

innovation



Oracle Global Leaders Virtual Event

Oracle Autonomous Database

September 2, 2020

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Our Heritage

Seventh-day Adventist heritage dates back to May 1866, when the first Adventist health care facility opened in Battle Creek, Michigan. In [June 1878](#), St. Helena Sanitarium (now Adventist Health St. Helena), opened its doors in California. For over 140 years, we have been providing compassionate care to communities in the western United States.



The Communities we serve

Mission:
Living God's love by
 inspiring health,
 wholeness and hope

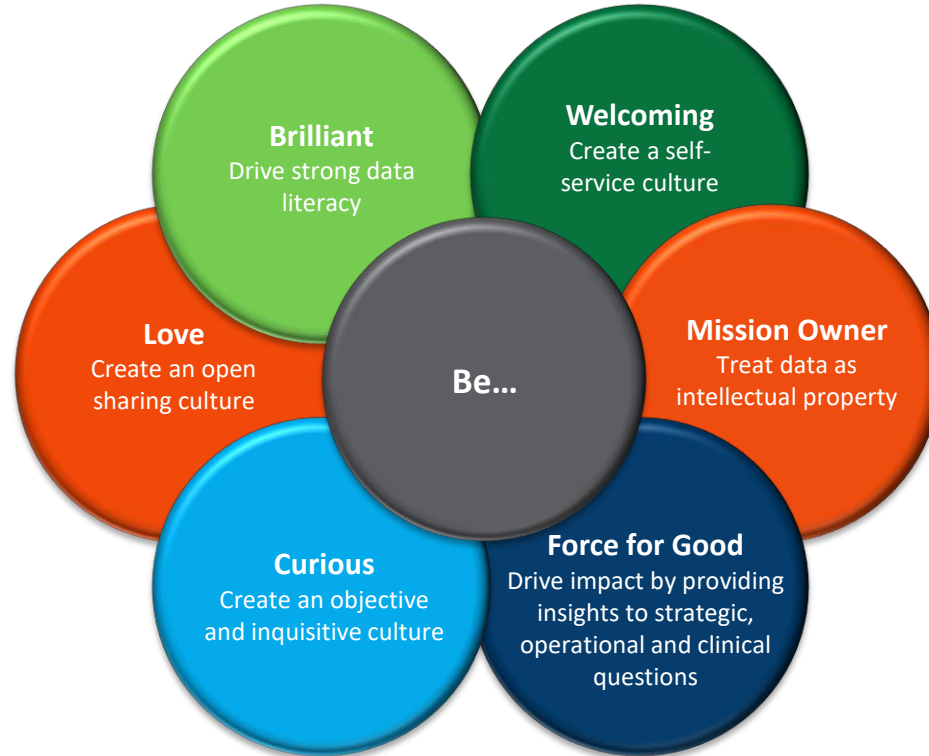
At-A-Glance

- Faith-based, non-profit integrated health system
- Over 20 hospitals with more than 3,200 beds
- 295+ clinics (hospital-based, rural health and physician clinics)
- 14 home care agencies
- 8 hospice agencies
- 4 joint-venture retirement centers
- Our growing workforce of 35,000 includes associates, medical staff physicians, allied health professionals and volunteers



ONE
 Adventist
 Health

Being Data Driven Means...

