



ENTERPRISE APPLICATION ARCHITECTURE & LEGACY MODERNIZATION

Helping a growing mid-sized real estate data and payment processing fully document and strategically plan their legacy modernization.

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The client

The organization

A growing, mid-size company in the real estate services space.

The technology footprint

The client, being one of the largest tax processors, had a vast history of mainframe-based technology at play. Their footprint was a complex collection of interconnected systems that required detailed and intricate integrations. These integrations required special attention, and many of them were candidates for improvement, renewal, or replacement. Layered among these existing systems were also modern web services and modern web applications that provided end-users with a top-tier experience. Many database, technologies were being leveraged, including Oracle, SQL, server, access, and other databases. The Mainframe system leverage COBOL and natural languages, along with third-party products for integration purposes. The web-based applications run ASP.net and C#, as well as many JavaScript front end libraries

The ask

Initially, the ask of the Product Perfect consulting team was to assess the enterprise technology footprint, and provide meaningful insights and key recommendations for C-level executives to consider as they look to the future. The engagement was initiated by the Chief Technology Officer, at the oversight and endorsement of the Chairman of the Board. Product Perfect Sr. Consultant, Shawn Livermore, led the engagement, and provided updates and collaborative sessions with the executive team, (directly and indirectly), throughout the multi-year engagement. This case study outlines the effort involved in this specific **enterprise application assessment engagement**.

Once the initial assessment was completed, the client engaged Product Perfect on additional projects that continued their journey forward toward their long-term objectives of meaningful enterprise application consolidation and modernization.

As a strategic partner, Product Perfect engaged with the client for three and a half consecutive years, providing a multitude of value-added technology consultative services from over 25 different professional resources.

Areas of tangible deliverables and strategic focus included:

- General business process analysis
- Code reviews and analysis for assembling multiple optional paths forward
- Enterprise software applications inventory and integration assessment
- Robotic process automation analysis, development, deployment and support
- Software user experience facelift on the existing flagship product of the organization
- Desktop application migration to the web, as a new flagship product of the organization
- Software product design
- Software solution architecture
- Software development
- AzureSQL database scalability assessment work
- Code analysis and code improvement
- Remote development team mentoring and oversight
- Ongoing collaboration with business and operational stakeholders
- Analysis of internal complex business processes
- Analysis of payment processing and transactional logic/systems
- Stakeholder and leadership presentational documents and slide decks

The team

Led by senior software solutions architects, the team included analysts and designers, as well as a team of remote developers not listed here.



Shawn Livermore
Sr. Solution Architect



Amber Killinger
Sr. Systems Analyst

Projects overview

Specific projects performed for the client, in order, are listed below.

User interface refresh

An 18-month, 20-person team, comprised of designers, developers, and architects, reworking and refreshing the top layer of a 750-page flagship web application, without disrupting or redeveloping the underlying logic.

Applications redevelopment

A 13-month, 22-person team, comprised of designers, developers, analysts, and architects, migrated, converted, and cloud-enabled 2 flagship desktop applications into a single (modern) web application.

Enterprise architecture

Enterprise architecture analysis was performed, conducting over 40 individual interviews with key personnel. Applications, servers, databases, and code was analyzed. Team provided detailed, wall-sized diagrams of the application topology and technology footprint.

The focus of this document

Process automation with RPA

A senior RPA consultant worked closely with the business and operations groups to systematically automate a series of RPA targets over 9 months. Bots were deployed using *KofaxRPA* and supported in production.

Dev lead staff augmentation

Sr consultants involved in the applications redevelopment project were kept on the team, as ongoing, functional development leads. They oversee and refine the work of other developers, and help to support applications in production.

