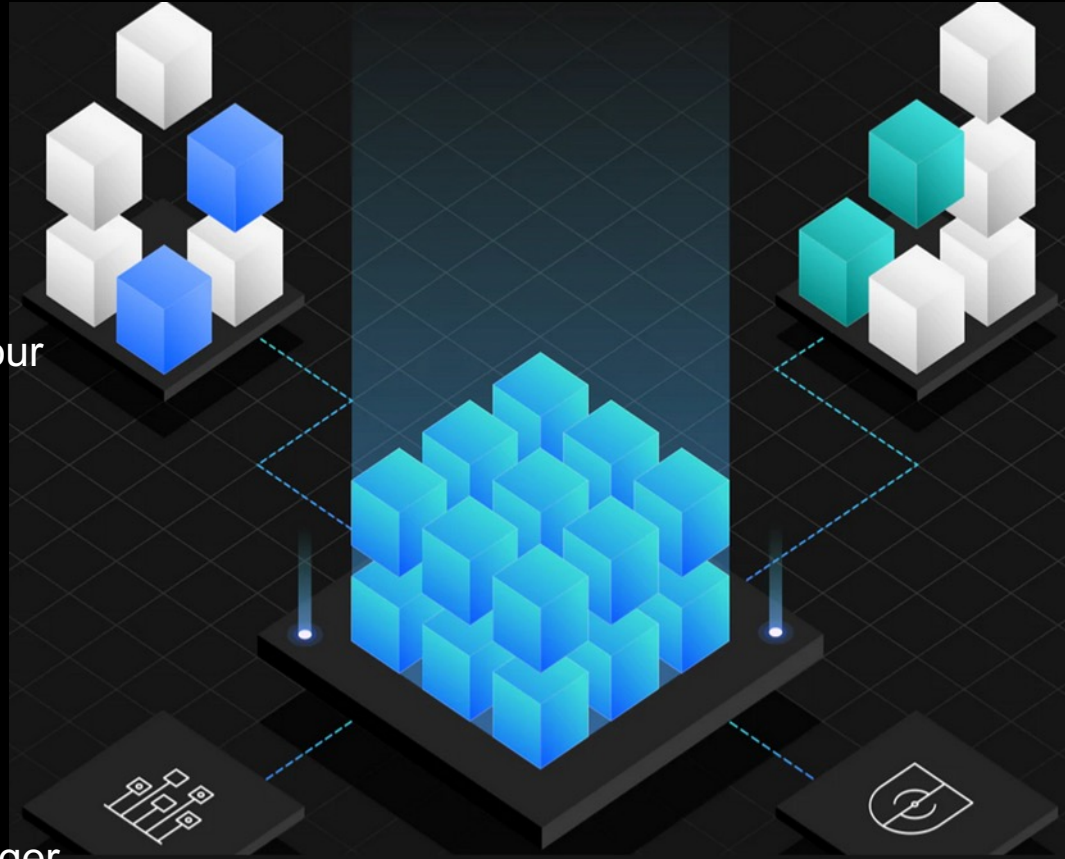


# WebSphere Hybrid Edition

Optimize, modernize and cloud-enable your applications and operations

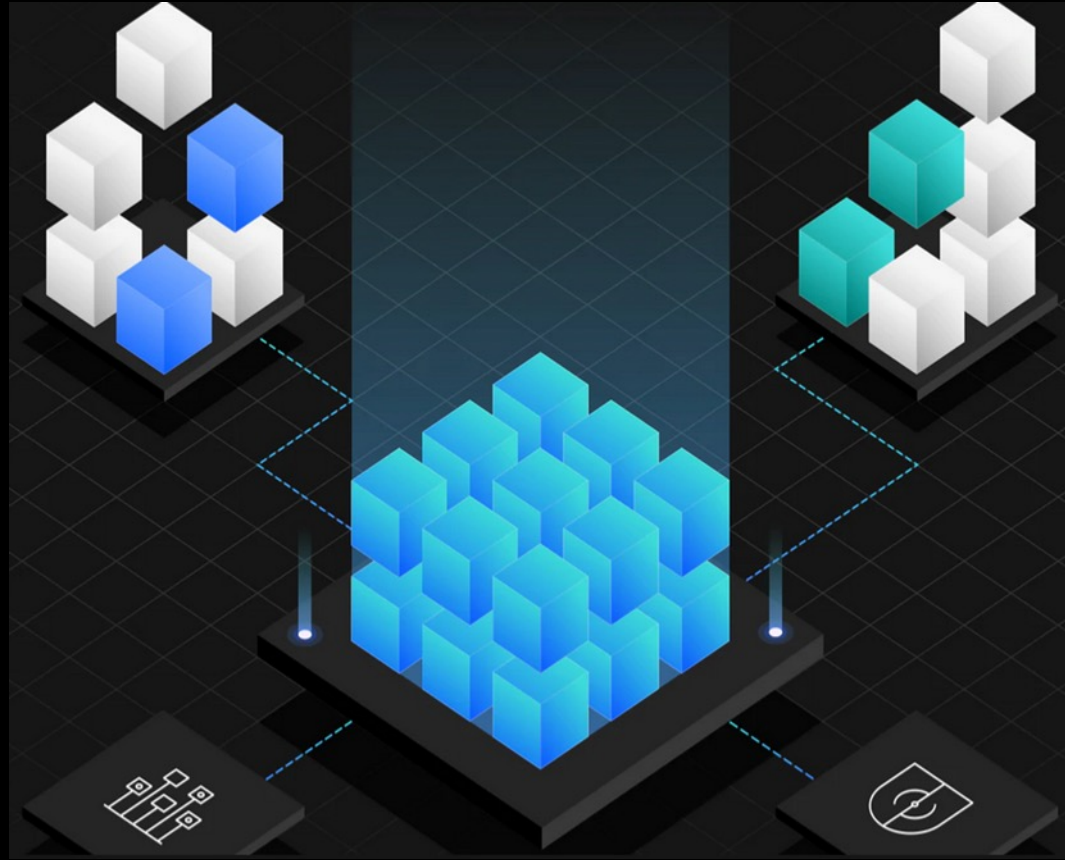
Gary Juvinall  
WW Sales Leader  
Application Platform & DevOps  
IBM Automation

