Housekeeping

Get the slides & session recording via email

Ask questions

Share your thoughts

Presenter

Chris Koppe
SVP, Strategic Modernization
Fresche Solutions

30+ years working with hundreds of business & IT leaders to develop
and deploy IBM i application modernization & transformation
strategies across languages, databases and technologies.

What Does Modernization Mean to You?

UI

Architecture

Database

Tablet

Robotics

AI

Mobile

Business Drivers for Modernization

Disrupt or Respond to Disruption

Business Reinvention

Agility – improve time to market

Innovate beyond competitors

Growth – new channels & markets

Client Experience obsession

Merger and acquisition consolidation

Compliance (GDPR, SOX, etc.)

Lower costs = increase profitability

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Technical Drivers for Modernization

New Web / Tablet / Mobile Interfaces

Reporting and Data Management

AI & Predictive Analytics

Integrations via Service / API interfaces

Lead Innovation Efforts

Leverage New Technologies and Approaches
(Open Source, Cloud, Robotics, Blockchain)

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The Role of IT in Innovation

Enablers
Technicians
Integrators

Thought Leaders
Innovators

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IBM i Application Modernization Strategies

Rewrite from Specifications

The most expensive approach ideal when the application no longer meets the requirements of the business. Highest execution risk.

Tool-assisted Rewrite

Automated discovery and extraction of Business Rules and other design artifacts to enhance a manual rewrite approach.

Automated Transformation

Optimal degree of automation that generates maintainable code with an acceptable cost / risk profile.

Package Acquisition

Such a replacement strategy should be considered when available. Ideal for commodity type applications or modules.

Emulation Platform

Rapidly lift-and-shift legacy applications and databases to another platform while retaining monolithic architectures and technologies.
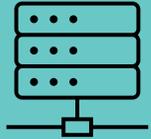
Automated Conversion

This is delivering with the highest degree of automation at the expense of generated code quality and maintainability.

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Major Elements of Modernization

Infrastructure

Database

Application Architecture
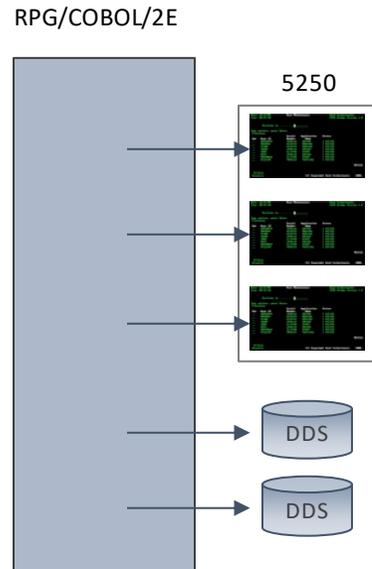Coding/Languages

