FRESCHE SOLUTIONS

The MODERN Way to Modernize IBM i:

As a Service. On Your Terms.

Part 2: Modernize Your Database

April 10, 2025

Today’s Speakers

Chris Koppe

SVP, Strategic Transformation
Fresche Solutions

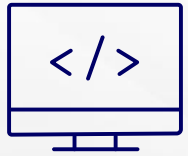
36 years at Fresche

Robert Arce

VP, Solution Strategist
Fresche Solutions

30+ years IBM i

Welcome to the 3-Part Modernization As a Service Series



Transform Your Code

Thursday March 27

11am PT / 2PM ET

Modernize Your Database

Thursday April 10

11am PT / 2PM ET

Reimagine Your UI

Thursday April 24

11am PT / 2PM ET

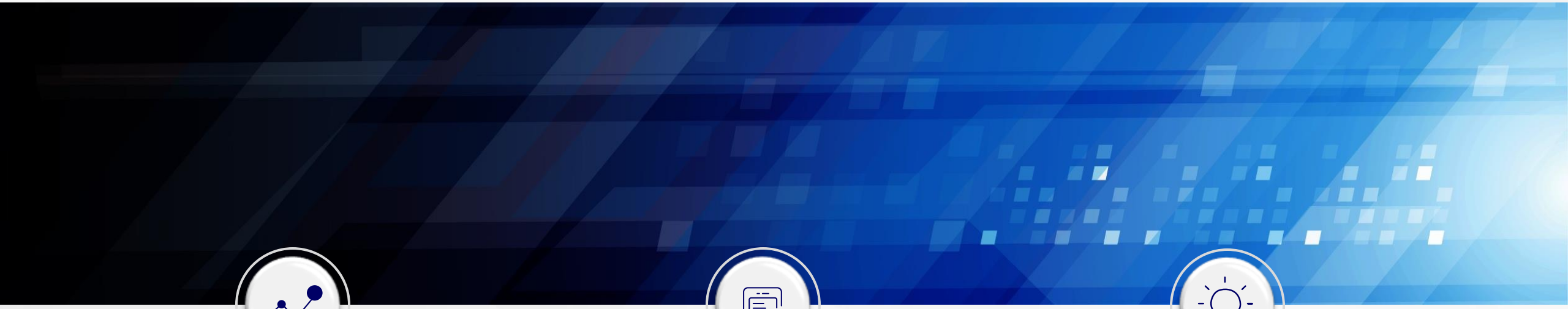
Agenda

- The Modern Way: Modernization as a Service
- Database Modernization
- Client Journey Examples
- Wrap-up

The Modern Way:

Modernization as a Service

Modernization Approaches: What’s Changed

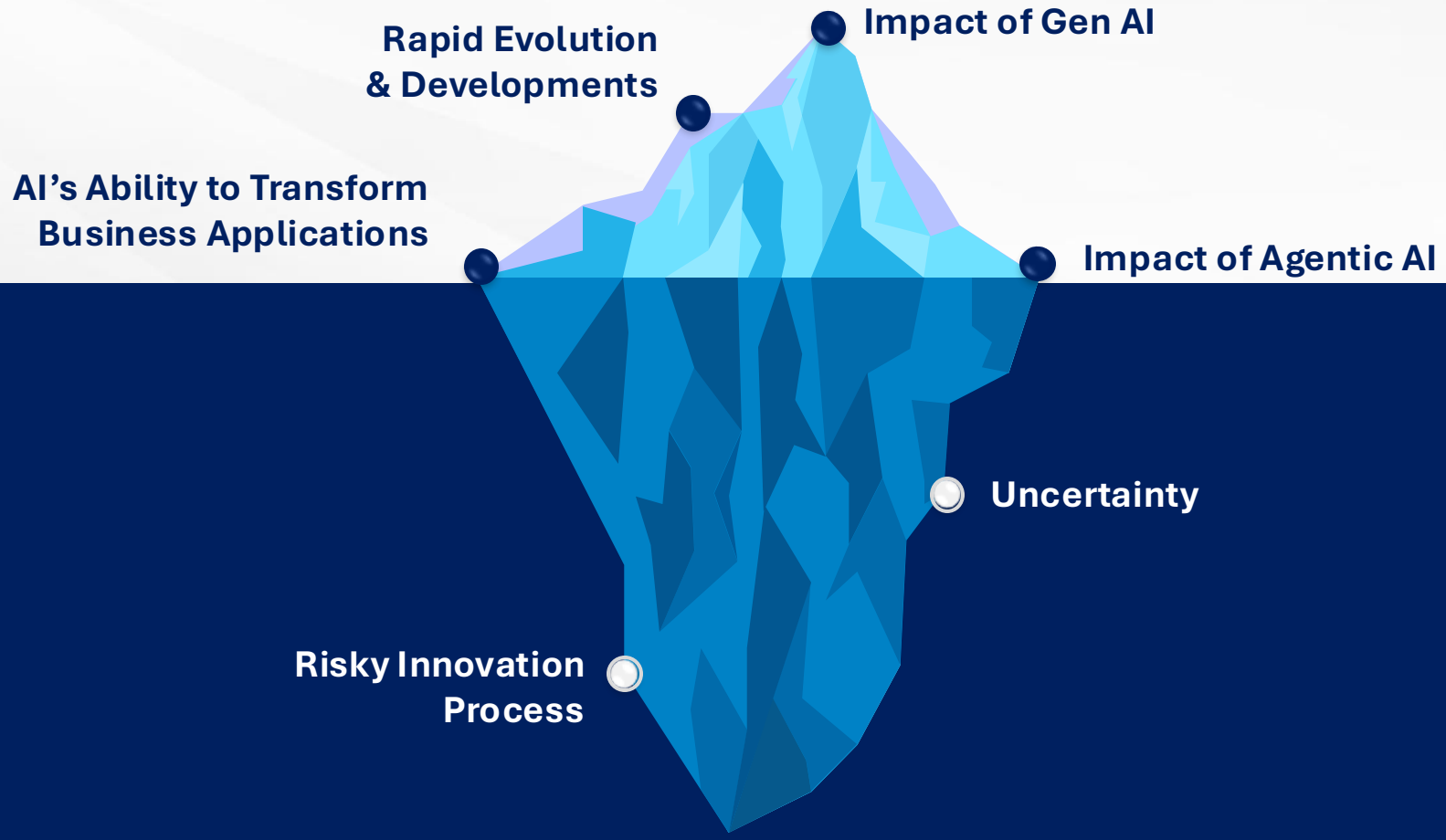


Evolution in business approach to IT projects

No appetite for large projects

More reimagine

Impact of AI



What is Modernization As a Service

- UI Modernization
- Reimagine Applications
- Application Transformation
- Database Transformation

Subscription Model

Scale up or down

Outcome Driven Results

Value-based Milestones

AI-Accelerated

Tools and Processes

IBM i Application Modernization as a Service

Database Modernization

Fresche Transformation Factory

Discovery

Presto™ Web UI

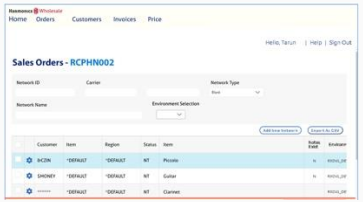
Screens

RPG / COBOL / Synon / CL

Database Metadata

X-Modernize

Intelligent Automated Code Transformation



Java or PHP
React
Angular

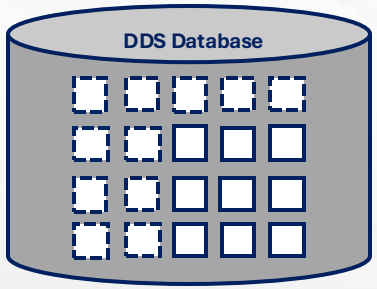
Testing

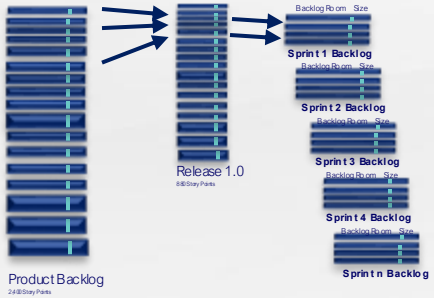
Coexistence Fabric
Incremental Delivery

Future End State

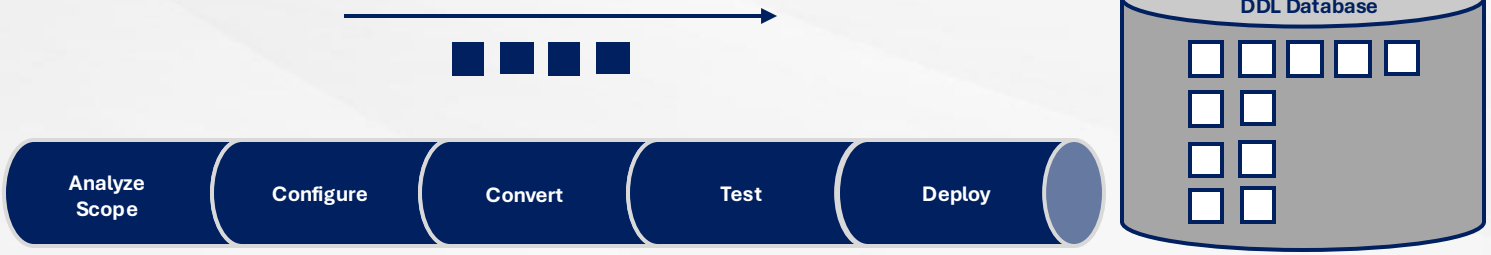
- Cloud Ready
- Portable
- Analytics/BI
- Business Process Innovation
- AI Readiness

Database Modernization





Database Modernization Pipeline (Agile)



Build Pipeline

X-DB Transform

Typical Desired Transformation Improvements

Columns and Storage Types

- Adding Long Names
- Get rid of future use fields
- Redefining repurposed fields to their correct name and storage format
- Implement DATE, TIME, and DATETIME types wherever appropriate
- CHAR to VARCHAR or NVARCHAR
- Add column-level data constraints (birth – death, start – expiry, etc.)