Ed McCabe,  
WebSphere Hybrid Edition Product Manager



# Agenda

- The Key Challenges
- What's WebSphere Hybrid Edition
- Modernization
- WebSphere Liberty
- WSHE Trade-Up Business Value
- WSHE Forester TEI Study
- Next Steps



Organizations are facing an unprecedented convergence of technological, social and regulatory forces:

- Time to market challenges
- High operational costs
- Managing complexity



# Top concerns of WebSphere clients:

- Estate complexity
- Escalating costs
- Lack of cloud skills





A man in a dark blue IBM polo shirt is sitting at a desk in a server room, looking at a laptop. In the background, there are rows of server racks with glowing blue lights.

Left alone

40%

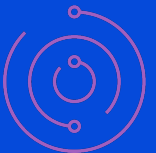
of IT budget will be consumed  
by technical debt.

Massive transformation  
programs are hard to  
greenlight and often fail to  
deliver quick results.

*How do you break through  
to innovation?*

# WebSphere Hybrid Edition

A leaner, more economical solution enabling clients to optimize WebSphere applications for immediate gains while also positioning their business for higher, near-term future value



# IBM WebSphere Hybrid Edition

## WebSphere Hybrid Edition

### *The destination for application workloads*

- **Modernize:** Enables application and operational modernization
- **At Your Pace:** Run existing and new workloads side-by-side and transition to containers
- **Flexibility:** Simple, ratio-based deployment flexibility
- **Reduce Cloud Cost:** increase deployment capacity by 75% - low disk & memory footprint, high throughput, without the compromises

## WebSphere Hybrid Edition

### *Bill of Materials*

- **WebSphere Application Server:**
  - WebSphere ND
  - WebSphere base
  - Liberty Core
  - Open Liberty
- **IBM Modernization & Developer Tools:**
  - Transformation Advisor
  - Mono2Micro
  - WebSphere Migration Toolkit

## WebSphere Hybrid Edition

### *Benefits*

- **Protects and optimizes** existing WAS investment
- **Complete set of tooling** to begin or accelerate the modernization journey
- **Cloud native** dev, build, test, deploy experience
- **Mix and match** capabilities to change the solution mix over time with ratio-based deployments

# Transformation Advisor

Quickly evaluates on-premises Java EE applications and messaging infrastructure to accelerate deployment of Liberty or WAS Base in containers on private or public cloud

Introspects deployments to determine complexity of modernization

Provides recommendations, detailed reports, artifacts, and automated deployment for simple application modernization

More Info: <http://ibm.biz/cloudta>



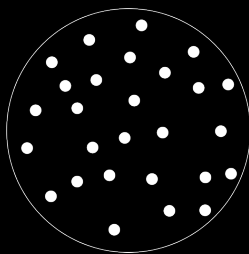


# Mono2Micro

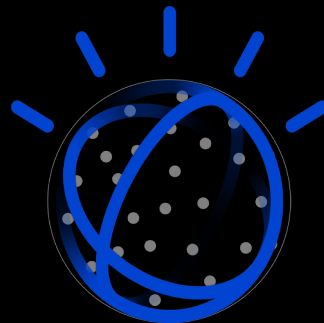
AI based automatic transformation of monoliths into microservices

Mono2Micro's AI capabilities generate recommendations, semantic analysis and a significant portion of the code needed for refactoring

Monolith



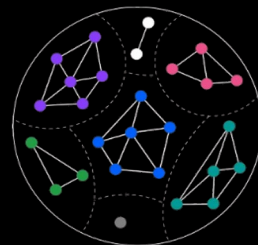
Microservice Generation Engine



AI identifies high cohesive, low coupling components

User can interactively refine recommended Microservices

Microservices

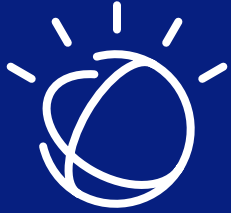


Generated Microservices ready to be deployed

Generates code for communication between microservices

More Info: [ibm.biz/Mono2Micro](https://ibm.biz/Mono2Micro)