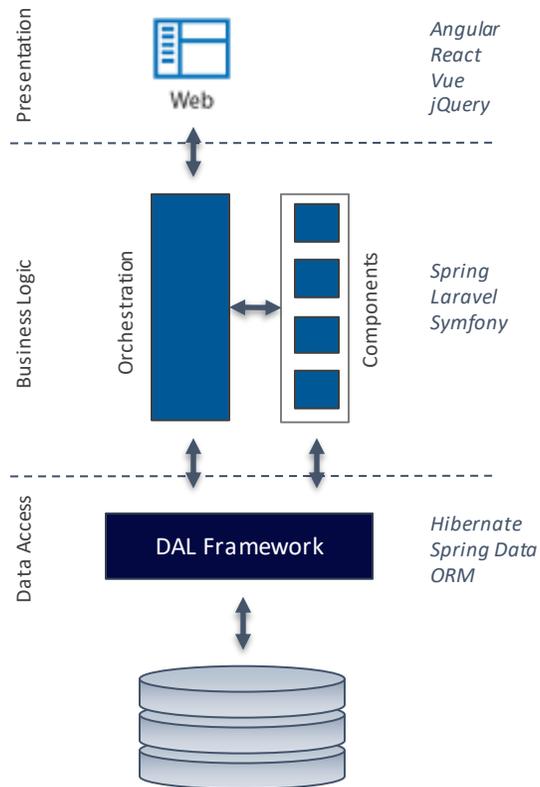User Interface
Mobile/Tablet Access

Reporting & Analytics

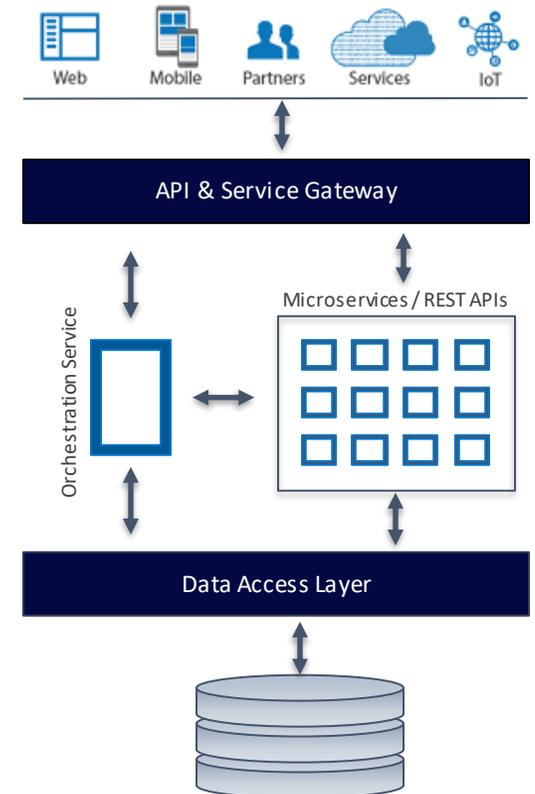Security

Application Architecture Trends

Legacy Monolithic

RPG/COBOL/2E

5250

DDS

DDS

Components, Layers, with Frameworks

Presentation

Web

Angular
React
Vue
jQuery

Business Logic

Orchestration

Components

Spring
Laravel
Symfony

Data Access

DAL Framework

Hibernate
Spring Data
ORM

API / Microservices

Web   Mobile   Partners   Services   IoT

API & Service Gateway

Orchestration Service

Microservices / REST APIs

Data Access Layer

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Next-gen IBM i Applications

🐇 Quickly Respond to Business Needs
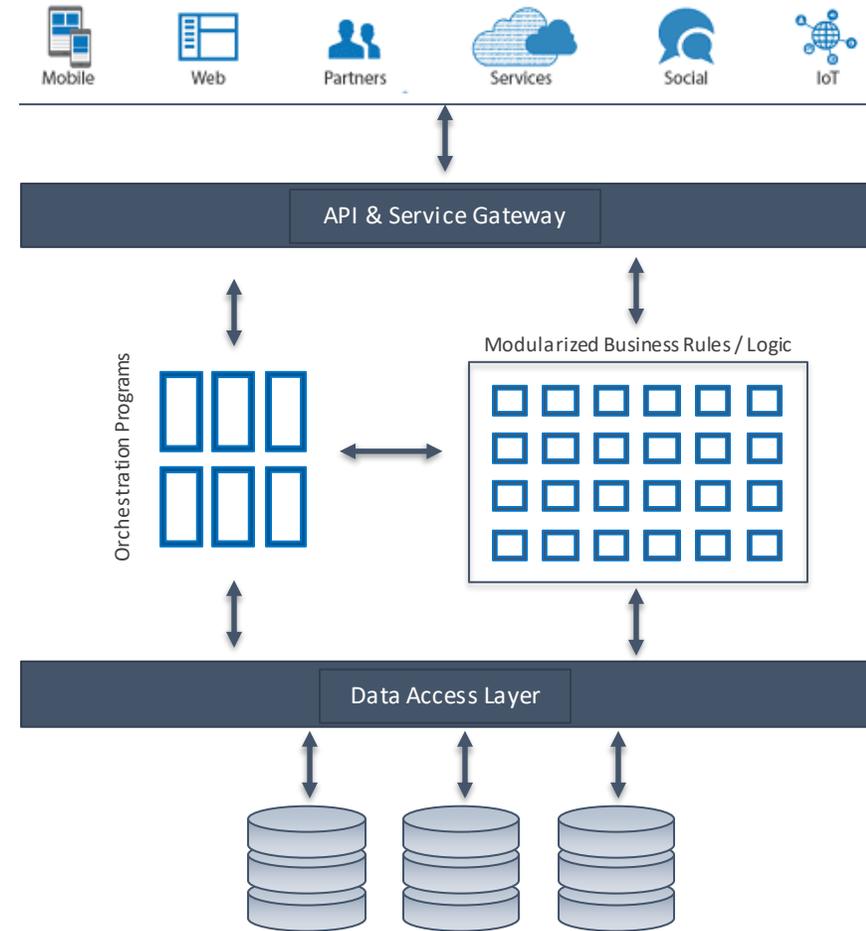DevOps, CI/CD, Agile

🌐 Encapsulate processes & data
Creating assets for the business

🥤 Blend technology
Using the "best fit for purpose"

☁️ Cloud Ready / Cloud First

Mobile   Web   Partners   Services   Social   IoT

API & Service Gateway

Orchestration Programs

Modularized Business Rules / Logic

Data Access Layer

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Database Trends

- Mainstream adoption of SQL

- Monetizing Data as an Asset

- Security & Encryption

- Database Governance and Stewardship

- Multi-tenant & DB Domains

- Data marts, warehouses, lakes

- Data accessibility, predictive analytics, insight, reporting

Extending Capabilities
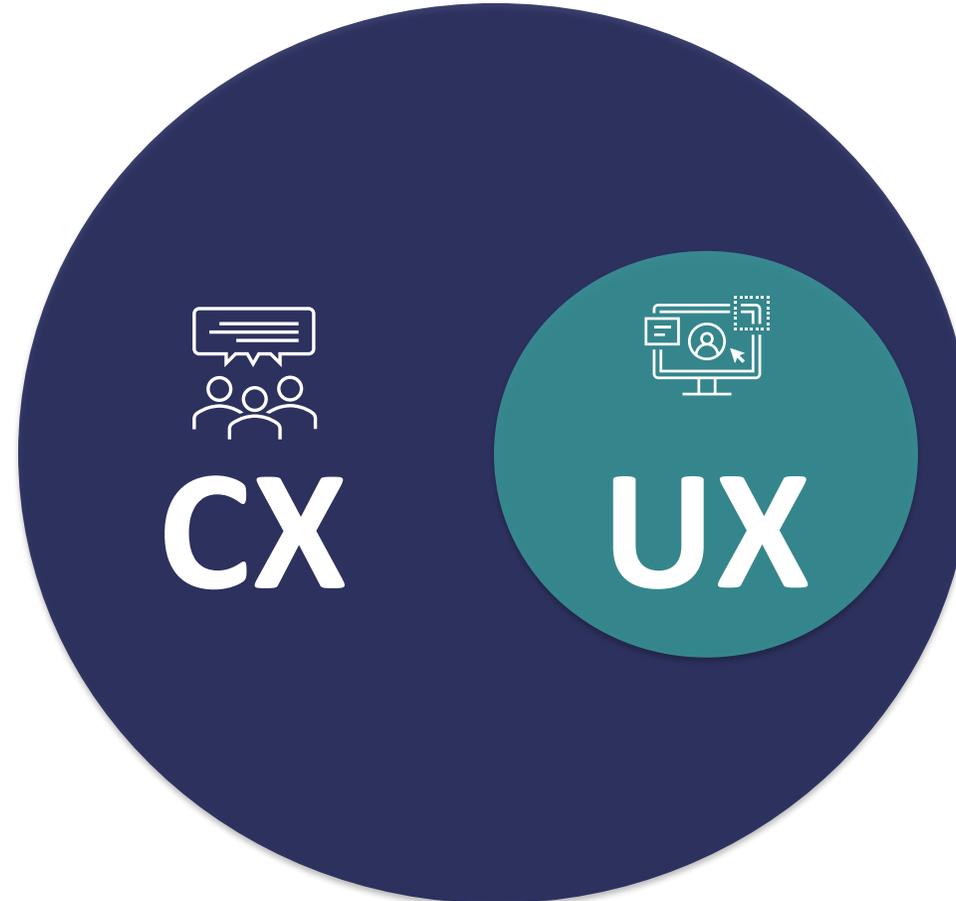
NoSQL databases

Graph databases for fraud

VS

SQL   **NoSQL**
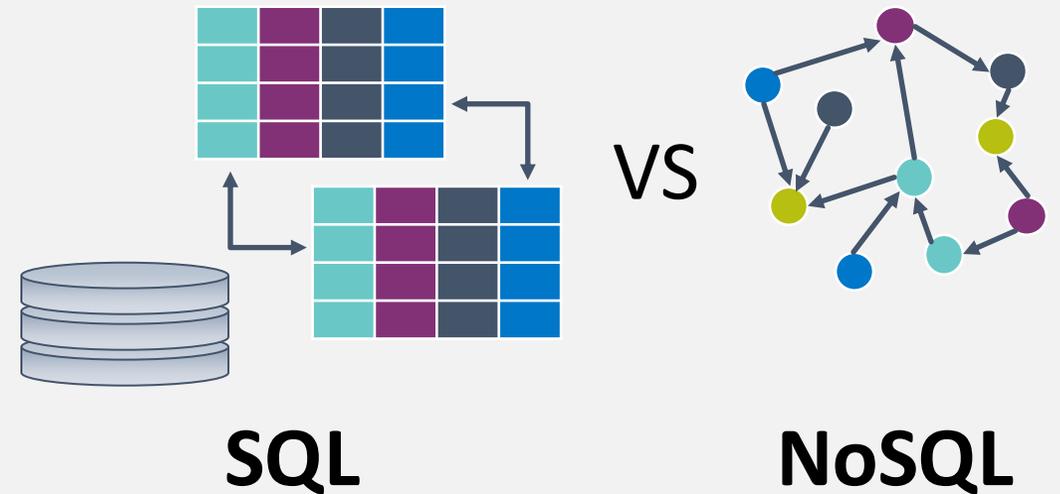
# Customer Experience   vs.   User Experience

