity**

- Hash Partitions
- List Partitions
- Virtual Column Partitions
- User Defined Types
- Database Level Triggers
- Schemas with Tables
- Stored Procedures

**Query Complexity**

LOW HIGH

Data collection date: 10/17/19

**Database features**

Search features

Feature name

- > Virtual Column Partitions (1)
- > List Partitions (1)
  - > Table Owner.Table Name (1)
    - > NAYA (1)
      - LMR\_LIST\_001
- > Hash Partitions (1)
- > User Defined Types (4)
- > Database Level Triggers (3)
- > Schemas with Tables (3)
- > Stored Procedures (1)
- > Functions (4)
- > External Tables (1)

Exclude schemas

Target sizing

Workload

Perform detailed what-if analysis for migrations from Oracle and SQL Server to cloud-native database options

*Shown here: Azure SQL*

Easily drill down into individual columns, functions and features that your team should focus on when migrating from Oracle to cloud-native databases.

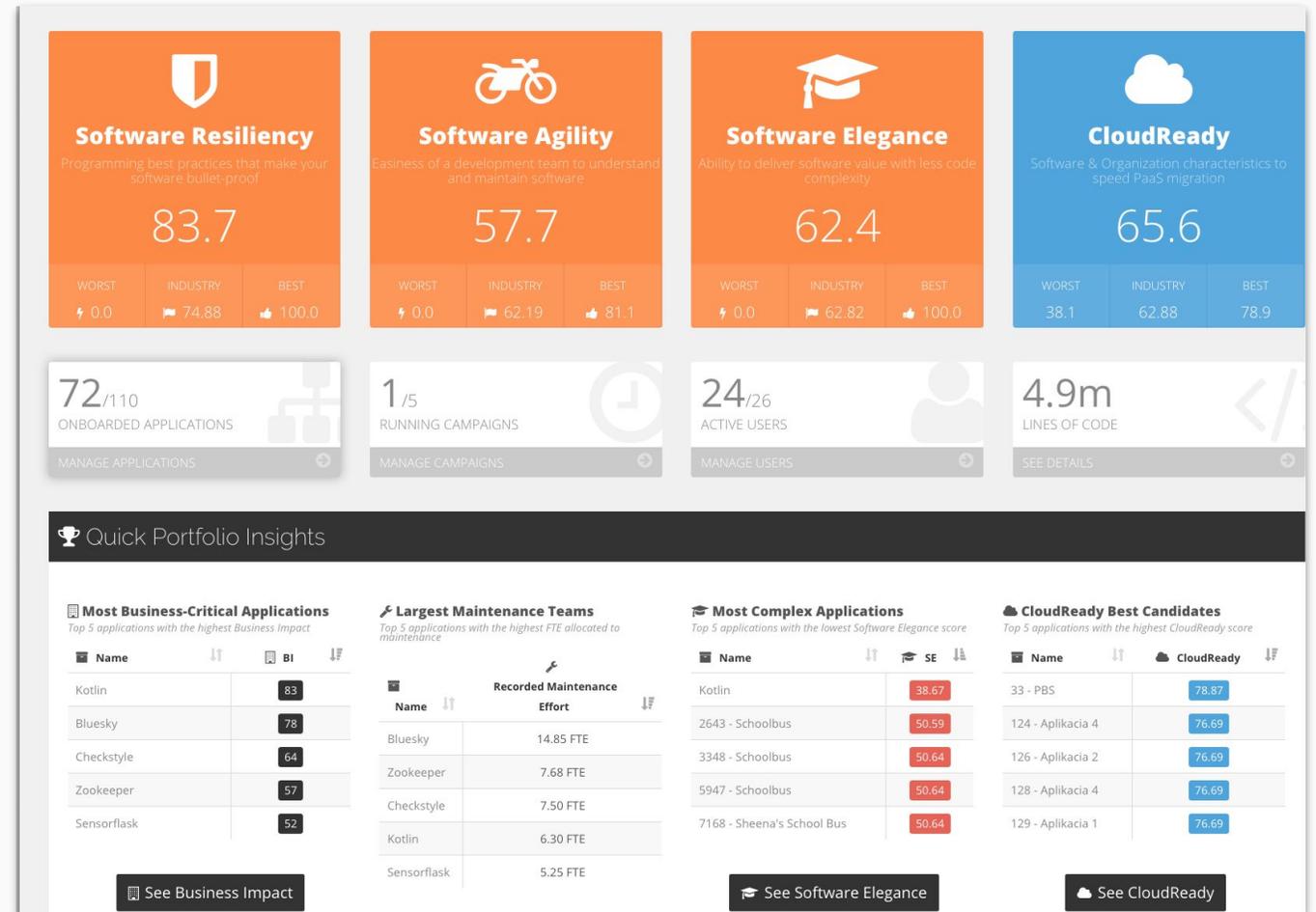
# Source Code Premium Insights



## Software Intelligence

- Roadblock identification
- Framework detection
- Vulnerability insights (CVEs)
- Measure migration difficulty with 200+ code patterns
- Cloud-native migrations