Keys, Indexes, and Referential Constraints

- Adding Foreign Key constraints
- Replacing natural keys as primaries with surrogate keys (maintained by database)
- Defining Unique constraints.

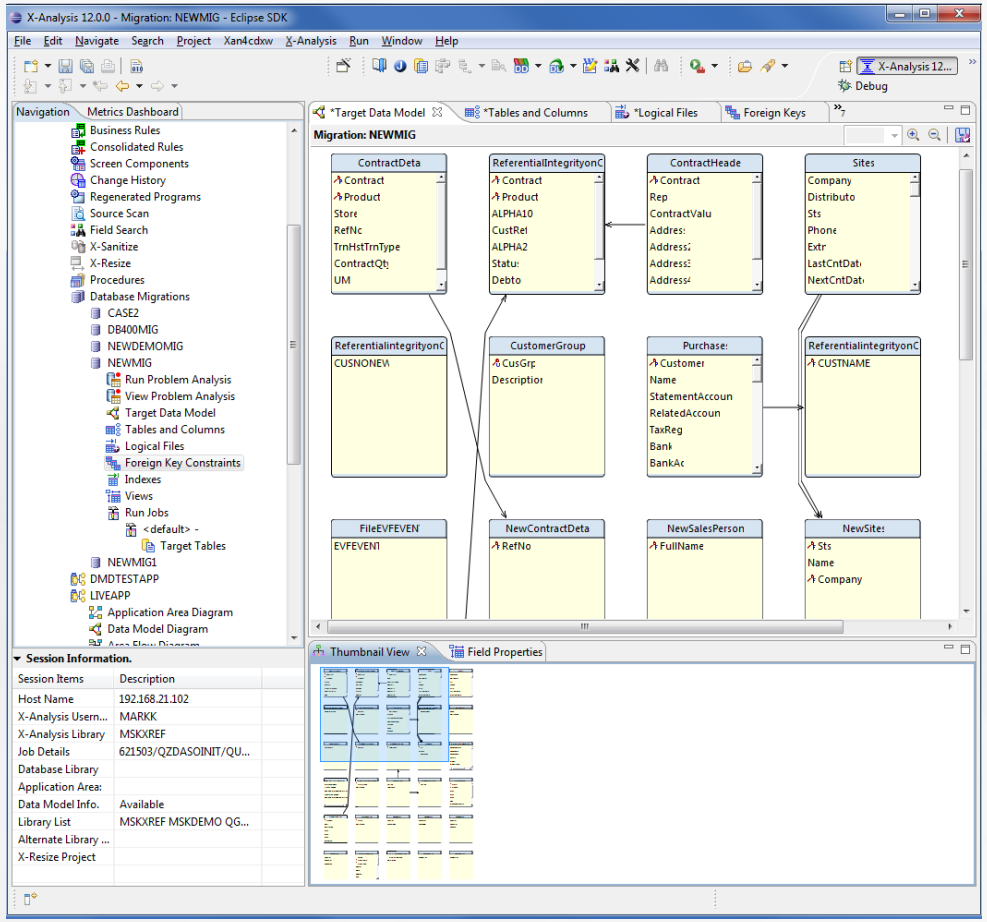
Database Structural Enhancements

- Validate, clean-up and optimize views
- Improve database normalization*

Data Cleansing

- Resolving orphaned records
- Proper use of NULLs

X-DB Transform



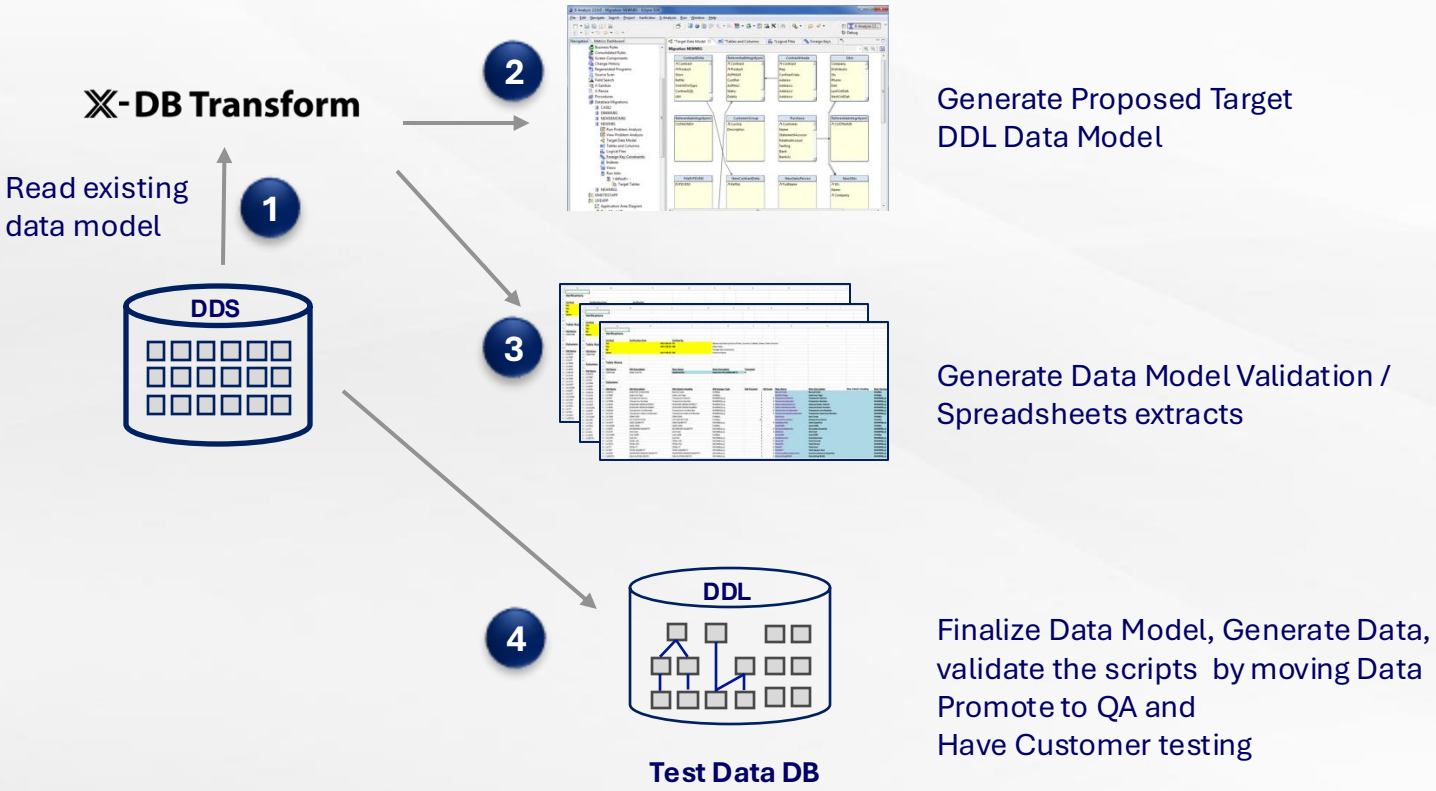
Purpose-built for IBM i Modernization

Key Features:

- Remodel, Transform, and Modernize your DB.
- Supports multiple use case scenarios: archiving, modernization overhauls, IBM i DDL upgrades, etc.
- Harvest the existing data model and structurally redesign it.