CX   **UX**

Customer Experience (CX):
- Purchase Experience
- Customer Service
- Pricing Fairness
- Product Availability
- Product Delivery
- Brand Reputation
- Advertising

User Experience (UX):
- Usability
- Visual Design
- Interaction Design
- Content Design
- User Research
- Performance
- Efficiency

Mobile/ Tablet Enablement (Digital Solutions)
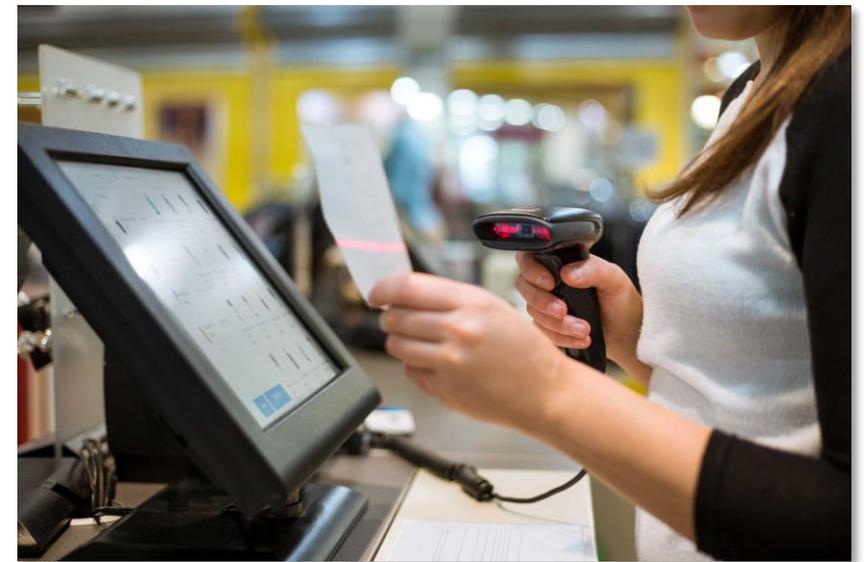
Skills Needed to Capitalize on Application Transformation

Frameworks	Languages & Architecture	Tooling & DevOps
• Enterprise Design Thinking • Agile development methodologies • Test driven development • Mobile development • Modular Programming • Modern Database Design	• Modern languages • Modern Web UI Frameworks • REST and other API / Service Architectures • JSON and others • Security for Services	• Modern tooling (Confluence, Jira, Analysis tools, Git, Jenkins, etc.) • Continuous Integration, Continuous Development (CICD) • Build Pipelines

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Poll: Which Modernization Initiatives Are You Considering?

Creating a Strategic Modernization Roadmap
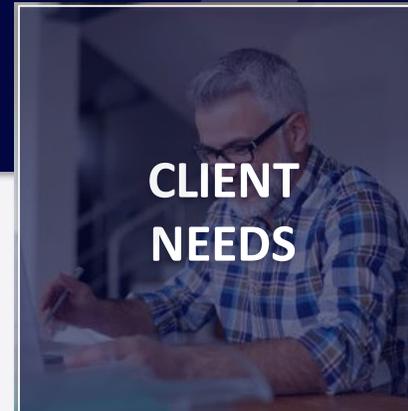
Aligning Business Vision to Modernization Plans

Vision
What does the future look like?
When do we want to be there?

Strategy
Goals / Objectives
Priorities
Methods
Rationale

Roadmaps
Journey
Milestones
Implementation
Tactics
Resources

Transformation Considerations

Resources & Skills

Strength of Business Case

Investment & Budget
(Cap-ex vs. Op-Ex)

Timing / Business Priorities

Culture

Time

Appetite for Innovation & Change

Business Value Alignment

Make Money
(New revenue streams)

Save Money
(actual not theoretical)

Enable New Capabilities
(Innovation)

Examples

> Improving TTM & Agility

> Enabling Business Growth

> New Routes to Market

> Competitive Disruption / Differentiation

> Data as a Marketable Asset

> Business Continuity – Risk reduction

> Compliance – Regulatory and Security

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Business Process Improvement Examples – Actionable Ideas

Simplify Operations
Streamline approval processes / eliminate duplicate work like entering data into multiple systems

Lower Costs
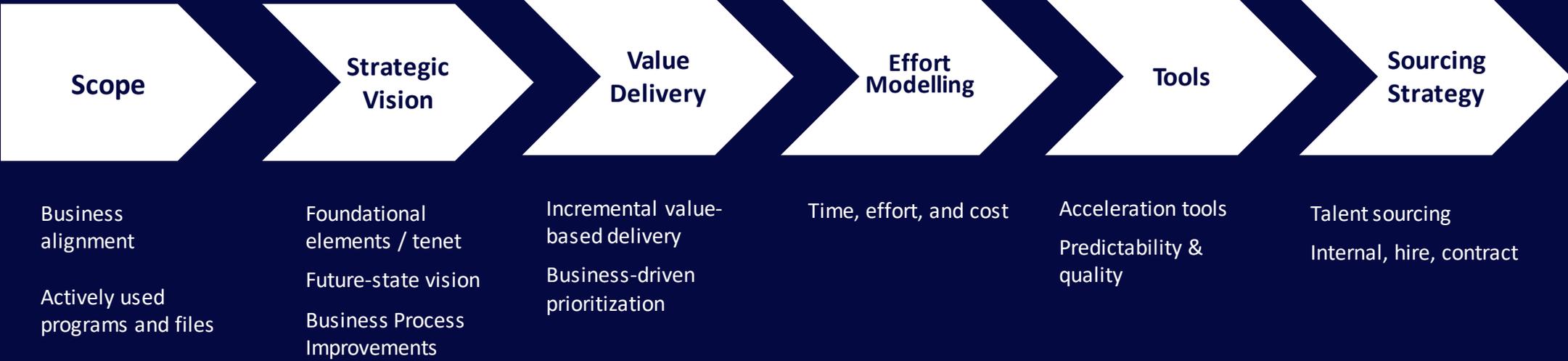Shift from paper records to electronic