***Focuses your efforts on what matters***



Tidal Migrations

demo3.tidalmg.com/#/code\_analysis

tidal migrationz philip.rees@tidalmigrations.com WAYNE ENTERPRISES

## Code Analysis

# Source Code Analysis

Use Tidal Tools source code analysis feature to measure your application code bases for cloud PaaS migration difficulty. With your source code analyzed, the low-hanging fruit appear at the top of the list here. Migrating these to cloud-native platforms first allows your team to build momentum and demonstrate cloud competency.

1. Download, install and login to [Tidal-Tools](#)
2. Run `tidal analyze code --app-id [app_id] /path/to/source`

### Application Analysis Progress

Refactor: 10      Replatform: 15

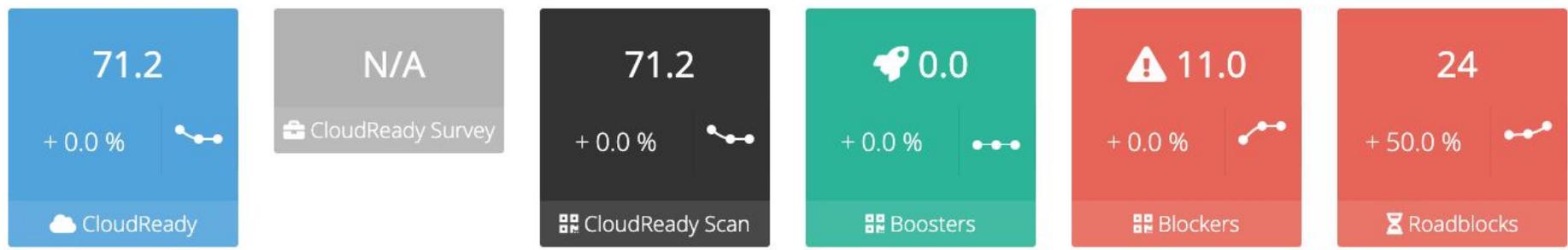
**100%**      **94%**

### Support

- [Getting Started - Tidal Tools](#)
- [Layered Approach To Discovery](#)
- [Importing and Integrating Applications via API](#)

App	App Owner	Transition Type	Migration Difficulty	Roadblocks
Alexa website		replatform	Easy (83.8%)	12
Japan Airlines		refactor	Easy (79.8%)	16
Apartment Therapy		replatform	Easy (74.8%)	21
United Airlines		replatform	Easy (73.6%)	22
Capital Safety		refactor	Easy (73.5%)	22
Edmunds.com Inc.		replatform	Easy (72.4%)	23
Encyclopaedia Britannica		refactor	Easy (72.1%)	23
Yellow Pages website		refactor	Easy (72.1%)	23
Internet Archive		refactor	Easy (68.0%)	27
Tom's Guide		refactor	Easy (68.0%)	28
Truebill		replatform	Medium (65.6%)	30

Rank your applications by migration difficulty to cloud-native architectures.



Cloud Requirement

Technology Impact Criticality Contribution Roadblocks

Cloud Requirement	Technology	Impact	Criticality	Contribution	Roadblocks
Access Control List : Using Access Control List	C#	CFA	Critical	+21.22 %	0
Application Settings Configuration : Using other configuration files than Web configuration	C#	C	Low	-0.28 %	1
Code Execution : Using COM Components	C#	CF	High	-4.13 %	2 +1
Data Encryption Key : Using auto generated Machine Key	C#	A	High	+3.98 %	0
Data Encryption Key : Using Crypto API	C#				0
Execution Environment : Using file system	C#				0
Execution Environment : Using hardcoded network IP address (IPV4, IPV6)	C#				2 +1
Execution Environment : Using system DLLs	C#				0
Inter Application Messaging : Using a middleware application	C#				19 +6

Files list

- RabbitMQHare\RabbitConsumer.cs
- RabbitMQHare.UTest/Properties/AssemblyInfo.cs

Identify issues before you migrate.

