



# FIRST-EVER IMPLEMENTATION OF CLOUD-BASED UDMH

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# Speakers



Chris Tilly,  
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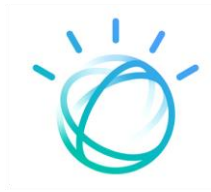


Jim Kouba,  
Director, Healthcare Solutions,  
Perficient



# Perficient Profile

- Founded in 1997
- Public, NASDAQ: PRFT
- 2017 revenue \$485 million
- Major market locations:  
Allentown, Atlanta, Ann Arbor, Boston, Charlotte, Chicago, Cincinnati, Columbus, Dallas, Denver, Detroit, Fairfax, Houston, Indianapolis, Lafayette, Milwaukee, Minneapolis, New York City, Northern California, Oxford (UK), Southern California, St. Louis, Toronto
- Global delivery centers in China and India
- 3,000+ colleagues
- Dedicated solution practices
- ~95% repeat business rate
- Alliance partnerships with major technology vendors
- Multiple vendor/industry technology and growth awards



## AWARDS & RECOGNITION



**Business  
Partner Awards**

**2017**

Beacon Award –  
Outstanding Watson Solution

**2016**

Beacon Award –  
Outstanding Enterprise Cloud Solution

**2015**

Collaboration Trailblazer of the Year

Beacon Award – Outstanding  
Information Management Solution

Worldwide Analytics Business  
Partner of the Year



**Gold Accreditation**  
IBM Systems, Commerce, and Analytics

## SOLUTION FOCUS & EXPERTISE



Cloud



Digital  
Experience



Business Process  
Management



Connectivity,  
Integration & APIs



Data &  
Analytics



Watson



Asset Management  
& IoT



Mobile



Commerce



DevOps

**600+**  
CLIENTS



**450 +**  
IBM CERTIFICATIONS

**20+**  
YEARS IN PARTNER  
ECOSYSTEM



**Top 10**  
IN ALL IBM  
SOFTWARE BRANDS



A group of five healthcare professionals are gathered around a wooden table in a meeting. A woman in a green hijab and top is on the left, looking at a tablet. A man with glasses and a dark suit is pointing at the tablet. A woman in a white lab coat and glasses is also looking at the tablet. A man in a dark suit and striped tie is on the right, looking towards the tablet. A woman in blue scrubs is standing in the background, looking down at a notepad. The scene is dimly lit, with a window in the background. The text "Cloud Journey: BJC HealthCare" is overlaid in the center in white.

# Cloud Journey: BJC HealthCare



## About the Client – BJC HealthCare

- One of the largest non-profit health care integrated delivery organizations in the United States
- Committed to improving the health and well being of the people and communities it serves through leadership, education, innovation, and excellence in medicine
- Serves the healthcare needs of urban, suburban and rural communities and includes 15 hospitals and multiple community health locations



## Business Drivers

- Just completed a strategic roadmap for a clinical analytics architecture
- First step was to establish a solid technical and data foundation for a unified, world-class enterprise analytics system
- Further position cutting-edge clinical research and state-of-the-art clinical and business management analytics

### Key Goals

- Consolidate & rationalize multiple clinical repositories
- Provide an integrated technology platform that is extensible
- Use standardized enterprise class, contemporary technology that is secure
- Reduce infrastructure costs
- Retire existing technology





# Key Challenges

- Current environment fractionated
  - Multiple technologies in place
  - Gaps in data availability
  - Inconsistencies in data representation
- Development in parallel with enterprise rollout of new EHR
  - EHR data critical to success
  - SMEs first priority is to rollout
  - New data structures and content not well understood
- Need to develop skills and knowledge for self-sufficiency
  - New staff = steep learning curve
  - New technology = extensive training & ramp-up
- Security