Improve Quality
Introduce process automation / Track customer complaints

Enhance Productivity
Improving cross-functional information sharing and collaboration

# Strategy Modernization Roadmap Development Process

Scope

Strategic Vision

Value Delivery

Effort Modelling

Tools

Sourcing Strategy

Business alignment

Actively used programs and files

Foundational elements / tenet

Future-state vision

Business Process Improvements

Incremental value-based delivery

Business-driven prioritization

Time, effort, and cost

Acceleration tools

Predictability & quality

Talent sourcing

Internal, hire, contract

Real-World Example

Winsupply

Business Drivers for Modernization:

- Current application cannot support business growth objectives

- Legacy skills are becoming rare and will not be sustainable in the long-run

- One-off modernization initiatives have been marginally successful

Modernization Goals:

- Consolidate over 600 databases into a set of domain-specific databases

- Path to sustainable IT and portability (Java, cloud, etc.)

- Field expansion of 4 key fields

- Isolate, secure, and limit data access

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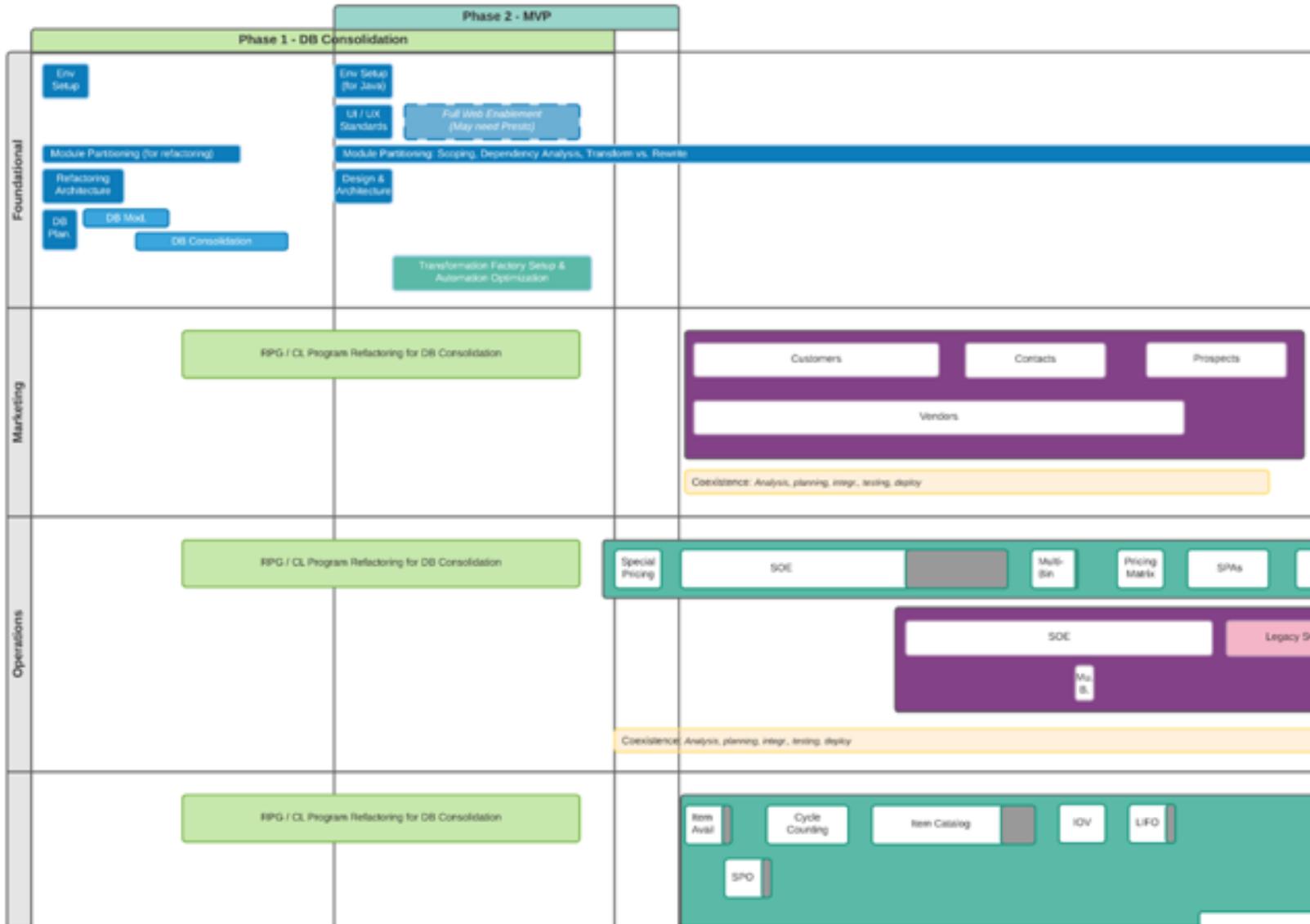
Roadmap Highlights:

- DB consolidation first enables business growth

- MVP for Transformation to validate end-to-end approach

- Incremental modernization to de-risk programme

- 55% transform / 45% rewrite over 5-years (module-by-module)

Quick Wins

Choosing Quick Wins (for the business)

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✓ Business value-driven

- Improving customer experience
- Streamlining a process
- Reducing effort or cost
- Addressing a long-standing pain