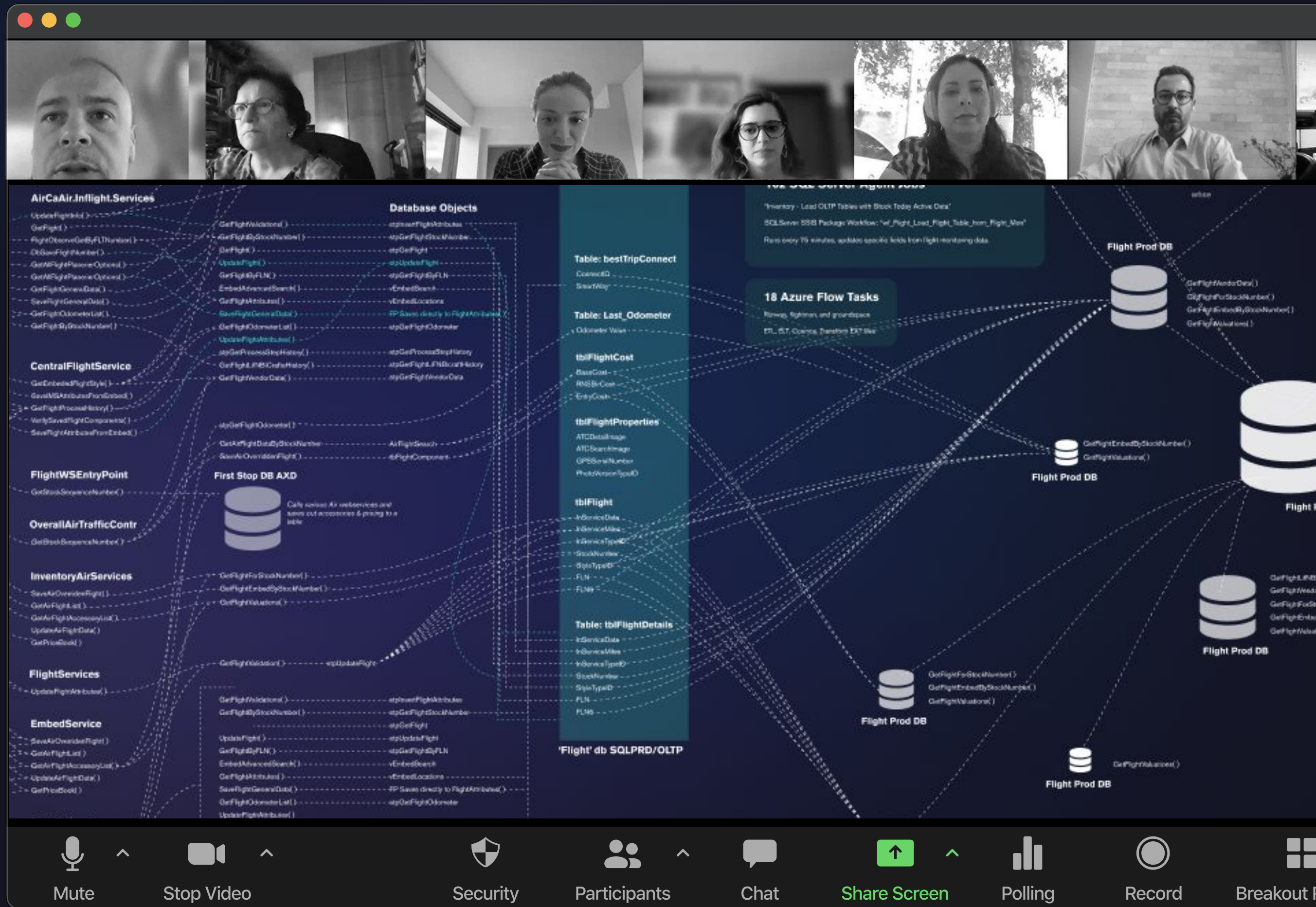
At the time of this writing, Product Perfect continues to work with the client toward ongoing objectives.

This specific case study document focuses on the **enterprise architecture assessment** work and the various comprehensive diagrams that were delivered as an output of that engagement.

Project 1: Enterprise architecture assessment

Interview sessions with key stakeholders

As a part of the early enterprise architectural topology assessment, over 40 interviews were conducted with key leaders, technology architects, software developers, business analysts, and database engineers. These interviews provided meaningful insights into the existing systems, applications, data, and infrastructure of the technology footprint.



The 4-5 months analysis period resulted in the development of significant architectural diagrams, some of which were wall-sized and required the use of industrial plotter printers. These artifacts were able to demonstrate in unambiguous terms the integration opportunities, challenges, and facets of the architecture of the organization for executive stakeholders to consider.

Diagram and documentation deliverables overview

Diagrams and deliverables created for the client include:

- Enterprise application topology diagrams
- Data flow diagrams
- Webservice integration diagrams
- Project plans and timelines
- Dependency diagrams



Diagram and documentation deliverables (cont.)

Enterprise application topology diagram

An enterprise application architect and consultant created and refined for the client a large, wall-sized enterprise application topology diagram, much like the one shown below. All apps, databases, systems, and server footprints in the entire organization or division. Deliverables like these one are often wall-sized, comprehensive, and provide meaningful outcomes for planning and budgeting.