- Upfront Problem Analysis for better planning
- Powerful rules-based search and replace engine enables sophisticated reusable changes.
- Remodel foreign keys, views, indexes, LFs, etc.
- Normalize and improve your database design
- Data quality and integrity verification
- Tracks and exposes source to target mappings
- Manage hundreds of parallel DB migrations

Overall DB Modernization Workflow

Test Data DB Modernization

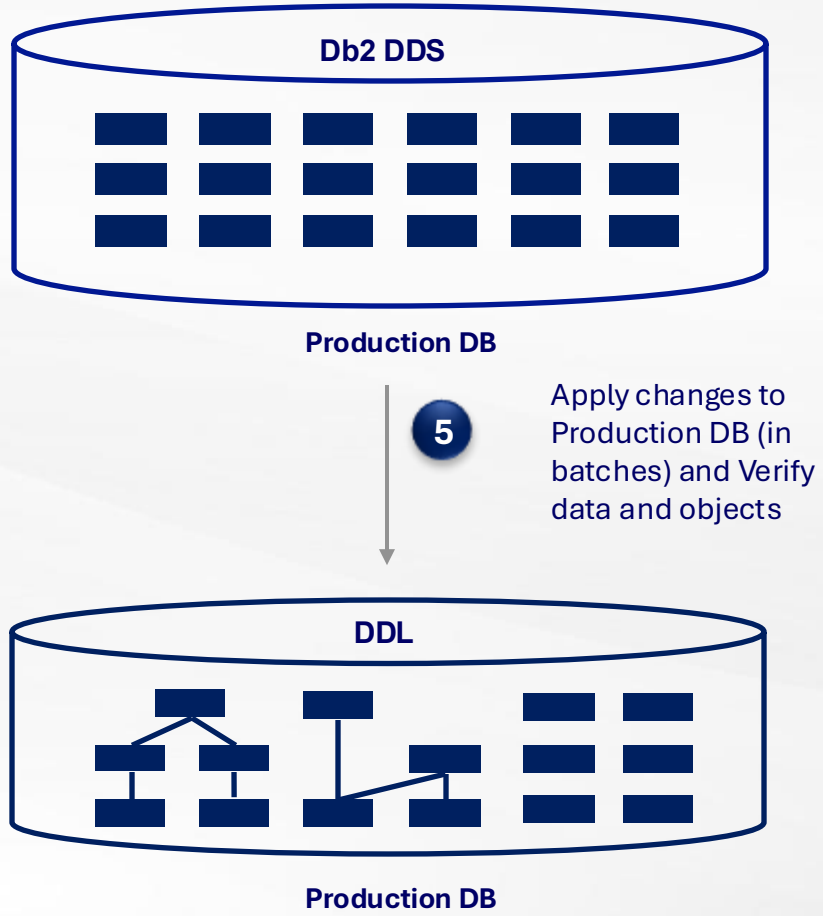


Generate Proposed Target DDL Data Model

Generate Data Model Validation / Spreadsheets extracts

Finalize Data Model, Generate Data, validate the scripts by moving Data Promote to QA and Have Customer testing