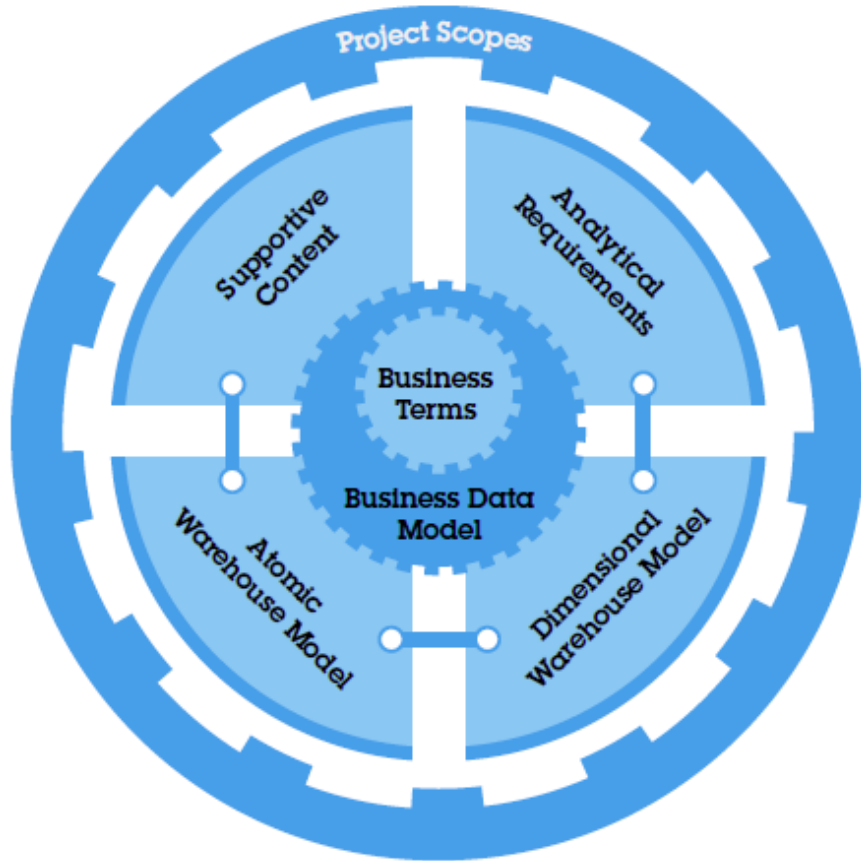
# Solution

Implemented an EDW on the cloud to provide cost savings and architecture flexibility. Developed a streamlined migration and integration of data from the on-premises repositories to the cloud platform using design patterns that are built specifically for efficient data movement in a cloud environment.

## Solution Components

- IBM Unified Data Model for Healthcare (UDMH)
- IBM Db2 Warehouse on Cloud (formerly dashDB)
- Perficient Cloud Analytics Gateway
- Lift (secure, high-speed cloud data migration service)
- Informatica (localized job execution control)
- Collibra (data governance and lineage)
- IBM Tivoli (infrastructure optimization)

# IBM Unified Data Model for Healthcare Overview



**Business Terms & Business Solution Templates (Analytical Requirements)** - Describes the business & analytical content that is supported by the data models. Provides a consistent terminology and helps to understand the information used by related IT assets

**Supportive Content** – Supports external data sources and standards. Includes mappings to UDMH content. Provides support for HL7, HIPAA 5010, X12, i2b2, VCF 4.2, and NAACCR

**Business Data Model** - is a conceptual level data model that specifies the third normal form data structures required to represent the concepts defined in the Business Terms.

**Atomic Warehouse Model** - is a design level data model that represents the enterprise-wide repository of atomic data used for informational processing.

**Dimensional Warehouse Model** - is the enterprise-wide repository for analytical data. It contains star schema style dimensional data structures organized around fact entities that support the Analytical Requirements

# Health Analytics Gateway Features and Principles On-Premises or Cloud-Based

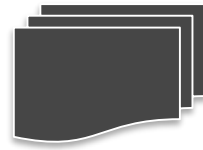


IBM Business Partner Awards

Beacon Award -  
Outstanding Information  
Management Solution



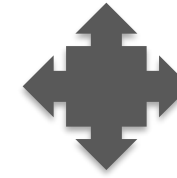
Reduced data  
integration



Populates key  
functional areas



Standardized data  
for BI reporting



Extensible using industry  
standard technologies



## Repeatable and Consistent

Reduces risk through utilizing tested and proven methodology, patterns and framework based on best practices, across multiple implementations



## Timely

Less time to value, while iteratively driving to further value, through reduced data integration times



## Attainable

Easy to use framework through collaborative, incremental build (not a big bang approach) and user engagement and enablement