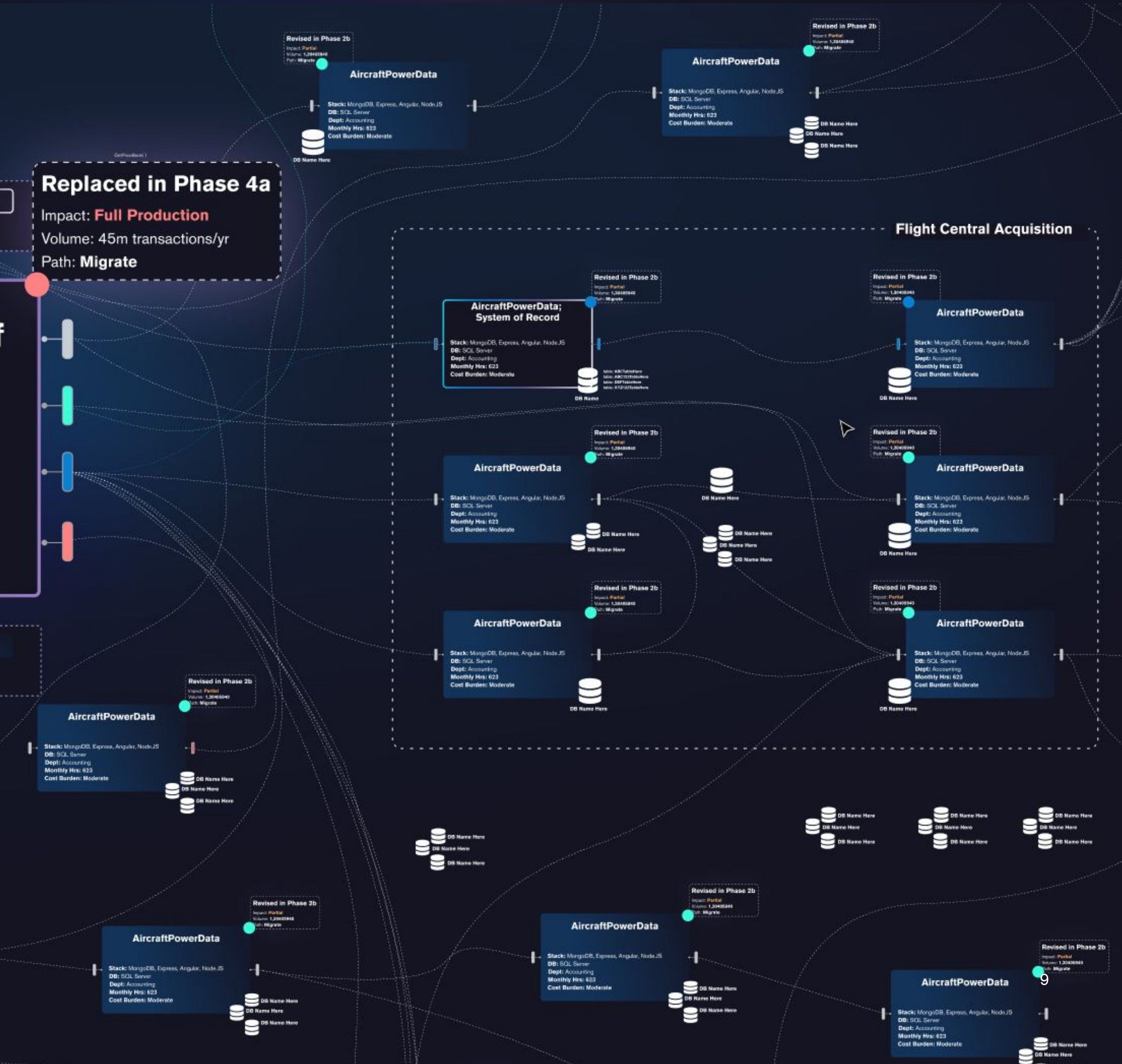


Diagram and documentation deliverables (cont.)

As-is logical application footprint diagram

A consultant created and refined with the help of analysts on the team, an “as-is” application footprint diagram, much like the one shown below. Typically the as-is diagram will showcase the entire suite of applications across the enterprise, color-coded and clustered into dimensions, depending on the nature and needs of the client. Hexagonal is just one of many types of visual approaches to these types of diagrams.



Diagram and documentation deliverables (cont.)