- **Ask! Collect requirements (consider a design thinking approach)**

✓ Technical feasibility

- Easy or quick to implement
- Inexpensive
- Demonstrates a better future
- Shows efficiency improvements or cost reductions
- Shows the value of modernisation
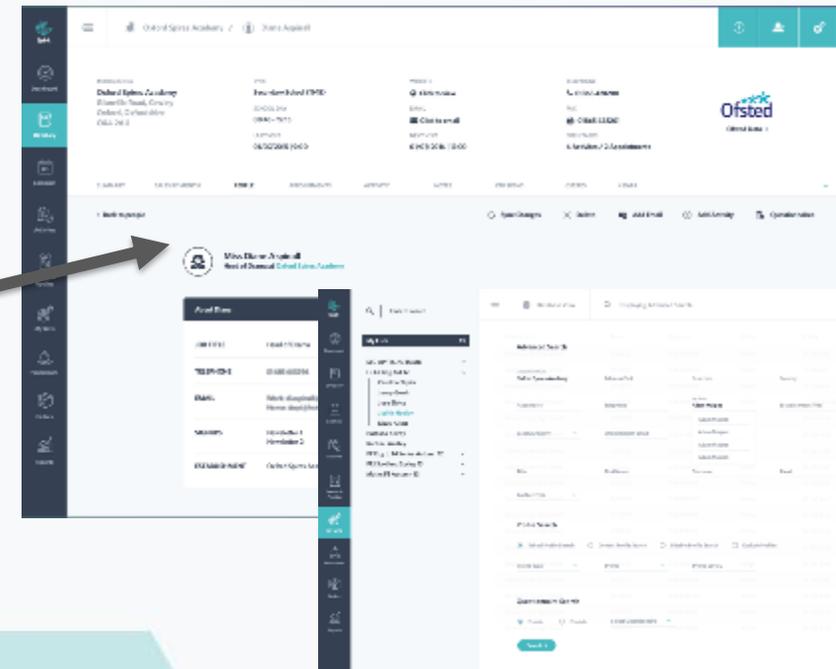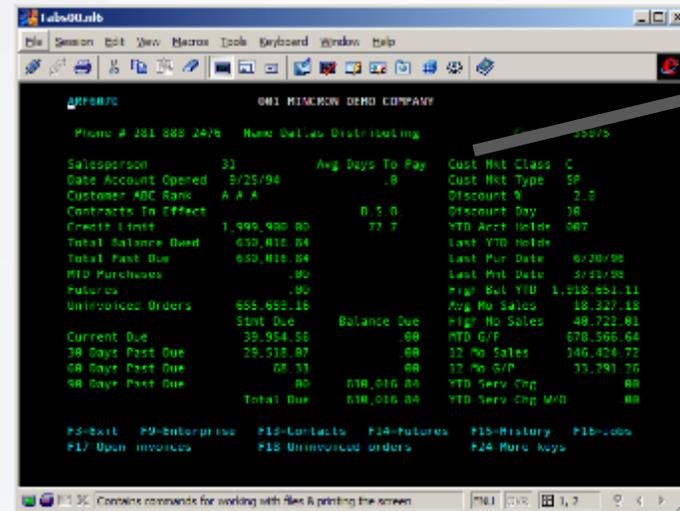
- **Quantify the ROI / value to business!**

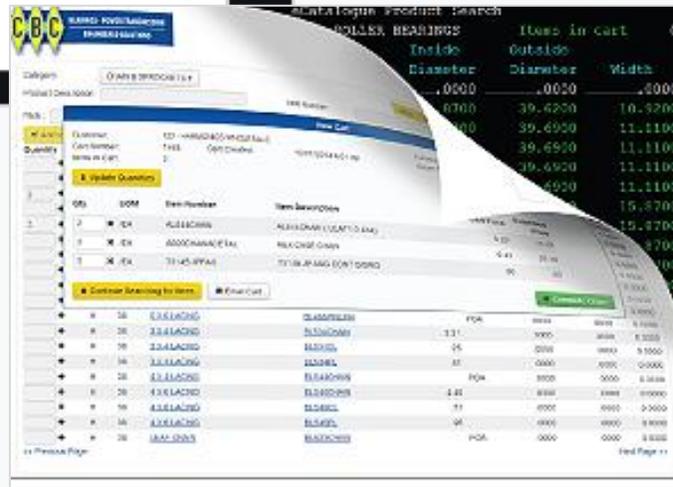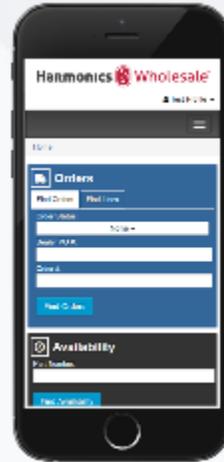# Web Enablement (Green Screen Modernization)
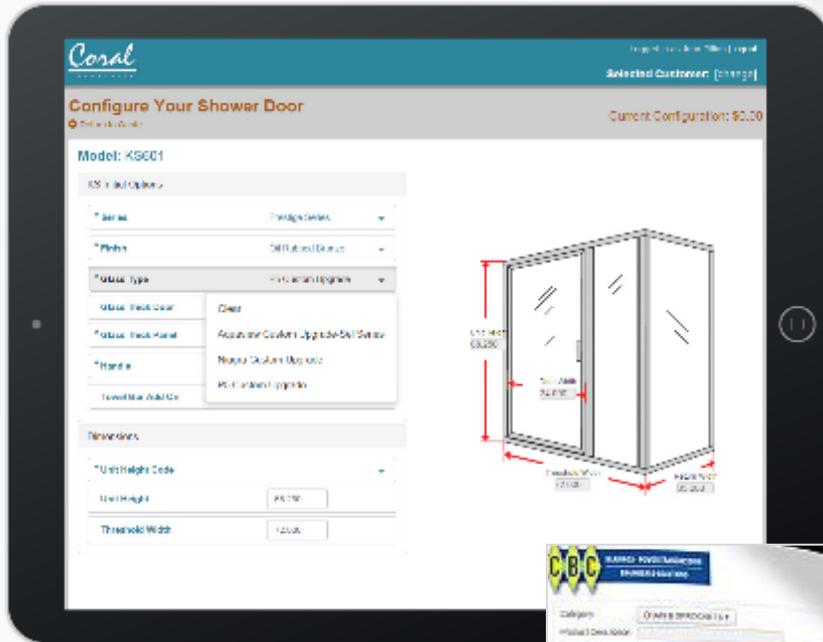
How to:

> Product and quick implementation

> Iterative enhancements with the business

How much:

> Time: 1-3 months

> Cost: $20-100K

Tablet / Mobile Enablement

How to:

> Product and quick implementation

> Iterative enhancements with the business

> Mobile-native Later

How much:

> Time: 1-3 months

> Cost: $20-100K

Customer / Partner Portal

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How to:

➤ Web development

➤ Product-based web refacing of existing client process

➤ API enablement

➤ Client driven workflow / process improvements
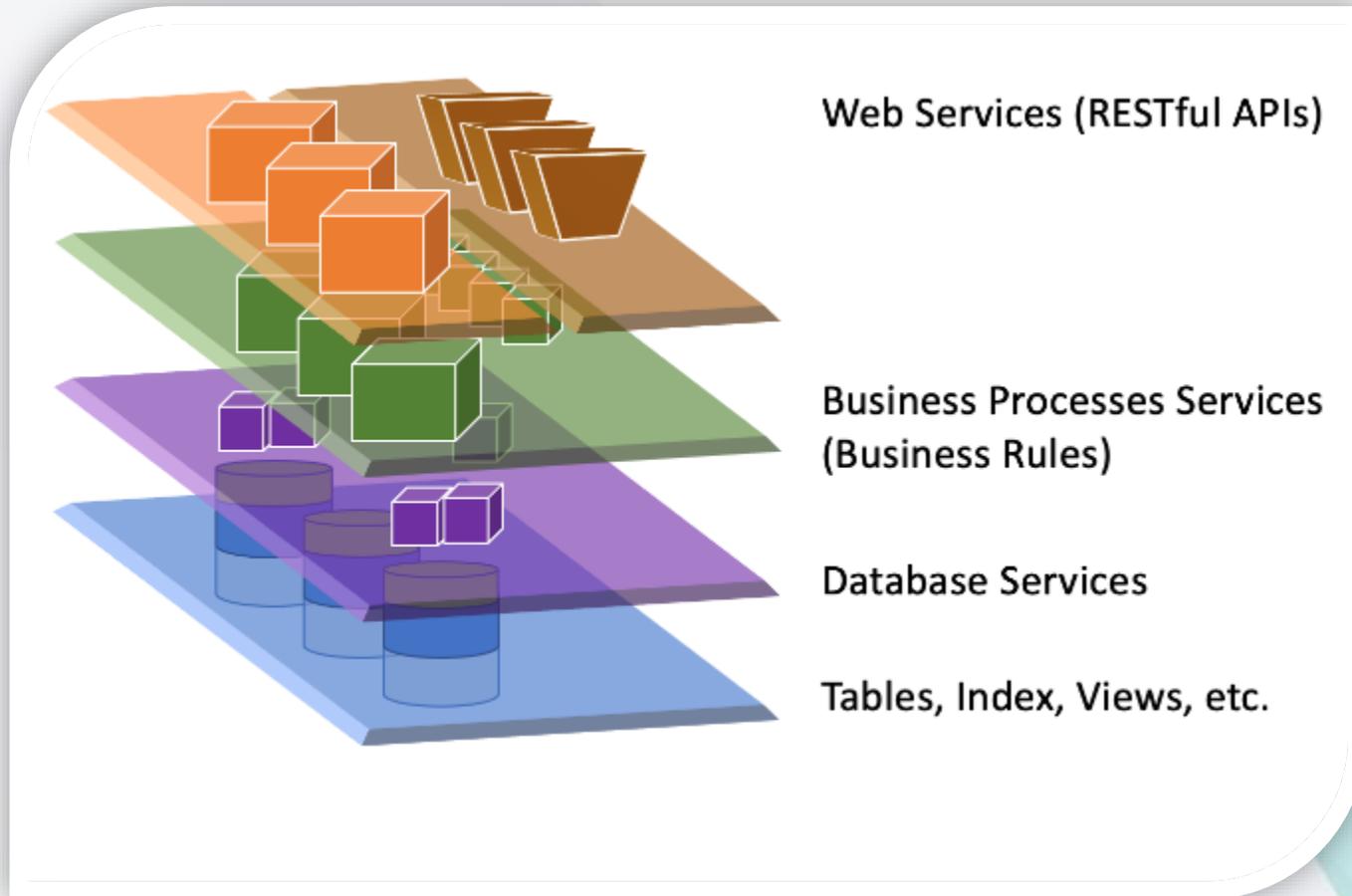
How much:

➤ Time: 2-6 months

➤ Cost: $50-200K

---

ical Laboratory
Medical Laboratories

Microbiology Results and Observations Entry   ? Help

Worksheet Information   QA TOR

Barcode :	**010**
Service Date :	2013-07-30
Test Ordered :	WOUND CULTURE
Worksheet :	MISC
Bacti # :	000000
Remarks :	SITE: ARM SCRAP ARM WOUND

Patient Information

Patient :	DOE, JOHN
Age :	62
Sex :	M
Physician :	M.C. ESCHER
Phone :	123-456-7000

🔍 Patient Inquiry   📄 Patient History

Obs Status :	NEW
Int Rpt :	NOT REQUIRED
Source :	ARM
Vitek :	NOT REQUIRED
Last Updated :	ESCHER - 2013-02-12 16:51:12

Observation | Comments | Activity | +

Observations and Results

SEQ		Note	User	Date	Time	Options
MICROSCOPY						
1	WBC	RARE	SMITH	2013-08-17	16:14	🔍 | ✏ | 🗑
CULTURE RESULTS						
1	MIXED BACTERIA	HEAVY		2013-08-13	15:01	🔍 | ✏ | 🗑
2	GRAM-POSITIVE C	OCCASIONAL		2013-08-13	15:03	🔍 | ✏ | 🗑
	Zone	11				🔍 | ✏ | 🗑
PUBLISHED COMMENTS						
1	SENSITIVITY TO		SMITH	2013-08-13	15:01	🔍 | ✏ | 🗑
2	FURTHER REPORT		ESCHER	2013-08-15	16:47	🔍 | ✏ | 🗑

🏠 Exit   ← Cancel   + Add   📄 Interim Report   — Default Neg Result   📄 Preview Result   ✔ Publish Results (FINAL)

API Service Exposure for Mobile Apps, Integration, Partners, etc.

Web Services (RESTful APIs)

Business Processes Services
(Business Rules)

Database Services

Tables, Index, Views, etc.

How to:

> Rapid API development products

> API enablement products

> Web server / router

> Programming

> Web development

How much:
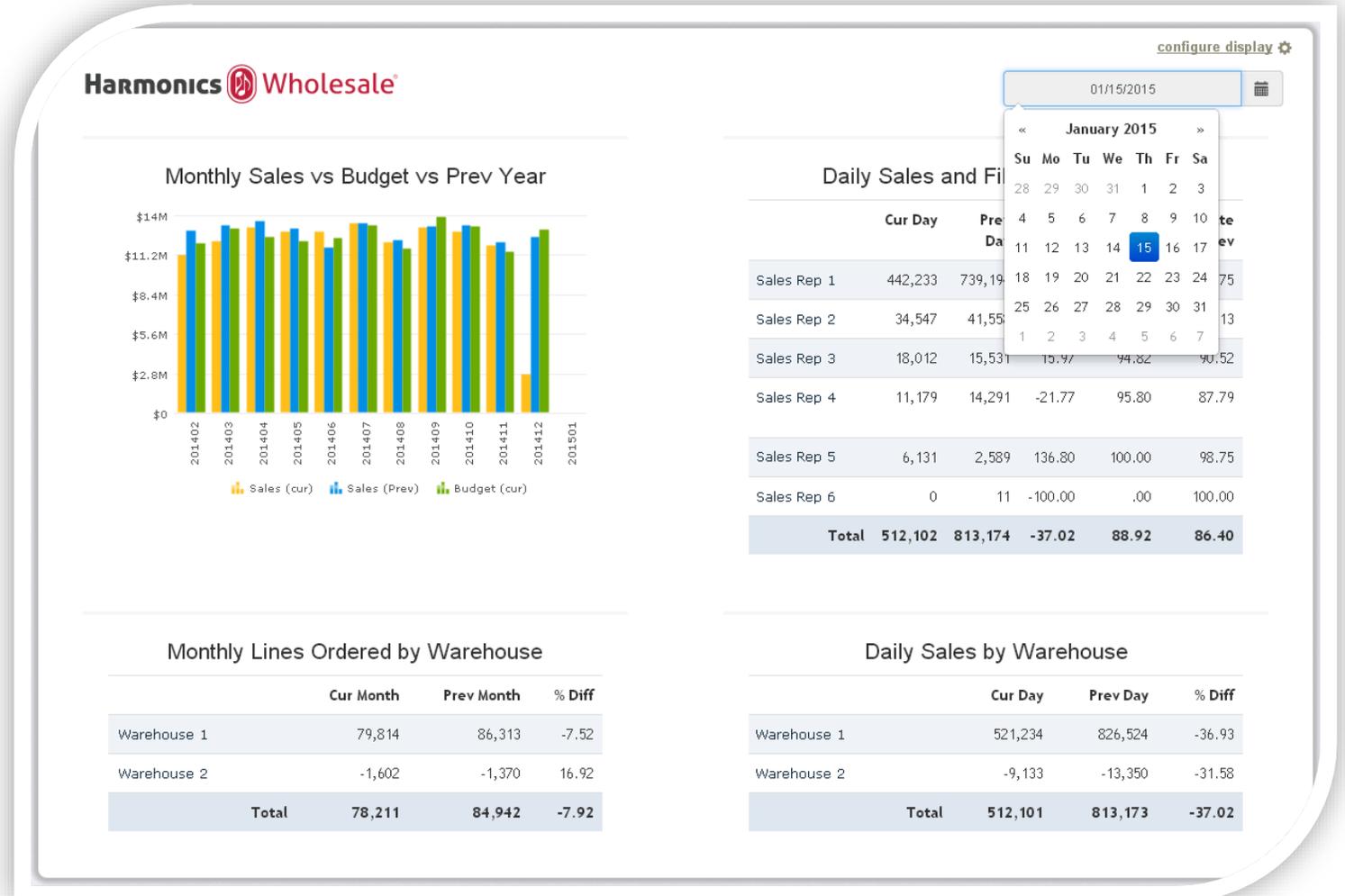
> Time: 2-6 months

> Cost: $50-200K
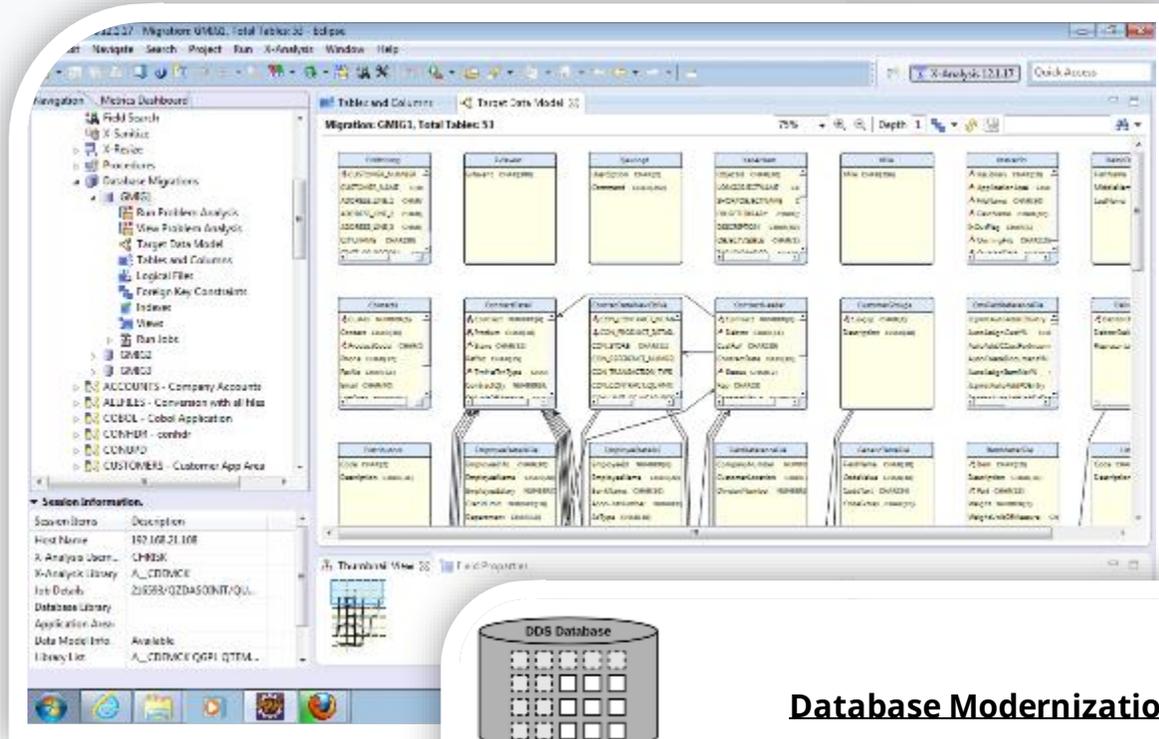
Self Service Reporting

How to:

> Database VIEWs

> DB modernisation (recommended)

> End-user reporting tool

> API enablement

How much:

> Time: 1-6 months
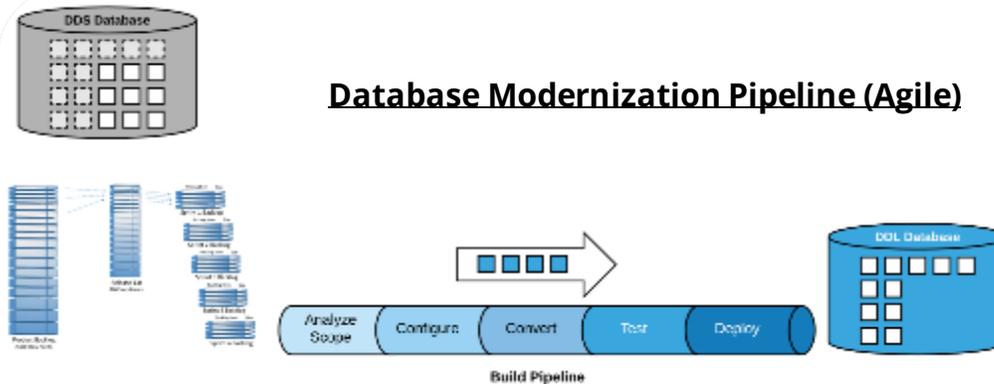
> Cost: $20-100K

Database Modernization

Database Modernization Pipeline (Agile)