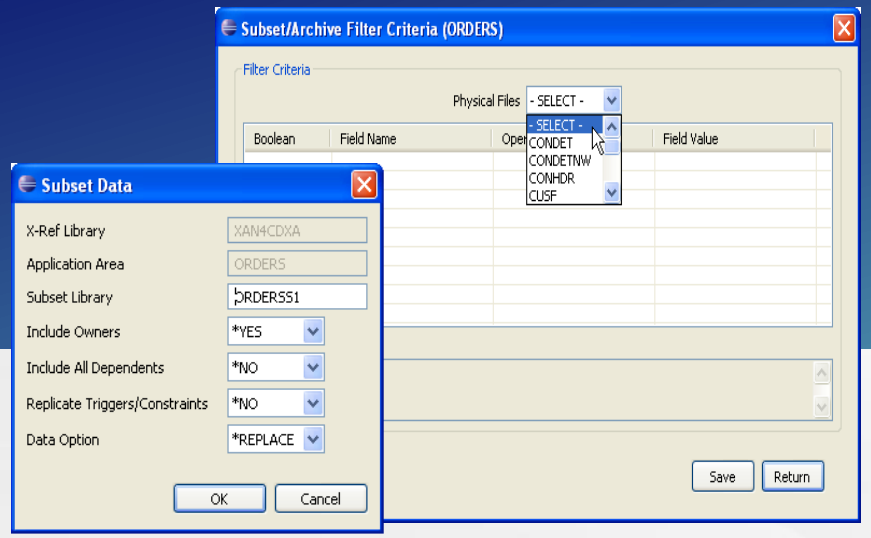
Production DB Modernization



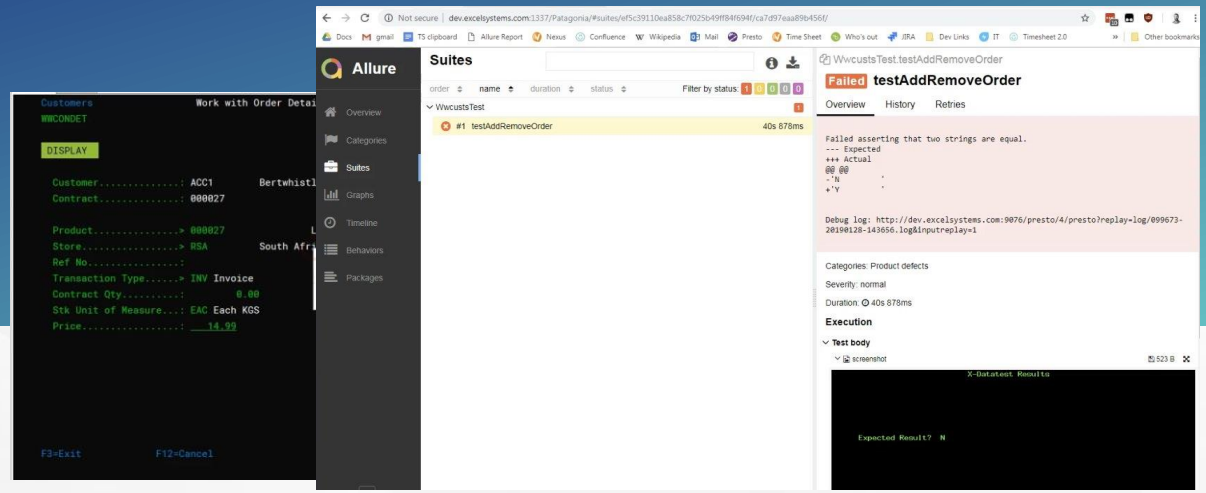
Apply changes to Production DB (in batches) and Verify data and objects

End-to-End Testing Framework

Guaranteed test validation in UI, DB & test coverage, Record in Green Screen, Transform to Cypress



Data Comparison Test Automation



User Interface Test Automation

Manual Conversion DDS to DDL

Activity	Count	Minutes	Hours
Generate Long Names for Files	3,365	5	280
Generate Long Names for Fields	12,430	1	207
Generate DDL from DDS code	3,365	15	841
Change DDL code to add long names	12,430	3	622
PF38 tables	46	15	12
LF38	133	5	11
Adding ID to flat files	468	15	117
Finding and Creating constraint to add referential integrity	2,486	60	2,486
Create Indexes to replace LF	1,676	15	419
Create Views to replace LF	1,048	15	262
DDL backward compatibility issues (119h)	119	60	119
Naming collisions for long names	790	5	66
Phase approach (10)	10	2,400	400
Total Hours			**5,842**

Resources: 2
Productivity: 80%
Person Years: 1.95

1 year with 2 resources
(or 6 months with 4 resources)