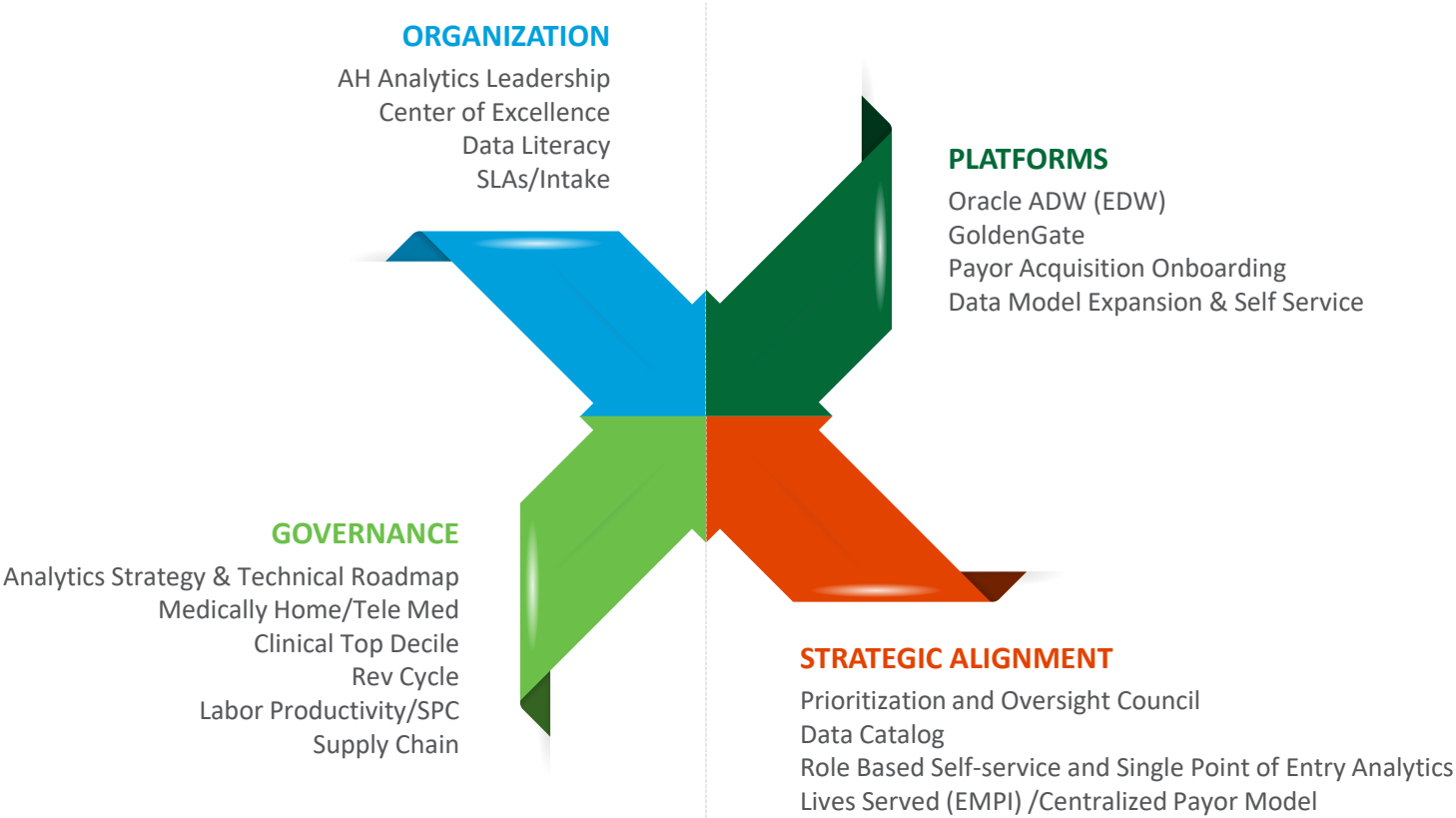


A Data Driven Organization...

makes decisions, implements strategy and changes behaviors

...based on objective and trusted insights and analysis

2020 Analytic Priorities



A perspective view of a modern server room. The room is filled with rows of server racks on both sides, curving away into the distance. The lighting is a vibrant blue, emanating from the racks and the floor. The ceiling has recessed rectangular light fixtures. The overall atmosphere is clean, organized, and high-tech.

Modern Data Warehouse Implementation

Burning Platform

- **End of life:** Environments were not being maintained
 - Patch's 2+ years behind plus stability and data model concerns
- **Strategy:** Strategic and analytic Initiatives are dependent on next generations tools
 - Acquisitions, EMR upgrades, clinical record, real-time data, use case expansion
- **One source of truth:** Adventist has multi data platforms
 - Finance, HR, Clinical, Rev Cycle, Supply Chain, etc.
- **Cost savings:** Remote hosted EDW was expensive
 - Needed to decrease cost
- **Own our own destiny:** Vendor dependent
 - Timelines/roadmaps, policies on external data, Data model restraints