# What is driving modernization ?



Clients can't  
develop  
features at  
the pace  
business  
requires

Application  
architecture  
is hindering  
ability to add  
functionality

Application  
is expensive  
to maintain  
and extend

# Modernization Benefits

## Architectural Modernization

*Align Application  
Delivery to business  
change dynamics*

Increased Agility  
Rapid Innovation

## Runtime Modernization

*Align Application  
Development to  
modern Java  
standards*

Right-sized runtime  
Reduced tech debt  
Leverage new capabilities

## Operational Modernization

*Adopt on-demand  
compute and immutable  
infrastructure*

Easier automation  
Increased density

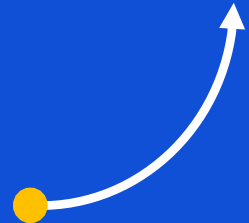
# Modernizing Java Application Estate



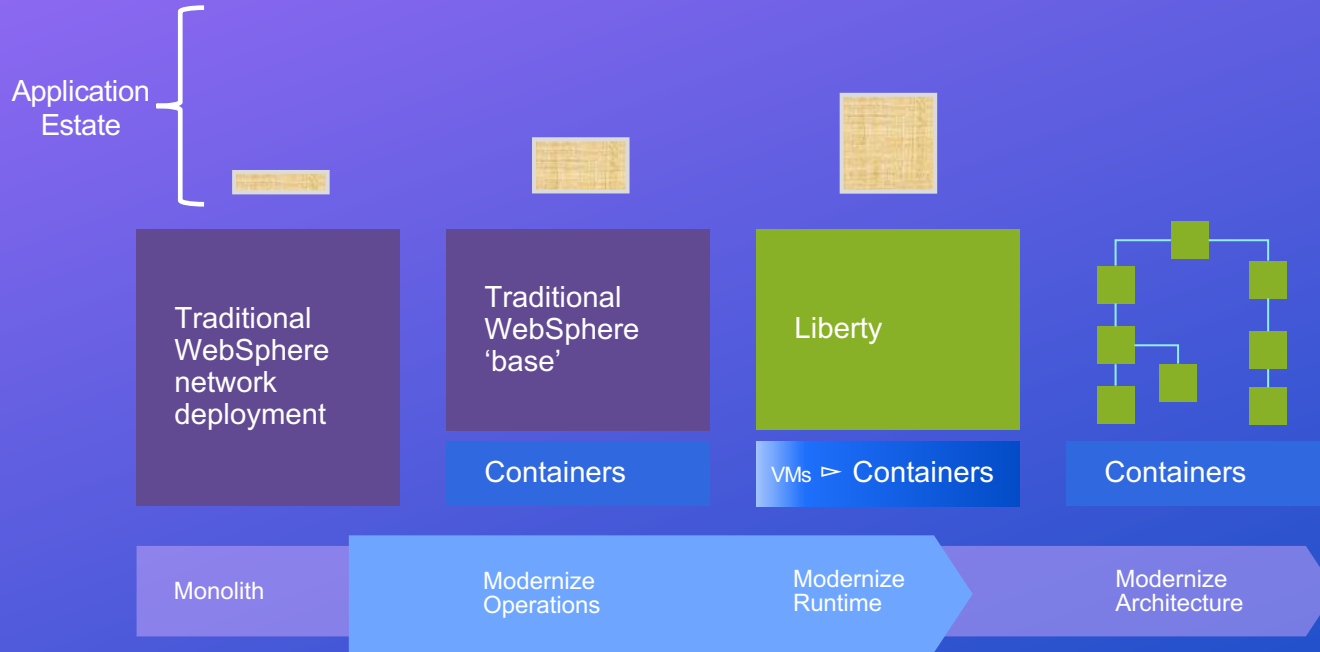
TCO



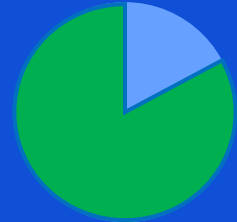
Innovation



# Modernizing Java Application Estate



TCO

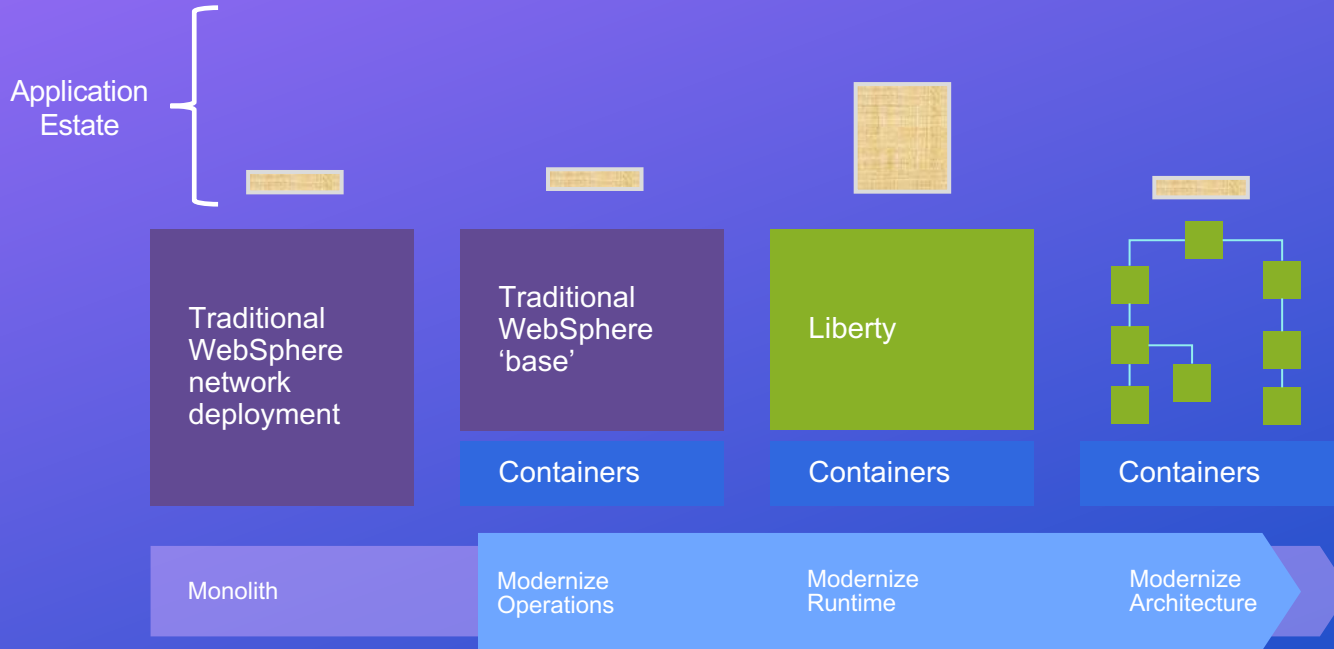


Innovation





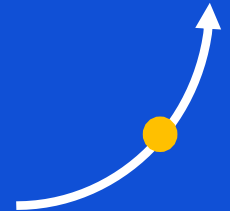
# Modernizing Java Application Estate



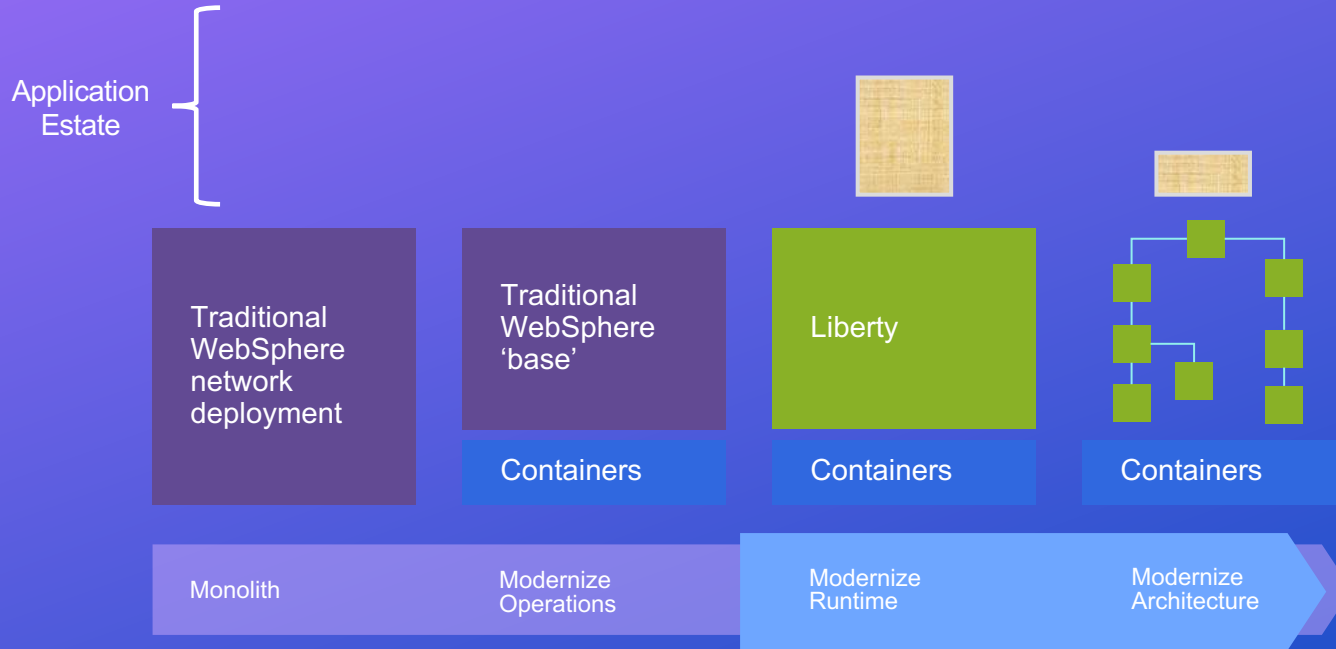
TCO



Innovation



# Modernizing Java Application Estate



TCO

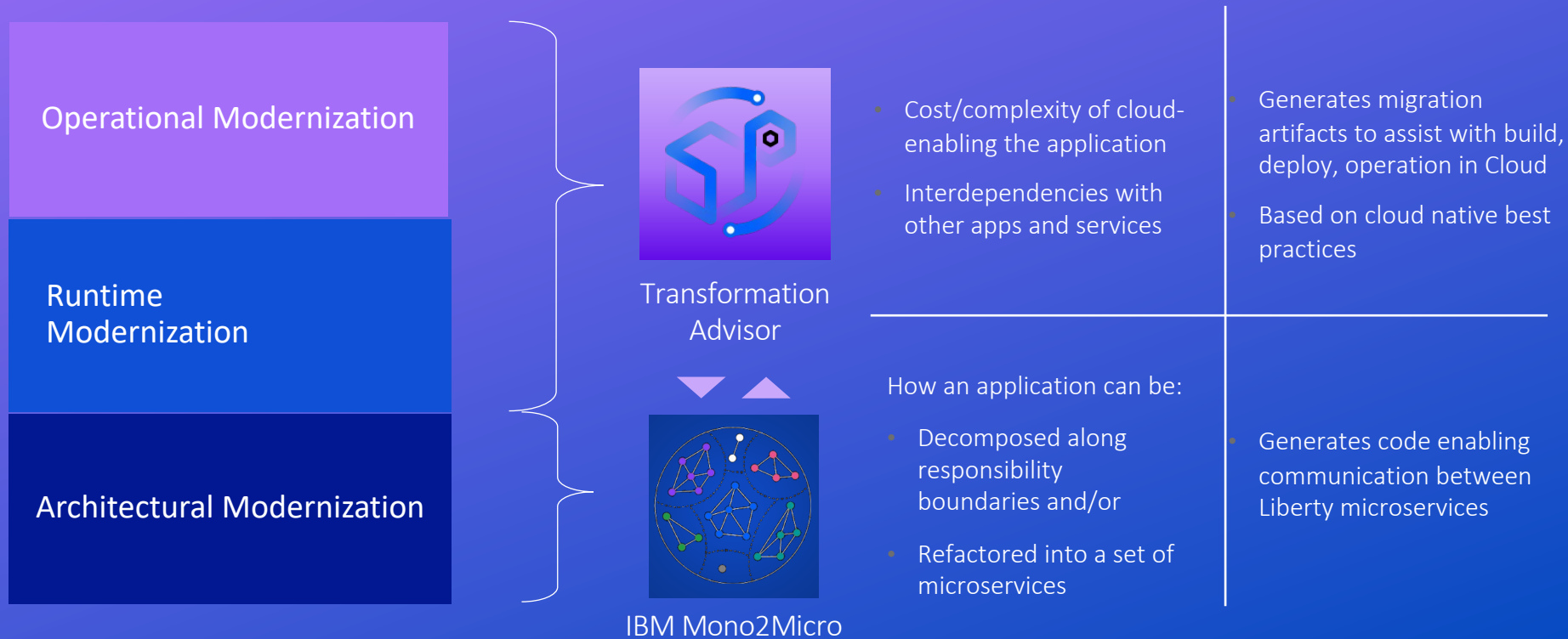


Innovation