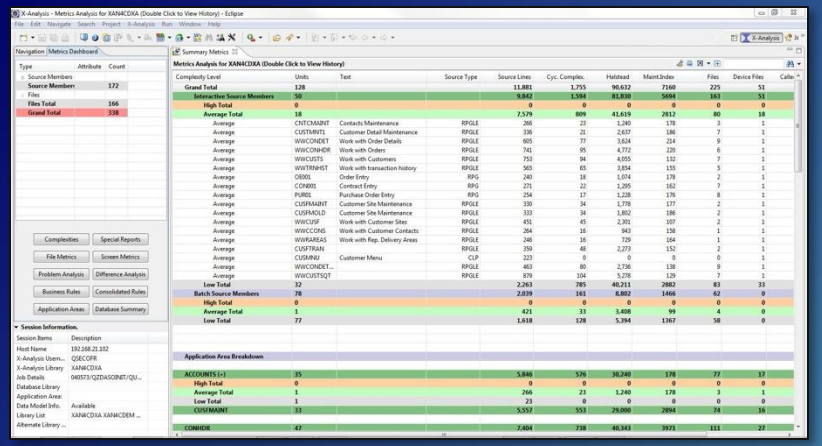
Conversion DDS to DDL Project Cost Breakdown

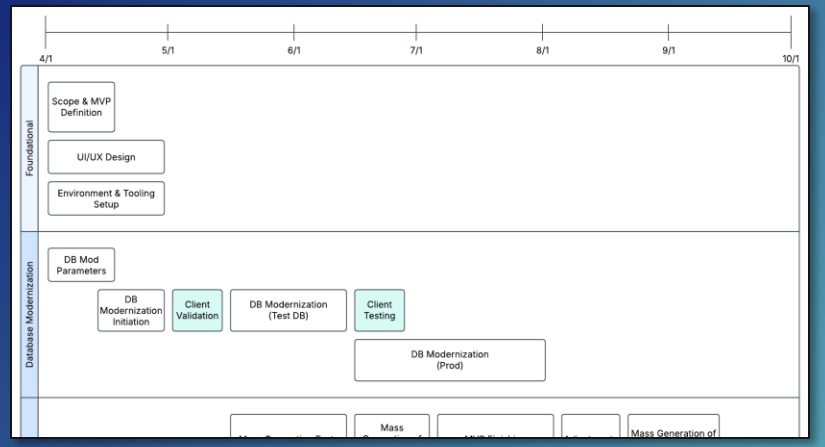
Project Components	Hours
Start-up & Planning (including architects & infrastructure)	46
Database Conversion	473
Validating and Fine Tuning (Fresche)	45
DDL backward compatibility (DB legacy constructs)	119
DB Architect Project Leader (5 hours per week)	90
Project Management	90
Services Total	863
Grand Total	**1,726**

Duration: 5 months (18 weeks)

Resources:
- 1 DB Architect
- 1/8 DB Arch. Project Leader
- 1/4 PM

Discovery Up Front



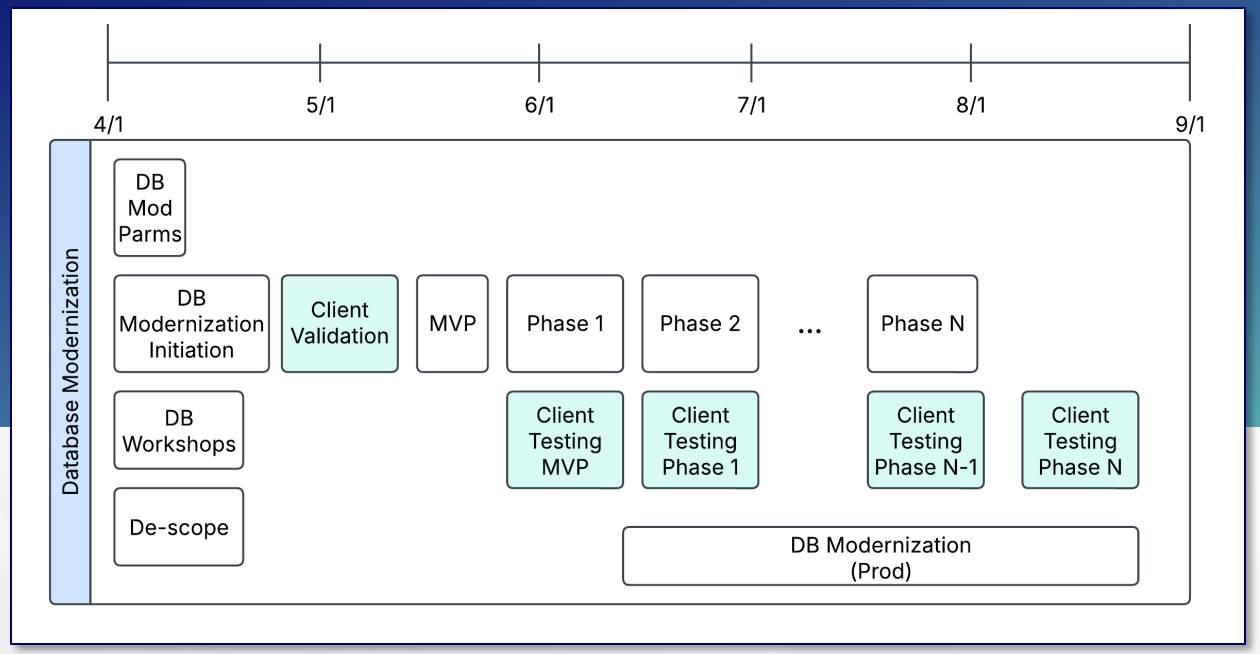


- Scope Analysis (Actively Used / In Scope, 1st Slice)
- Milestones and Definition of Success
- Constraints
- Make a Plan