Data flow diagrams

An enterprise application architect and supportive team created and refined for the client a large, wall-sized data flow diagram. These extensive and intricate diagrams showcase the comprehensive flow of data, typically from left to right, through all primary systems, apps, and databases in the enterprise. It's common to also break these up by department, division, business vertical, or even application group. Some clients have asked to partition data lakes, data warehouses, and databases into separate swimlanes or diagrams altogether.

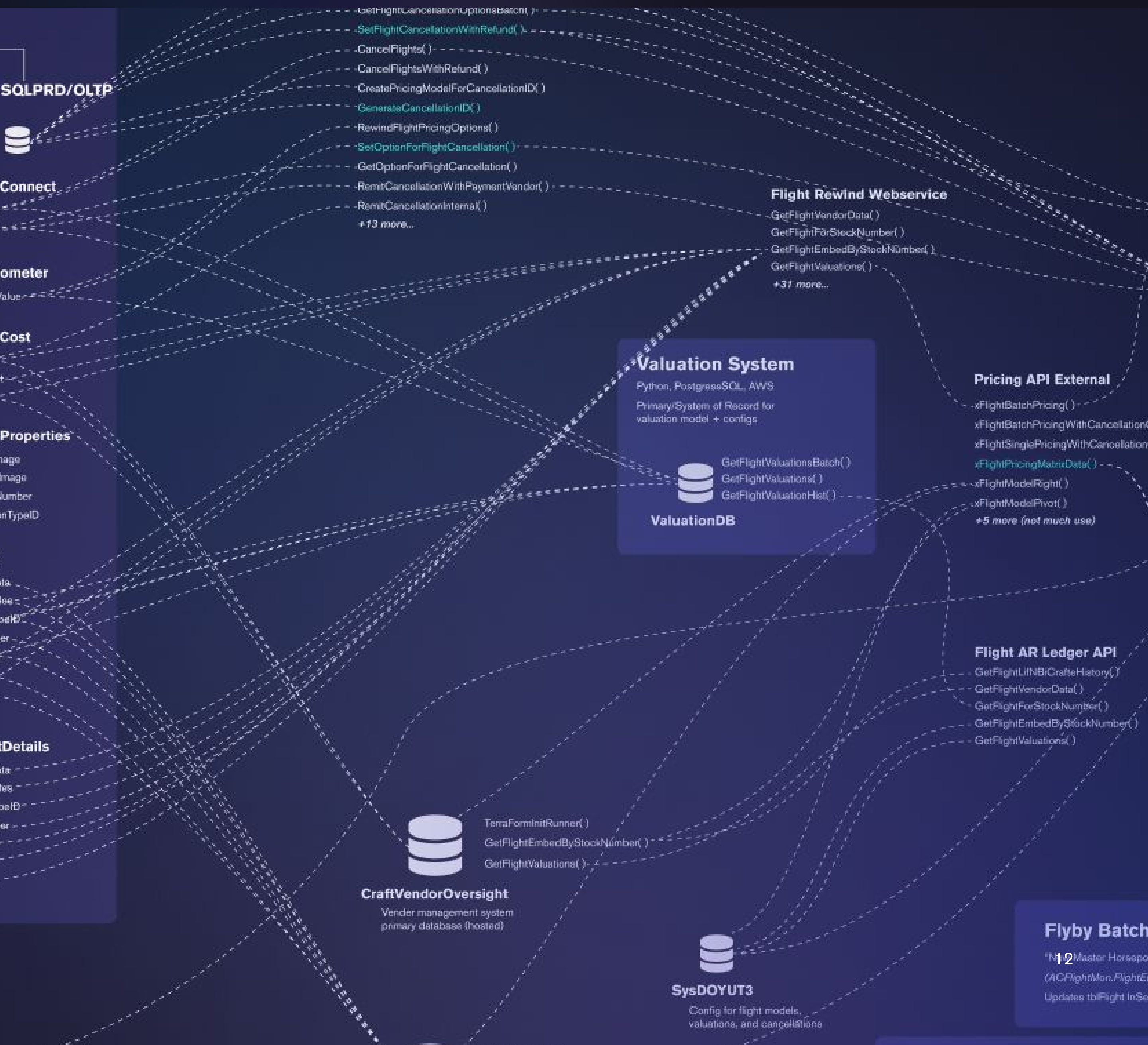
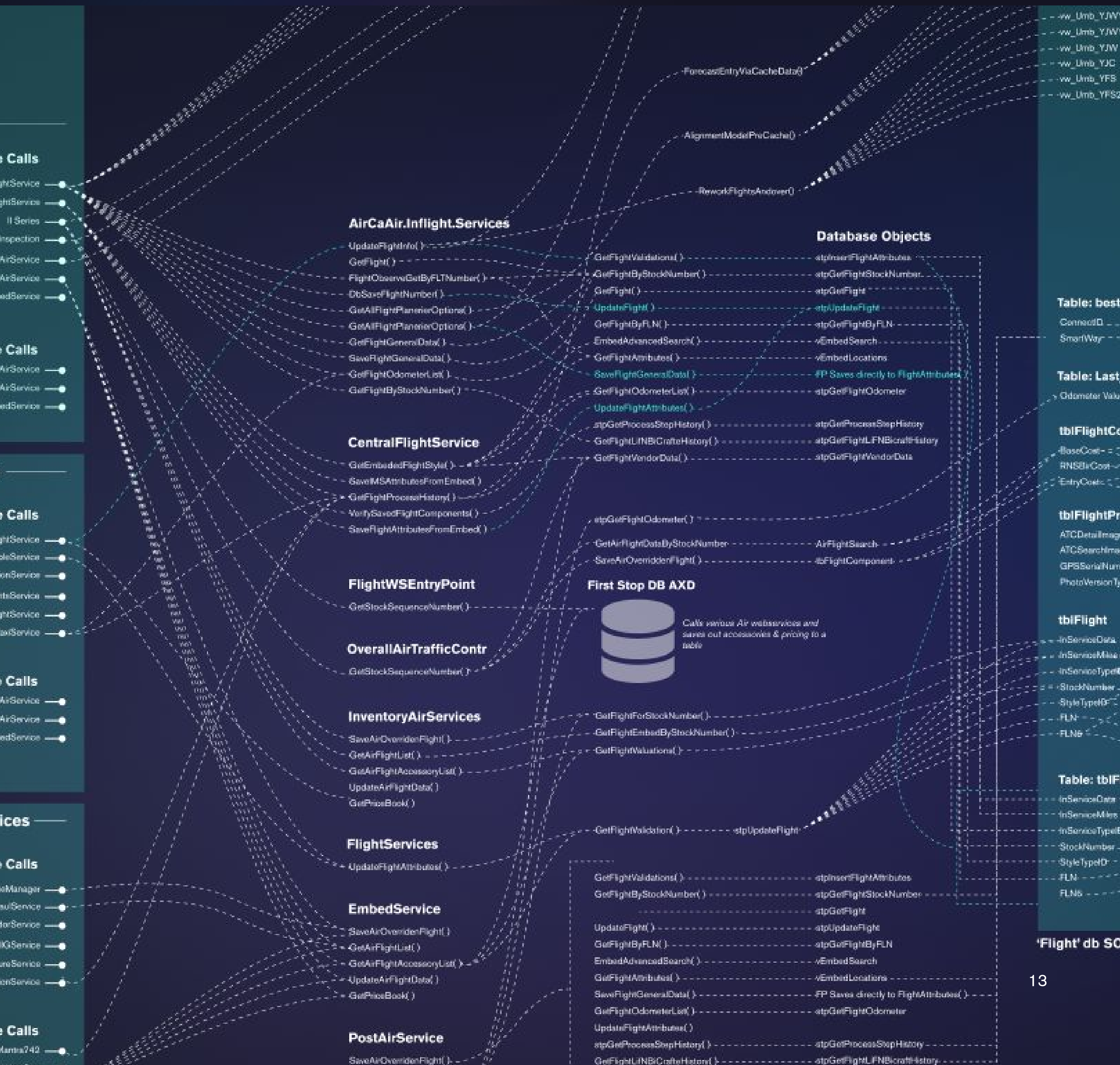