# App Modernization Tools

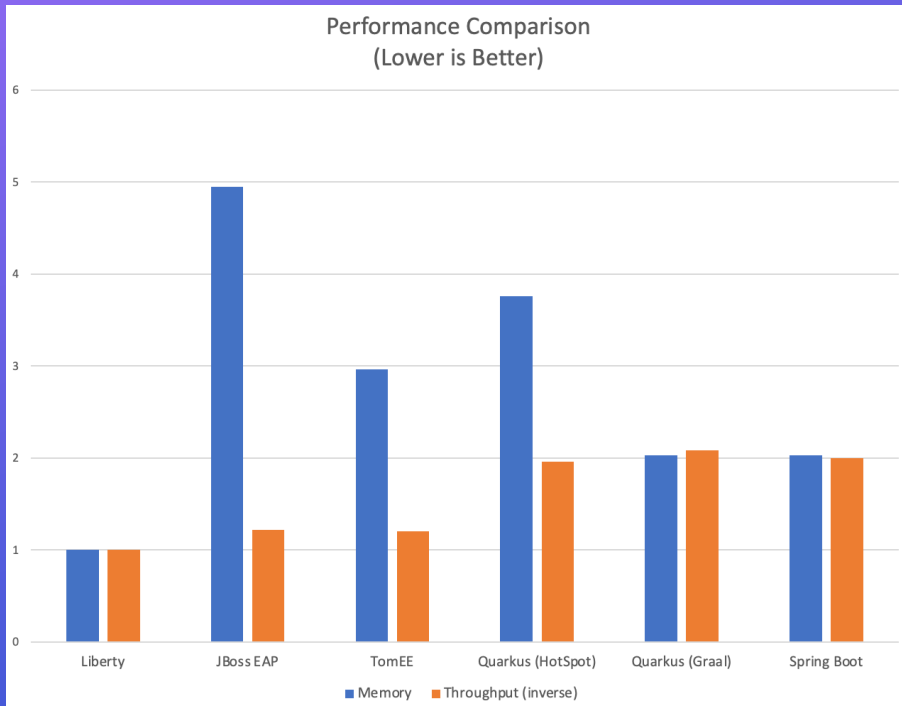
Accelerate the planning, sizing and execution of the modernization journey



# WebSphere Liberty



***Low Operating Cost – Any architecture, VMs or Containers***



- Better throughput means fewer instances for the same workloads
- Fewer instances means lower infrastructure and support costs
- Lower memory means lower memory costs for each instance.
- Public clouds tie memory and CPU in pricing models

# WebSphere Liberty

*Supports Java EE, Jakarta EE, MicroProfile, great for monoliths and microservices, ideal for modernization*



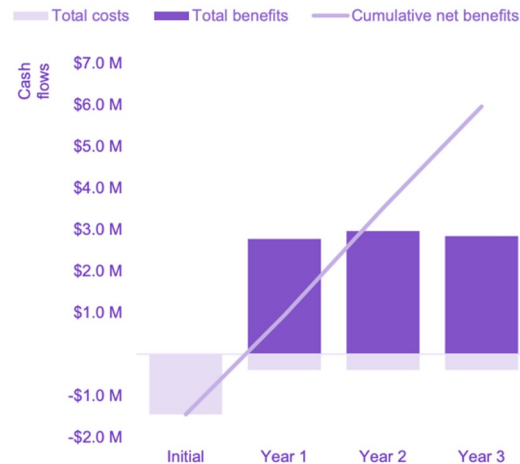
195% ROI

Payback  
8 months

## Financial Summary

### CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

#### Cash Flow Chart (Risk-Adjusted)



Low operating cost



4x increased density over  
Tomcat & Spring Boot

Just enough runtime



80% disk and 56% memory  
saving

Zero migration



100% v2v & fixpack  
migration saving

Continuous delivery



Zero-effort security fixing &  
zero technical debt

Kubernetes  
optimized



Self-tuned optimal perf,  
production-ready, kube-native

Developer experience



Container & kube-native  
experience, rapid inner loop