Client Journey

Examples

MaaS Example: DB Modernization - DDS to DDL



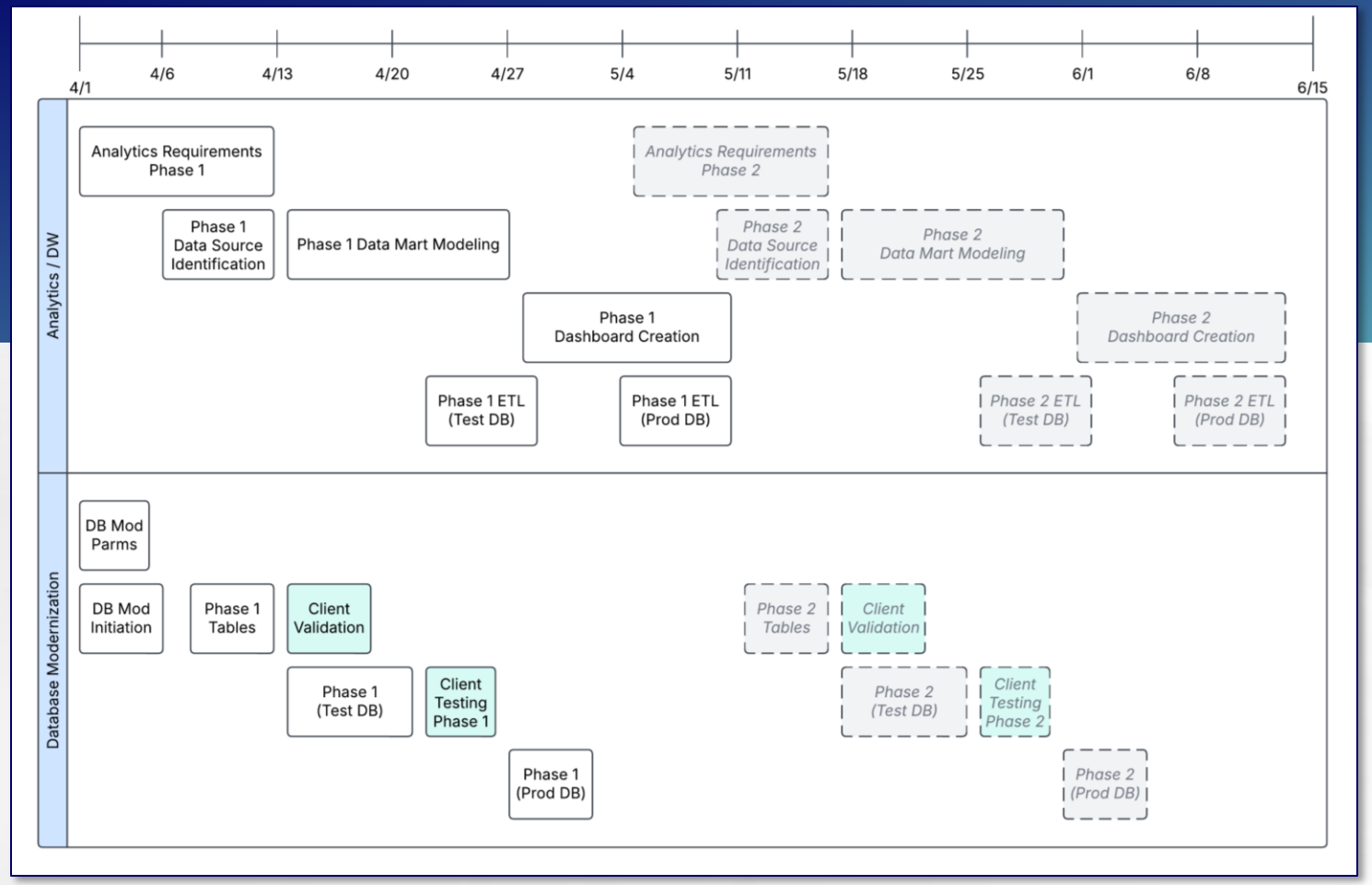
Deliver a DB Modernization - DDS to DDL conversion

- Add long names to tables and columns preserving short names
- Add constraints to implement referential integrity at the DB level
- Pre-Analysis identifying legacy objects needed to minimize changes
- Implement incrementally