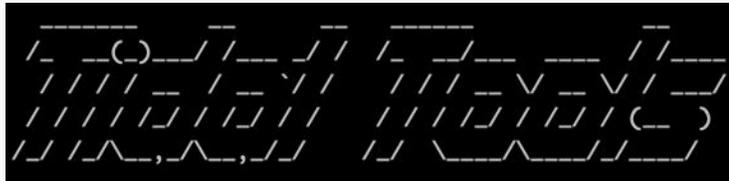
Down to the source code files that your team should focus on.

# Tidal Migrations platform | tools



## UNDERLYING TOOLS

### Tidal Tools



### 3rd Party Tools

#### Discover/Reporting APM



### Automations



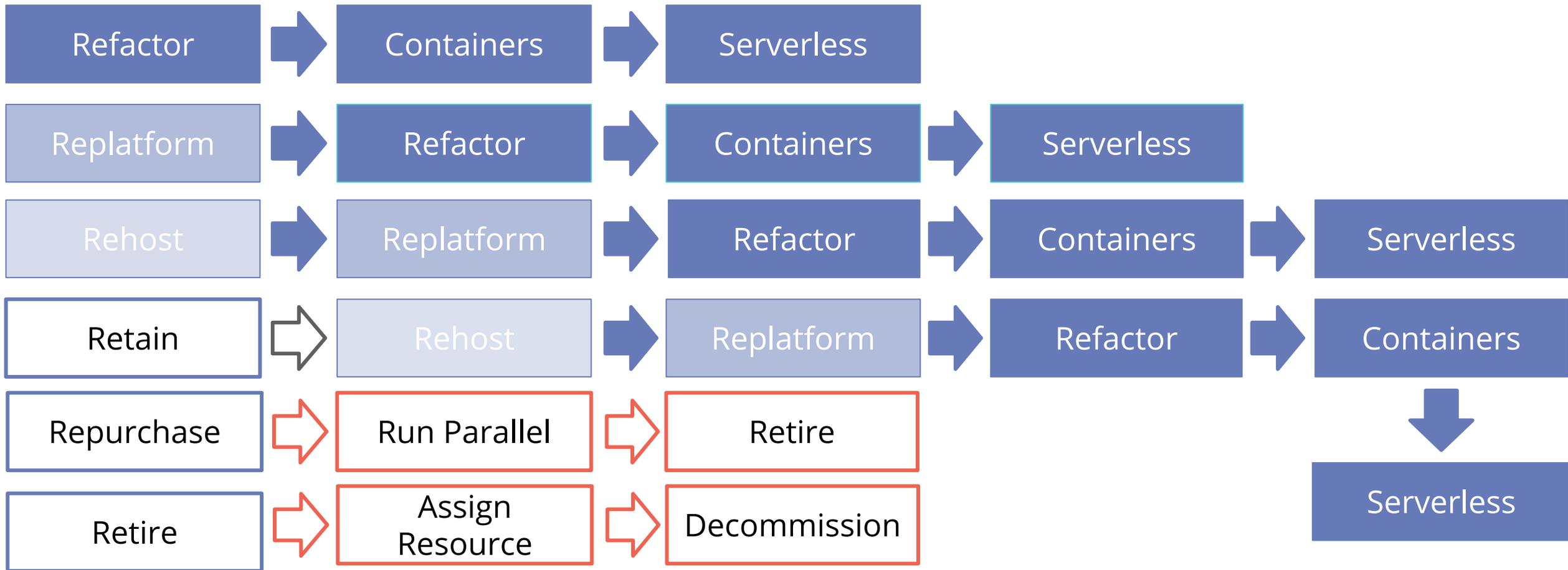