# IBM WebSphere Hybrid Edition

*The value of total flexibility*

1. Buy WebSphere Hybrid Edition VPCs

2. Deploy product VPCs on ratio basis

1 Unit of WSHE : n-Ratio-deployment	n-Ratio
WAS ND (includes Liberty)	1
WAS Base (includes Liberty)	4
WAS Liberty Core	8

Unlimited components for use with WebSphere Hybrid Edition
Transformation Advisor
Mono2Micro

## What is the value of “Total Flexibility”?

- “All you can wish” platform
- “Right size” entitlements
- Transition at your own pace

These values are key for customers now and as they continue on their journey to the cloud

# Flexible Licensing Option WebSphere Hybrid Edition

1 VPC of  
WebSphere Hybrid  
Edition entitles:

1 VPC ND \*or\*  
4 VPCs Base \*or\*  
8 VPCs Liberty Core

OR mix & match

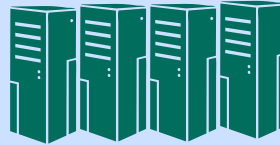
AND can redeploy  
new mix over time

**8x** Liberty Core



- ✓ Web, mobile, OSGi apps (Web profile specification)
- ✓ Subset of Liberty Base

**4x** WAS  
[includes Liberty]



- ✓ Web, Java EE apps and extensions
- ✓ Secure, high performance transaction engine

**1x** WAS ND  
[includes Liberty]

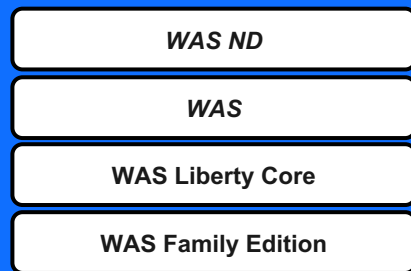


- + High availability
- + Intelligent management
- + High scalability and more...