Diagram and documentation deliverables (cont.)

Webservices integration diagram

As a part of other diagramming efforts, the team also provided webservice integration diagrams, much like the one shown below. These showcase how and where webservices are called, from top layers, through to all subsequent layers and databases. The unearthing of obscured underlying data sources and subsystems traverses apps and databases throughout the enterprise footprint.



Highlights & testimonials

As a direct result of Product Perfect's involvement, focusing in on this first enterprise application assessment engagement, the client was able to:

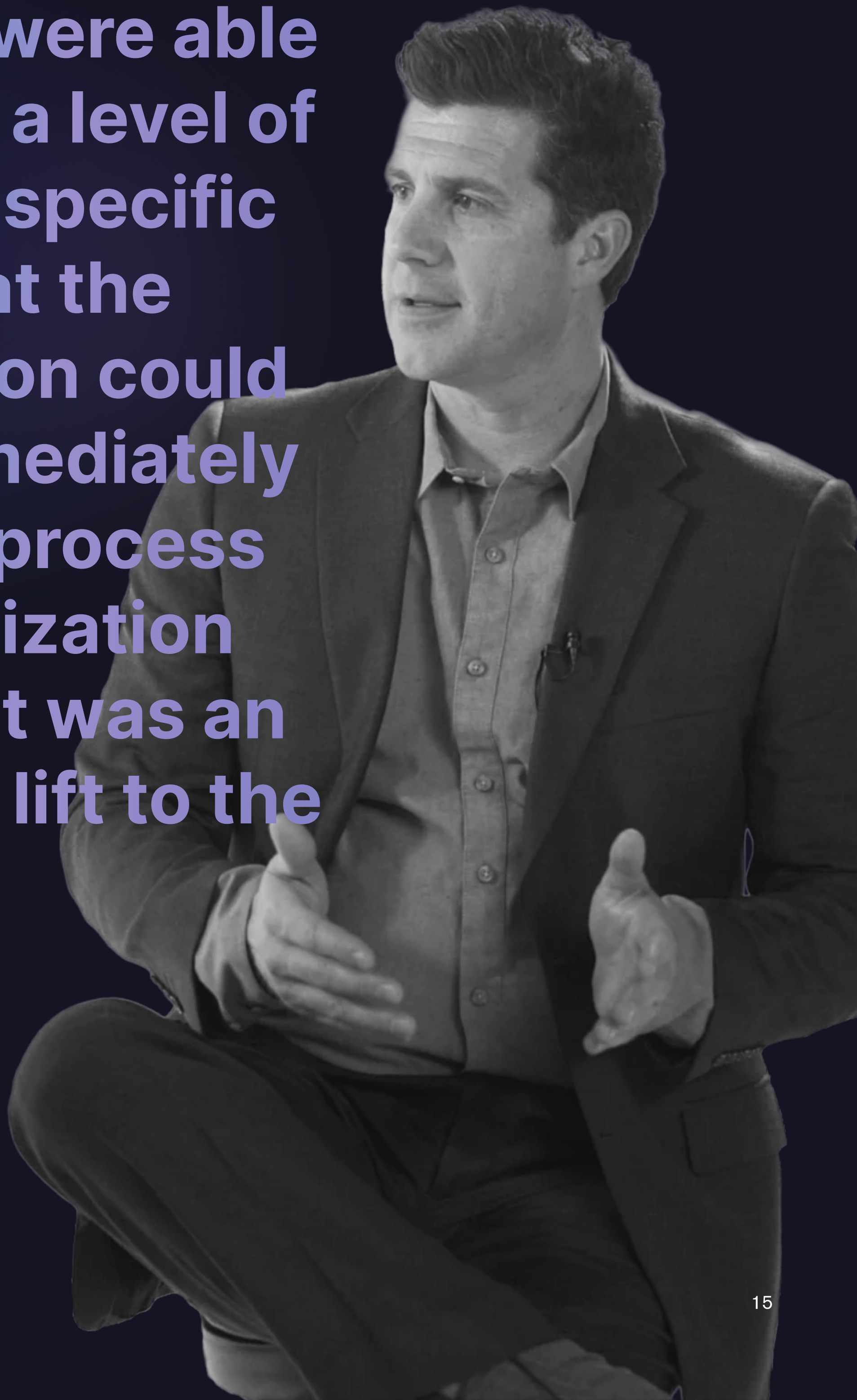
- Ascertain a more complete, robust view of infrastructure, databases, applications, webservices, and integrations within its own environment, as well as integrations with external vendors and partners.
- Plan, budget, forecast, and reconcile a multi-year systems modernization project.
- Solicit involvement and support from key stakeholders within the organization, as well as board representation.
- Organize a multi-layered effort toward the migration itself, with a far better handle on the scope of work involved, and the nature of the technical complexities.

“Our wall-sized diagrams were able to provide a level of detail and specific insight that the organization could use to immediately begin the process of modernization planning. It was an enormous lift to the process.”

Shawn Livermore

Sr. Consultant

Product Perfect



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