What This Will Enable in the Future

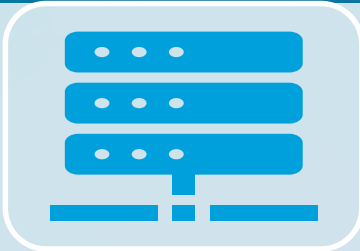
- **A Single Source of Truth**
 - We will be able to combine Clinical, Financial and operational data + more
- **Faster and More Stable Data Processing**
 - We will be able to handle large volumes of data and significant concurrent users without experiencing long delays or job failures
- **Enable Advanced Analytics**
 - New platforms are combatable with new technology required for more advanced data modeling, machine learning and natural language processing
- **Move from Retrospective to Concurrent Analytics**
 - Will create a platform to accelerate our journey for using near real time data processing vs waiting for nightly batch processing
- **Better Security**
 - Meet Security requirements of full monitoring, logging and person activity tracking
- **Increase Data Quality**
 - New platforms are combatable with technology required for Governance needs. Documented and searchable data will increase transparency and trust in data. Master Data Management to support knowledge management catalog for measures, rules, definitions, etc.

Why Oracle?



Oracle SaaS Customer

- HCM, ERP, EPM, etc...



Oracle Platform Customer

- Databases, OAC, APEX, etc...



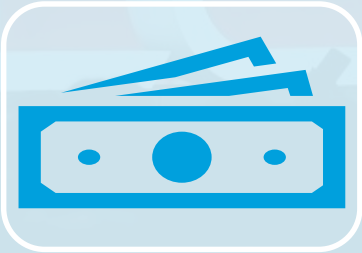
3rd Party Tools

- Oracle supports our other technical and analytic partners



Data Security

- Partner in Legal, Risk, HIPPA and BAA



Cost Model

- Pay as you use, flexible catalog



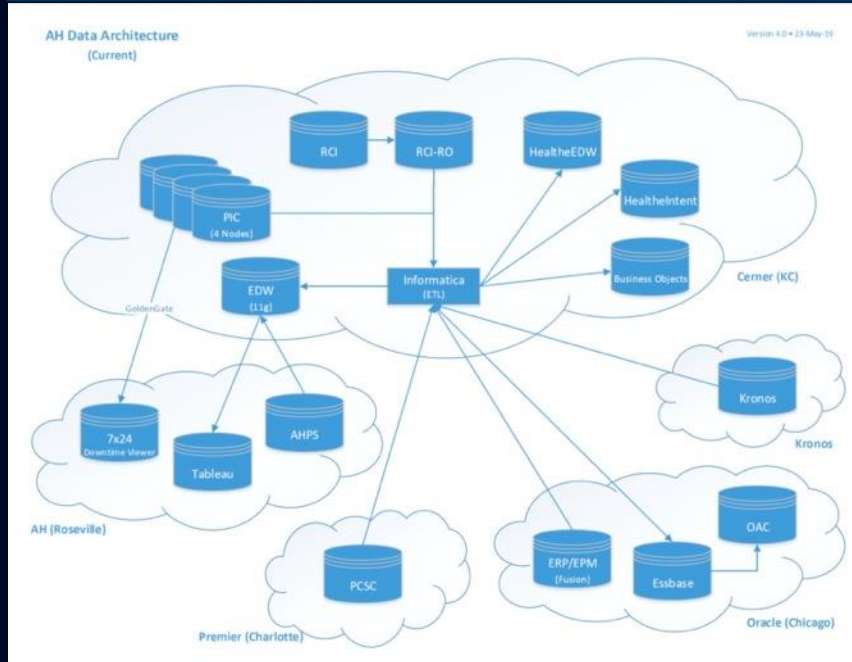
Implementation: Scope

- **Lift and Shift**
 - **Build:** Configure and copy 30T+ 11g DB to Autonomous Data Warehouse Cloud (ADWC)
 - **Dashboard and Report:** 160+ views, 400+ Reports
 - **Security:** Implement Cloud Security Model & Oracle Data Safe
- **New Content/Functionality**
 - **Acquisition Integration:** New Market (Rideout)
 - **AP Integration:** Remittance advice integration moved from AS400
 - **Large EMR Upgrade Change:** one domain/Change Informatica ETLs (400+ jobs)
 - **Audit and Reconciliation:** Enhance Data Architecture for auditing new table dimensions
- **People/Process**
 - **Insource Accountably:** Insourced leadership and 10-person team to AH employees