**Flexibility!** Lets you deploy the WebSphere App Server edition you need, when you need it!  
**Reduces the risk** of buying ahead by being able to “right size” your WAS environment as projects develop.

# IBM WebSphere Hybrid Edition Trade-Up/Upgrade

## Stand Alone Offerings



## Flexible Offering

**WebSphere Hybrid Edition**

## Business Value of Trading Up

1. **Migrate to Cloud** at your rate and pace
2. **Modernize and/or refactor existing applications** to container-ready runtimes
3. **Protect your Investment:** Continue to run existing apps - WebSphere, Liberty
4. **Develop and deploy new Cloud Applications:** 84% delivery improvement from traditional methods
5. **Flexible licensing:** Mix and match capabilities, VPC licensing, Subscription, CapEx to OpEx

## **Clients are seeking additional value from their existing investment in WebSphere**

- WebSphere Hybrid Edition provides a flexible licensing option for all the editions of WAS
- Clients now have the flexibility to move (right-size) from WAS ND to lower cost WAS/Liberty Base and/or Liberty Core to free up additional licenses for growth, to move to a container-friendly edition of WAS, to potentially lower investment costs over time, or all of the above.

## **Movement to VPC metric and Subscription Licensing**

- Frees up excess growth capacity for some clients running 100 or 120 PVU-rated cores
- Consistent with the licensing policy of public cloud platform providers – no more counting PVUs!

# Virtual Processor Core

## *A Value-Added Licensing Metric*

**Virtual Processor Core (VPC):** The VPC metric is more closely aligned with the “virtual core” pricing model for Public Cloud providers, making it simpler to determine the number of required licenses

- No distinction is made based upon the relative processing power of a core
- No more counting Processor Value Units!

In addition to the value of simplified sizing, the VPC metric may provide additional financial benefits:

- Clients running 100 or 120 PVU per core hardware environments may free up significant excess capacity by converting to VPCs through trading-up/upgrading to WebSphere Hybrid Edition
- For growth or net new investments, pricing for WebSphere Hybrid Edition (VPC metric) may be lower than the price of standalone WAS PVU-based offerings for 100 and 120 PVU-rated hardware environments

Current Number of Processor Value Units Required Per Core	Conversion to Virtual Processor Cores via Upgrade/Trade-Up to WebSphere Hybrid (Conversion rate is 70 PVUs per VPC)	Potential Excess Capacity from Conversion (Illustration Only)
70	$70/70 = 1$ VPC	None
100	$100/70 = 1.43$ VPCs	43%
120	$120/70 = 1.71$ VPCs	71%

# The WebSphere TEI study

FORRESTER

## The Total Economic Impact™ Of IBM WebSphere Hybrid Edition

Cost Savings And Business Benefits  
Enabled By IBM WebSphere Hybrid Edition

AUGUST 2021

A FORRESTER TOTAL ECONOMIC IMPACT™ STUDY COMMISSIONED BY IBM

### Executive Summary

IBM WebSphere Hybrid Edition allows organizations to embrace cloud modernization and technologies such as containers and microservices to increase capacity, reduce costs, and reduce IT complexity — all while removing friction from the day-to-day duties of their developers and IT staff. This yields increased productivity, flexibility, and shortened development cycles.

For organizations to drive infrastructure efficiency, increase the speed of software development, and transform apps with cloud enablement at the forefront, they must embrace technologies such as containerization and microservices while continuing to enable their developers and IT staff with the tools they need to flexibly deliver timely and secure functionality to the business.<sup>1</sup>

WebSphere Hybrid Edition is comprised of multiple IBM solutions that support an organization's application modernization journey all under one license. WebSphere Liberty is a Java Enterprise Edition (Java EE), Jakarta EE, and a MicroProfile server runtime provides a low-overhead Java runtime environment that is well-suited for hosting cloud applications and microservices. WebSphere Liberty is designed to be highly composable, to start fast, to use less memory than other solutions, and to easily scale. Developers have access to popular tools and Liberty features that increase their productivity. A more modern administrator console simplifies administration of the Liberty environment. Open Liberty is also an option for developers looking for the flexibility and community of an open-source option. Included in WebSphere Hybrid Edition is additional functionality, like IBM Cloud Transformation Advisor and IBM Mono2Micro, which ensures an optimized and efficient path to cloud for an organization's workloads.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises

### KEY STATISTICS



Return on investment (ROI)  
**195%**



Net present value (NPV)  
**\$4.69M**

may realize by deploying WebSphere Hybrid Edition. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of WebSphere Hybrid Edition on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with experience using WebSphere Hybrid Edition. For the purposes of this study, Forrester aggregated the experiences of the interviewed customers and combined the results into a single composite organization.

Prior to using IBM WebSphere Hybrid Edition solutions, the interviewed organizations struggled to maintain a balance of application modernization and related infrastructure savings, developer and IT staff efficiency, and application innovation.

After the investment in IBM's WebSphere Hybrid Edition, the organizations embraced technologies such as containers and microservices to reduce costs and IT complexity, all while removing friction from the day-to-day responsibilities of their developers and IT staff. This yielded increased productivity and shortened development cycles.