Major Milestones	Month
Workshops, Plan and Initialization	1
MVP Ready for Testing	2
Phase 1 & 2 Ready for Testing	3
Testing and Deployment of Phase 1 & 2	4
Testing and Deployment of Phase N	5-6
Deploy to Production by Phase	3-6

MaaS Monthly Cost: $19,000

MaaS Example: Just-In-Time Modernization for Analytics



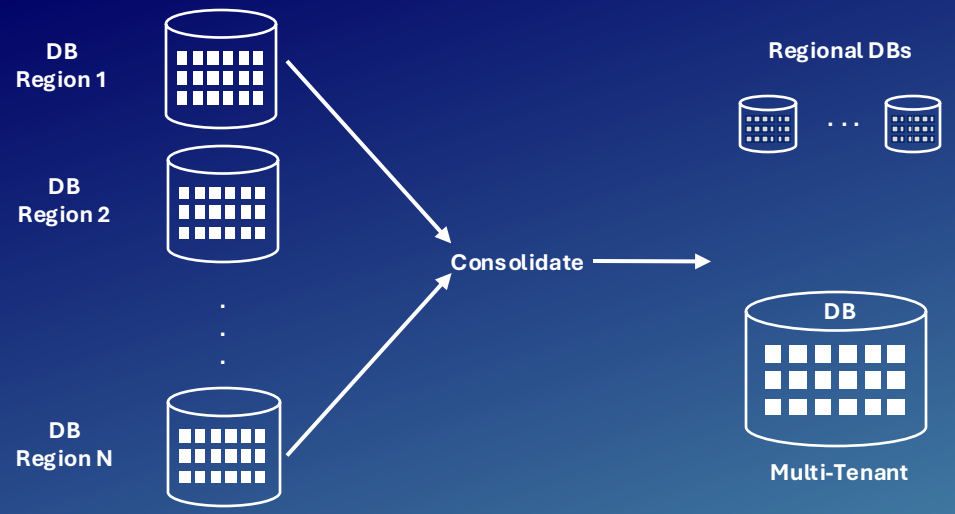
DB Modernization – Just-In-Time for Analytics

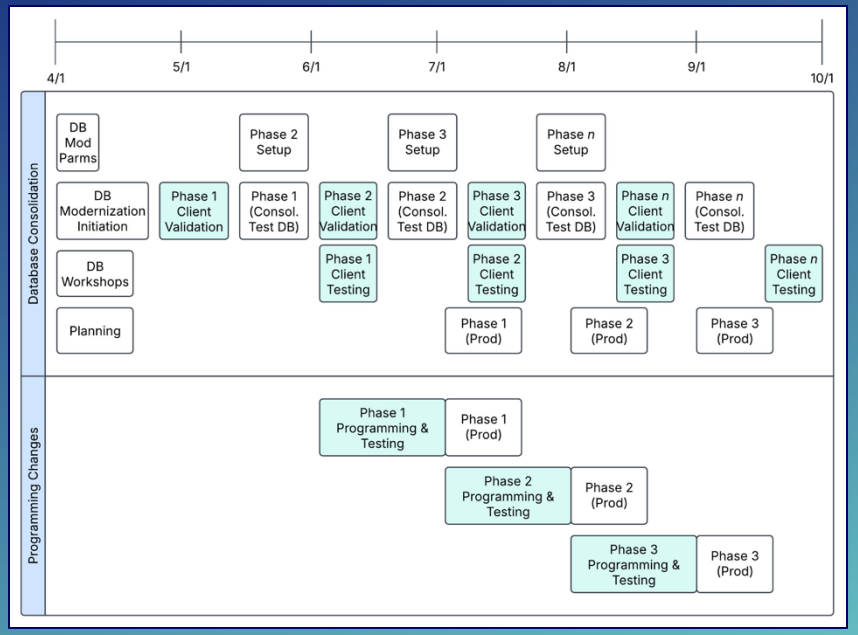
- Analytics Dashboard defines Data Warehouse and data source requirements
- Modernize tables with long names to files & fields
- Referential integrity for data model navigation
- Add date fields, audit field, etc.
- Implement incrementally (E.g. Customers, sales, financial, inventory, etc.)

Major Milestones	Month
Workshops and Phase 1 (MVP)	1
Phase 1 Deployed	2
Phase 2 Modernized & Tested	2
Phase 2 Deployed	3

MaaS Monthly Cost: $12,500

MaaS Example: DB Consolidation for Multi-Tenant





Deliver DB Modernization – DB Consolidation for Multi-Tenant

- Years of growth through acquisition, challenged with many company DBs
- Multiple sets of Databases (per library) – representing regions or countries
- Identify tables that should be kept global vs. need to become multi-tenant
- Define program changes required
- Modernize tables and implement multi-tenant DB.
- Modify affected programs and test.

Major Milestones	Month
Workshops and Phase 1 Designed	1
Phase 1 Test DB	2
Phase 1 Deployed	4
Phase 2 Test DB	3
Phase 2 Deployed	5

MaaS Monthly Cost: $21,000

FRESCHE SOLUTIONS

webinar series

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Code
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Database
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UI
April 24 | 11am PT / 2pm ET

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