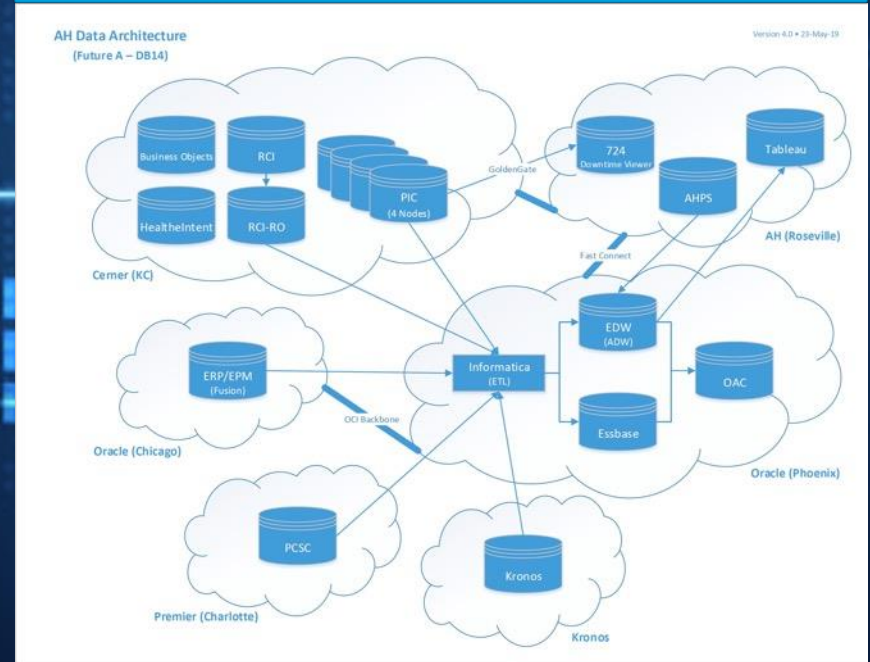
	Original	Final
Lift and Shift	Nov 19	Jan 20
New Content/Functionality	Oct 19	Mar 20
People/Process	Dec 19	Dec-19 - Apr-20

Implementation: Architecture

Before



After



Outcomes: Performance

Query: Single Session

Test	EDW (8 CPU)	ADWC (8 CPU)	ADWC (16 CPU)
1 Tableau Session	23 Minutes	9 Minutes	10 Minutes
2 Tableau Sessions	23 Minutes	25 Minutes	10 Minutes
2 Tableau Sessions and 1 SQL Developer Session	25 Minutes	23 Minutes	10 Minutes

Query: Multi-session

Test	EDW (8 CPU)	ADWC (16 CPU)
Tableau: Query Joining 13 Tables with a Large Data Set	33.7 Minutes	10.3 Minutes
Tableau: Complex Query with a Lot of Calculations	41.3 Minutes	4 Minutes
Tableau: Live Connection	58.5 Seconds	21.2 Seconds

DBA Time

	Before	After
Performance Tuning	25% FTE	10% FTE
Materialized Views	295 Hours/Each + Storage	N/A
Indexing	25% FTE	N/A

(No Longer) Burning Platform

- **End of life:** Environments not being maintained
 - Cloud guarantees we stay up-to-date
- **Strategy:** Strategic and analytic Initiatives are dependent on next generations tools
 - We can now leverage next generation tools
- **One source of truth:** Adventist has multi data platforms
 - AH now has one source of truth
- **Cost savings:** Remote hosted EDW was expensive
 - Decrease cost 65%
- **Own our own destiny:** Vendor dependent
 - We are now in full control of our data



A man in a dark blue suit and tie is shown from the chest up, holding a glowing blue sphere with both hands. The sphere is composed of intricate, glowing blue lines that form a complex, web-like structure. In the center of the sphere, the words "THANK YOU" are written in a bold, white, sans-serif font. The background is dark and features faint, glowing blue lines that resemble a network or data structure.

**THANK
YOU**