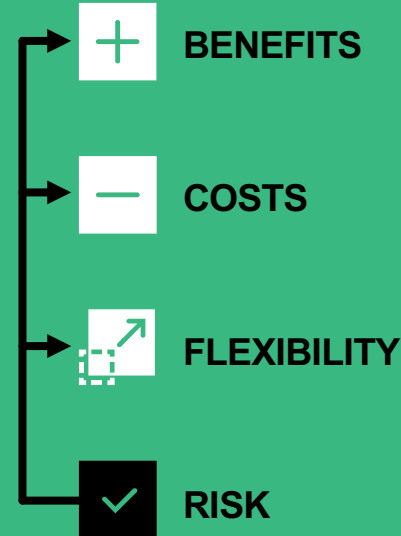
THE TOTAL ECONOMIC IMPACT™ OF IBM WEBSPHERE HYBRID EDITION



# What Is A Forrester TEI Case Study

TEI™ is a proven, consistent, repeatable methodology to justify technology investments

## TOTAL ECONOMIC IMPACT



# The Forrester TEI Case Study is:



**Based on real  
customers experience  
via interviews**



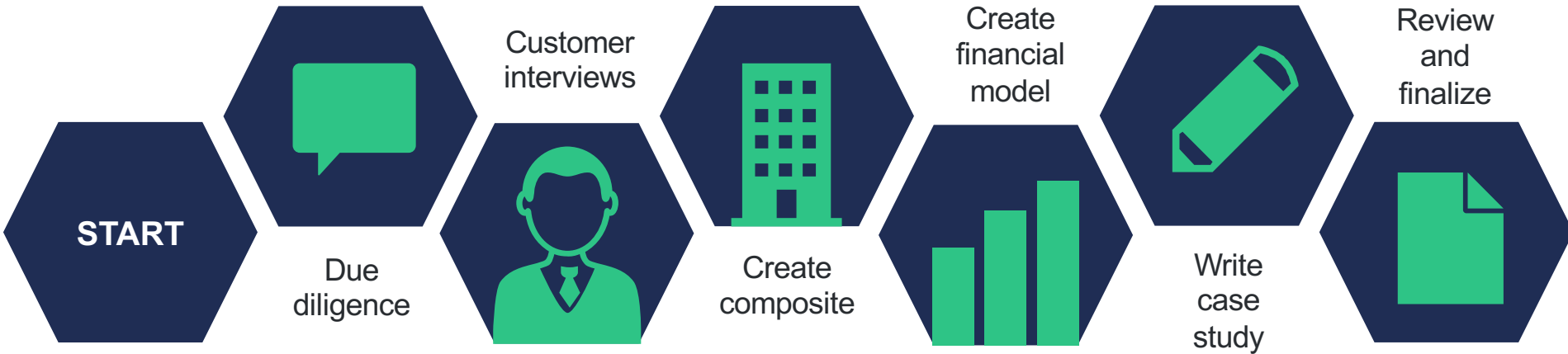
**A model for your use**

**FORRESTER®**

**Objective, 3rd party  
research**

[\*WebSphere Hybrid Edition Forester TEI Study\*](#)

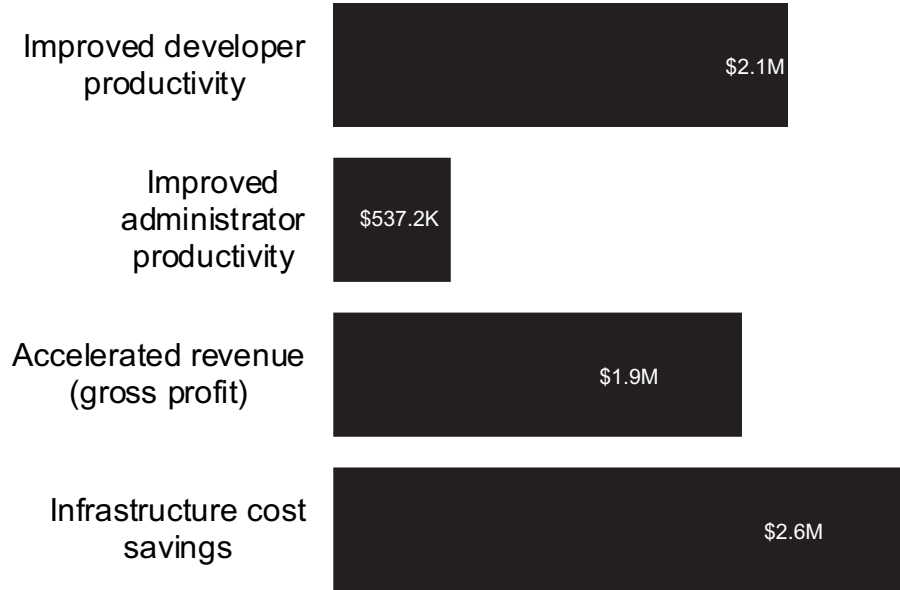
# How did Forester conduct this research?



# Three-year risk-adjusted benefits

Based on interviews with current customer organizations, as applied to the composite

## Benefits (Three-Year)



*"We've reduced the latency between the discovery of a problem and actually fixing it. Our developers are able to find problems faster and go through the debugging cycle and get to feedback a lot quicker. As a result of that, we're able to deliver [applications] to the business faster."*

Product manager, banking

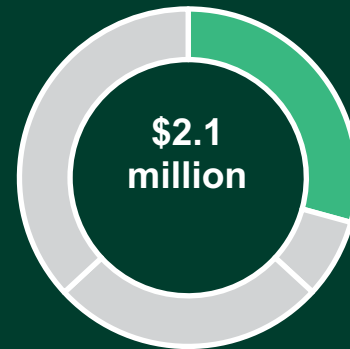


**25%** Reduced developer migration effort



**50%** Reduced development effort

# WebSphere Hybrid Edition improves developer productivity





# IBM WebSphere Hybrid Edition improves IT administrator productivity

## CUSTOMER EXPERIENCE

*[Our IT administrators have] become self-sustaining despite attrition. We don't worry so much about it because our developers have become so much more efficient that we don't need as many hands to support them. WebSphere has made us all more efficient and a little more knowledgeable.*