How to:

› DB modernisation tool (commercial)

› Planning and staging process

How much:

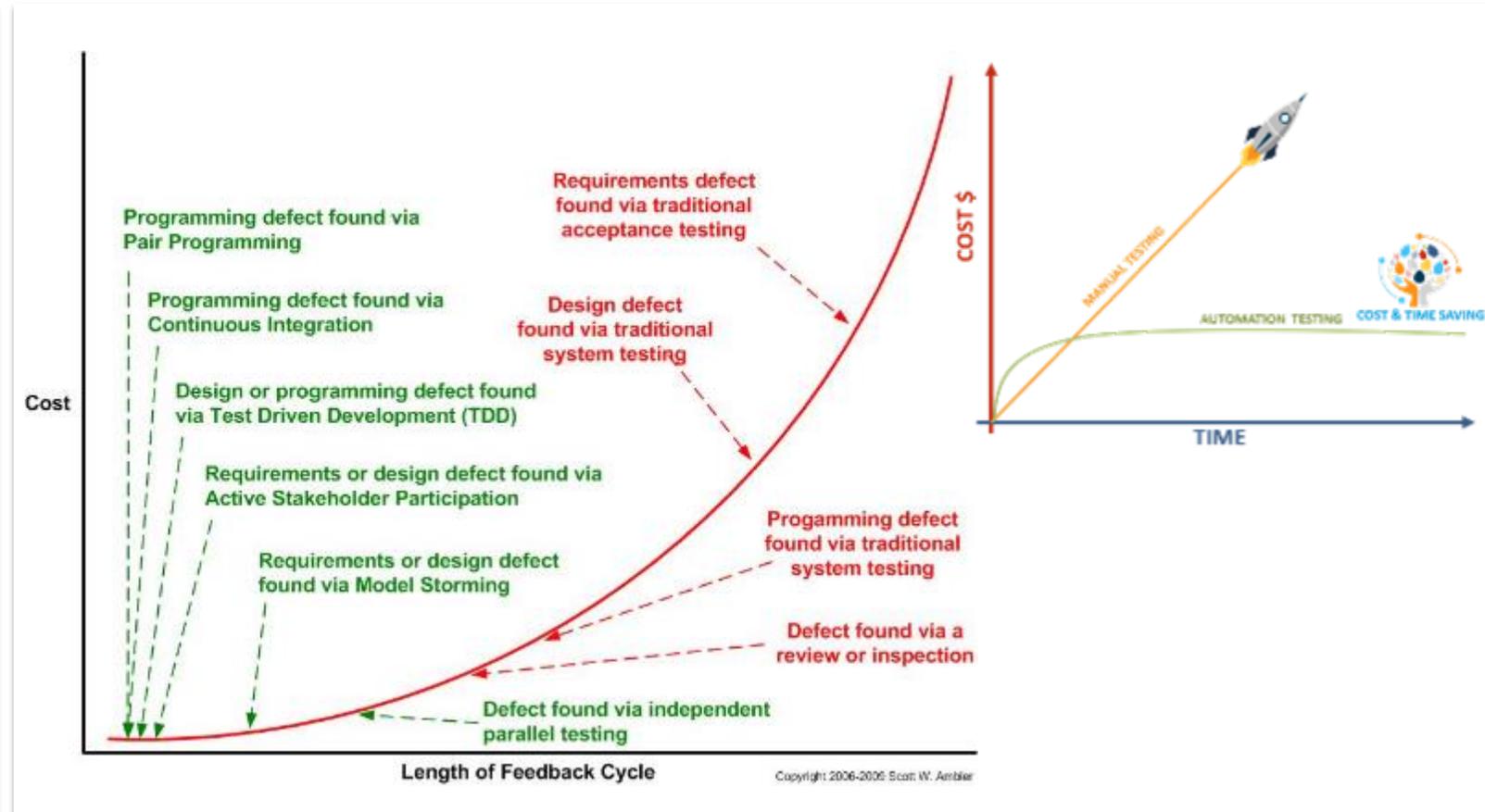› Time: 2-6 months

› Cost: $50-200K

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Test Automation – Starting with Quick Wins

How to:

> Test automation tools (commercial)

> Start with new development

> DevOps / CICD (recommended)

How much:

> Time: 3-12 months

> Cost: $50-200K

Programming defect found via Pair Programming

Programming defect found via Continuous Integration

Design or programming defect found via Test Driven Development (TDD)

Requirements or design defect found via Active Stakeholder Participation

Requirements or design defect found via Model Storming

Defect found via independent parallel testing

Requirements defect found via traditional acceptance testing

Design defect found via traditional system testing

Progamming defect found via traditional system testing

Defect found via a review or inspection

Cost

Length of Feedback Cycle

Copyright 2006-2006 Scott W. Ambler

COST $

MANUAL TESTING

AUTOMATION TESTING

COST & TIME SAVING

TIME

Closing Thoughts on Modernization Quick Wins

- What does the business get out of it?

- Whose life / work are you improving?

- Most impactful first

- Modernize lower layers as you go

- Embrace new approaches in how you work with the business (Enterprise Design Thinking, Agile, etc.)
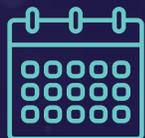
- Organise, measure, de-clutter, and share plans

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IT Strategy

❯ Current state assessment

❯ IT plan & roadmap

❯ Modernization strategy

Digital Solutions

❯ Custom application design & development

❯ API development & implementation

❯ Integration services for cloud-based environments & SaaS

Transformation & Modernization

❯ Green screen modernization

❯ Convert RPG & CA 2E (Synon) to Java

❯ Database modernization & re-architecting (resizing/replatforming)

Cloud (on prem/hybrid)

❯ Move applications and workloads into cloud

❯ Cloud hosting

❯ Setup cloud environments for development, testing, archive, backup and high availability

Managed Services

❯ Application Managed Services

❯ Infrastructure management

❯ HA/DR & backup solutions

❯ OS upgrades / SysAdmin Services

Compliance & Security

❯ Ransomware protection

❯ Exit point security

❯ SIEM integration & Encryption

Next Steps...

✓ Let us know in the exit survey if you'd like to schedule an IT strategy workshop with our experts.

✓ Explore ideas, discuss a project or validate your strategy with our modernization strategists.

Have a project in mind? Questions?

Let us know in the exit survey, or get in touch:
Chris.Koppe@freschesolutions.com
Info@freschesolutions.com