### Service Management



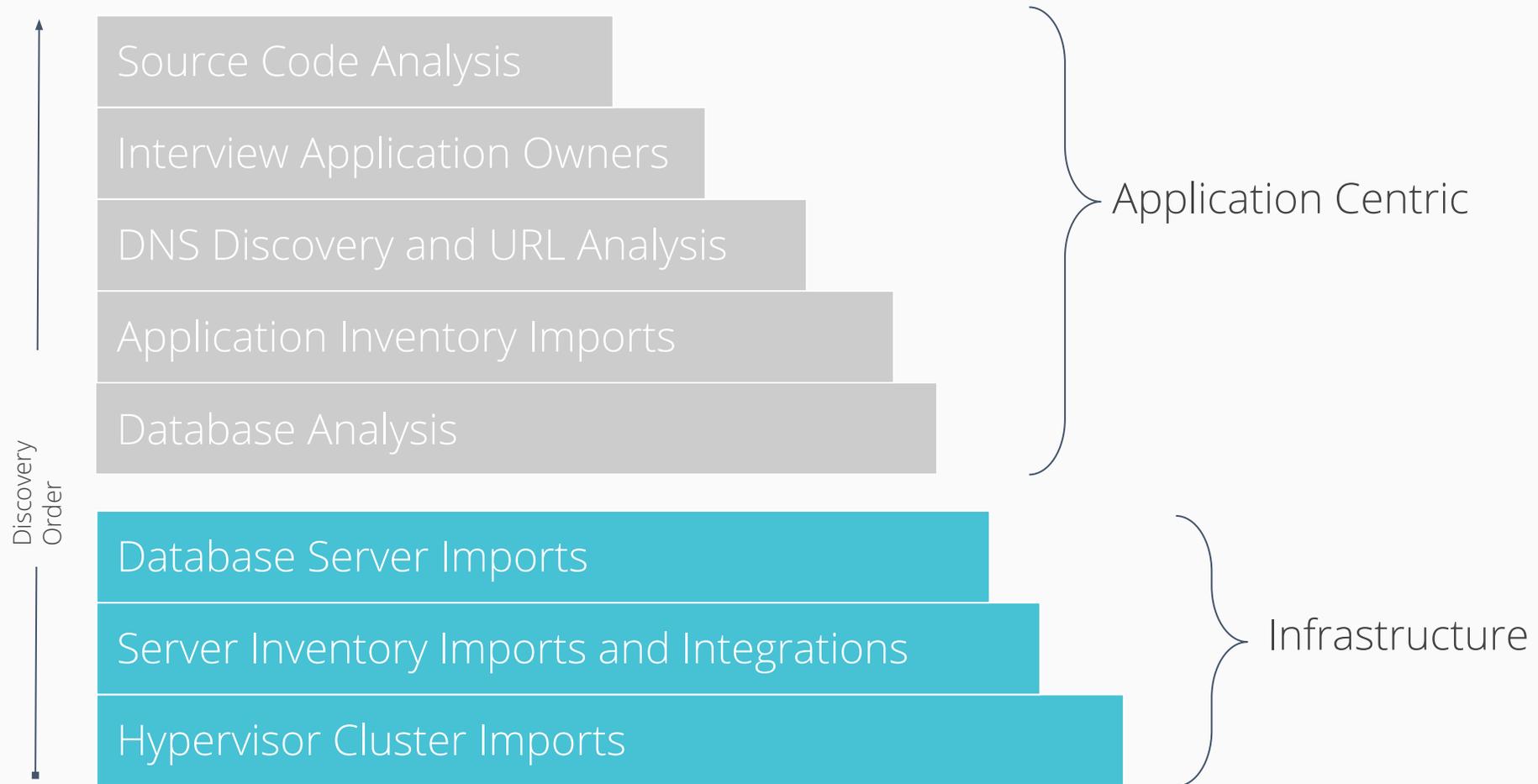


# 6 R's

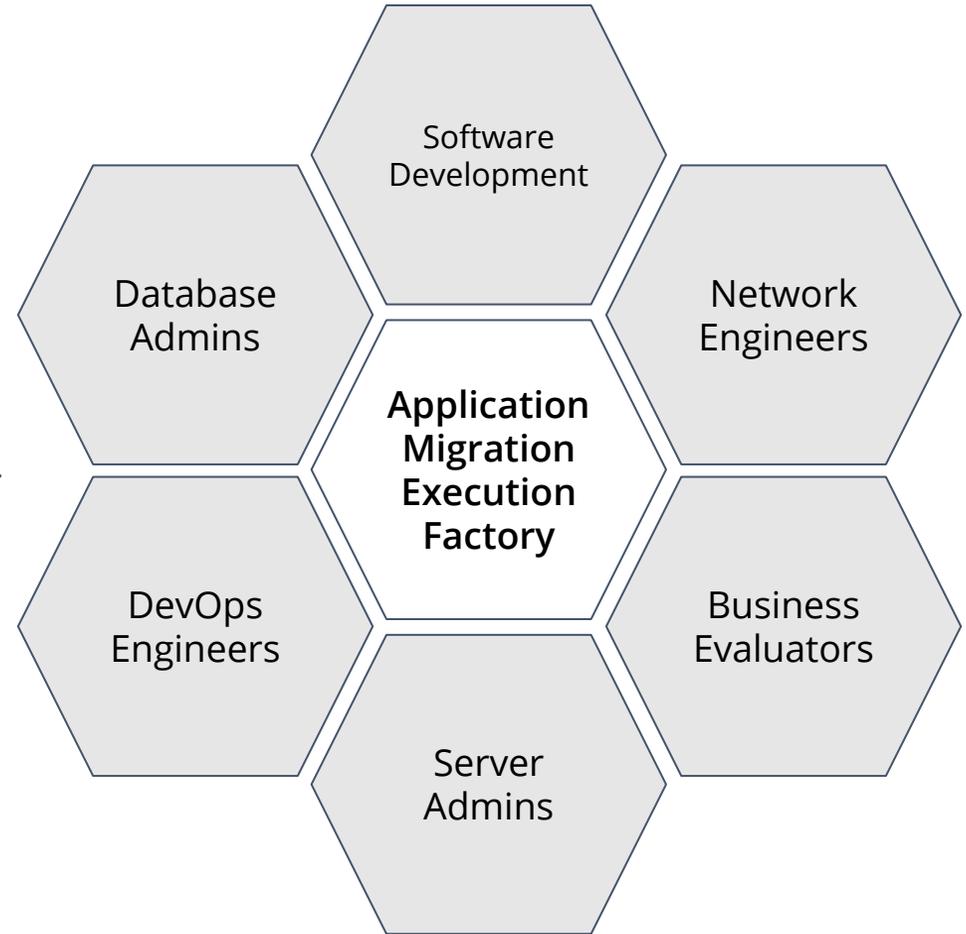
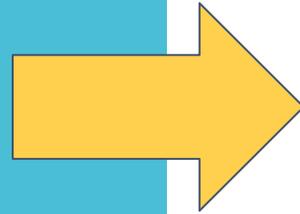
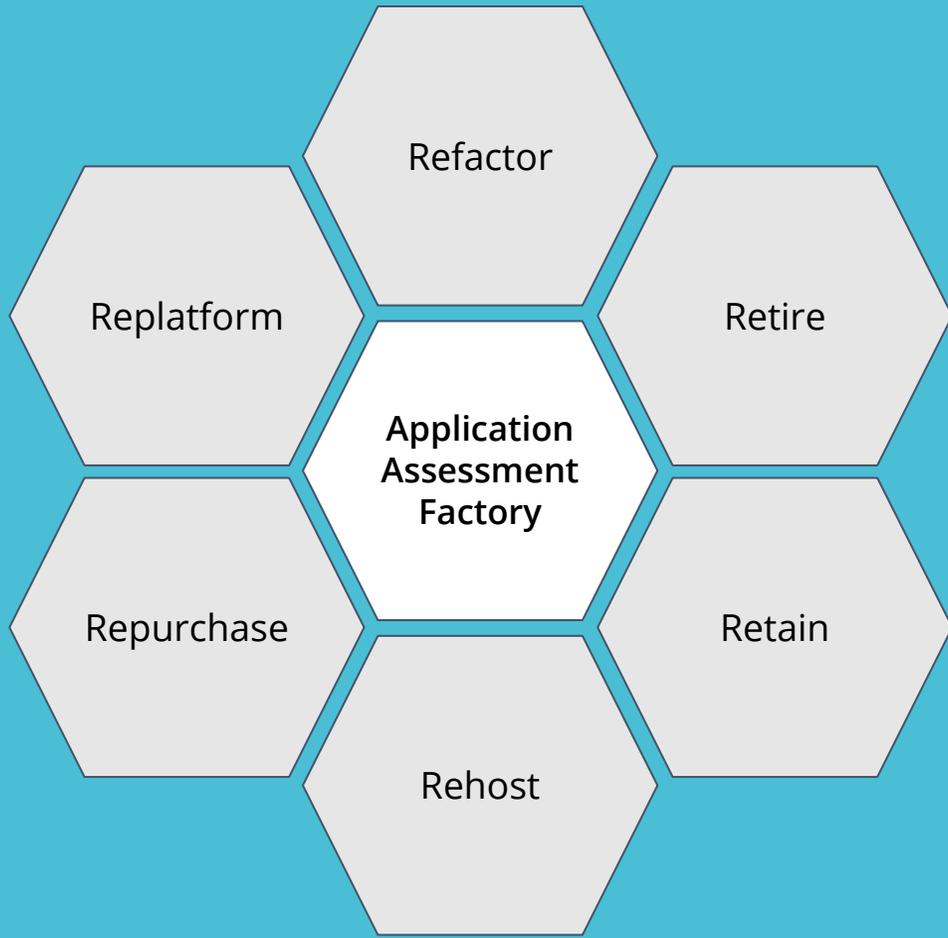
## Transformation Management



# Layered Approach to Discovery | Demo



# Two Factories



# WHERE FROM HERE?

## PROOF OF VALUE PROJECT

- Workshop with knowledge transfer to baseline the team
- Try the approach and the process on a limited number of applications in the portfolio
- Make recommendations as to categorization and prioritization utilizing the data
- Application Assessment report

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