**System administrator, retail**

## CAPTURING VALUE

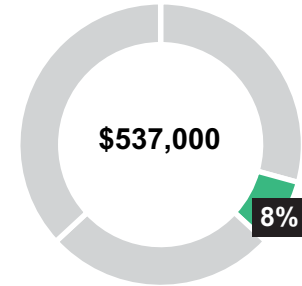
**10** affected IT administrators

**\$120,000** averaged annual salary

**50%** productivity capture

## FINANCIAL IMPACT

**\$537K**



Three-year present value benefit

# IBM WebSphere Hybrid Edition supports improved infrastructure utilization

## CUSTOMER EXPERIENCE

*We can scale on the same host or multiple hosts as we need to. We can scale up or scale down.*

**System administrator,  
middleware team, retail**

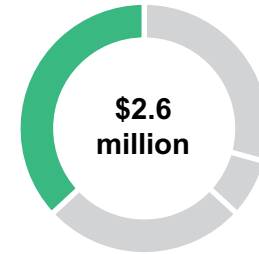
## CAPTURING VALUE

**\$3.50M-\$3.85M** yearly  
spend on infrastructure

**25%-40%**  
improvement to  
infrastructure utilization

## FINANCIAL IMPACT

**\$2.6M**



Three-year present value  
benefit

# WebSphere Hybrid Edition enables application and microservice development, accelerating revenue and profit

## CUSTOMER EXPERIENCE

*Having the level of support we have is a massive benefit. It really is critical to the bank to have this support during critical incidents. The faster you can deliver, the bigger the impact of even a small delay. As an organization, we're starting to focus on daily deployments, which is an agile, DevOps mentality. WebSphere [Hybrid Edition], drives our ability to deliver on our business commitments.*

Product manager, banking

## CAPTURING VALUE

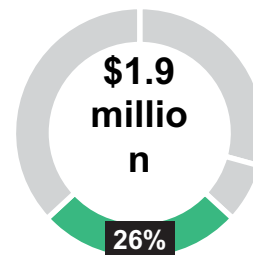
12-24 affected customer-facing applications or microservices

**\$60,000** average monthly revenue per app/service

**3 months** accelerated development

## FINANCIAL IMPACT

**\$1.9M**



Three-year present value benefit

# ROI Calculator

## Client Specific analysis

IBM Cloud

IBM Websphere Hybrid Edition ROI Calculator

Powered by IBM Competitive Insights

1. Input

2. Investment

3. Value Benefits

4. Final Results

### Calculator Assumptions


Ref.	Improved developer productivity	Default	Input
A1	Developer FTEs tasked with migration on WebSphere Liberty	5	5
A2	Reduced migration effort	25%	25%
A3	Developer burdened salary	\$165,000	\$165,000
A4	Productivity capture	50%	50%
A6	Developers using WebSphere Liberty	20	20
A7	Reduced development effort	50%	50%

Ref.	Improved administrator productivity	Default	Input
B1	Affected administrators	10	10
B2	Improved efficiency due to WebSphere Liberty	40%	40%
B3	Average burdened annual administrator salary	\$120,000	\$120,000
B4	Productivity capture	50%	50%


Ref.	Accelerated revenue (gross profit)	Default	Input
C1	Newly developed customer-facing applications or microservices	12	12
C2	Monthly average revenue per application	\$60,000	\$60,000
C3	Accelerated development time (months)	3	3
C5	Incremental gross profit margin	25%	25%

Ref.	Infrastructure cost savings	Default	Input
------	-----------------------------	---------	-------


v2.01.27.2022




ROI  
229%




PV ROI  
195%



NET BENEFITS  
\$7.10M



NPV  
\$4.69M



PAYBACK  
0.6 years

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# WebSphere Hybrid Edition

*The ultimate flexibility across open source, platform, and runtimes all in one place!*

WebSphere Application Server  
Network Deployment

WebSphere Application Server

WebSphere Application Server  
Liberty core

Modernization Tools:  
Transformation Advisor  
Mono2Micro

- **FLEXIBILITY:** “Right-size” and modernize between the various WAS editions
- **CHOICE:** Run and optimize apps on the broadest range of supported runtimes
- **GUIDED EXPERTISE:** Empower teams to start modernizing quickly with increased productivity through market-leading tools
- **PORTABILITY:** Container-ready runtimes for hybrid multi-cloud
- **EXCLUSIVES:**
  - *Perpetual and Subscription licensing available*
  - *Virtual Processor Core*
  - *Supported Transformation Advisor*
  - *Supported Mono2Micro*



# Take the next steps

Get better synergies between development and operations teams for both new and evolving workloads



Use Modernization Tools to accelerate adoption of Containers and Microservices with Liberty



WebSphere Liberty  
[ibm.biz/6ReasonsWhyLiberty](https://ibm.biz/6ReasonsWhyLiberty)

[Jumpstart your Modernization Project with IBM Expert Labs](#)

Explore moving a WebSphere application to Liberty  
[ibm-cloud-architecture.github.io/modernization-playbook/applications/liberty](https://ibm-cloud-architecture.github.io/modernization-playbook/applications/liberty)

[Assess applications with Transformation Advisor](#)

Test drive the Mono2Micro refactoring experience  
[ibm.biz/Mono2Micro](https://ibm.biz/Mono2Micro)

Enable developers with Application Migration Toolkit  
[ibm.biz/wamtdownloads](https://ibm.biz/wamtdownloads)

Contact IBM or IBM's Business Partner to Leverage the ROI Calculator for your specific application