## High Quality

Proven expertise and domain knowledge of implementation team, utilizing IBM's UDMH and technologies



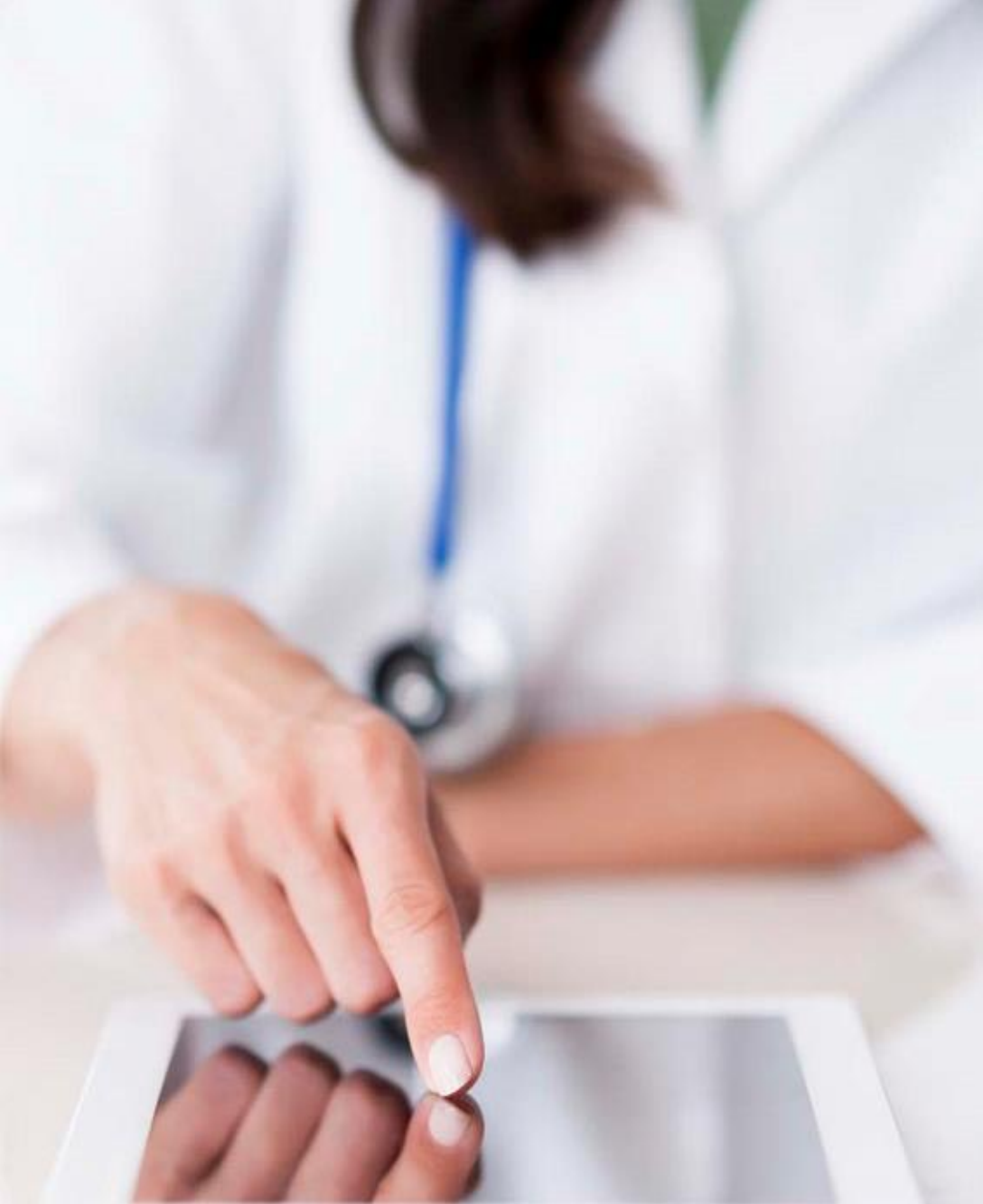
## Meaningful

Meets industry standard high-value use cases to aggregate data into data marts for purpose-built analytics



## Scalable

Established framework allows for incremental value to be added, with reduced effort



## Key Benefits

- Provided access to historical and operational data from the consolidated EDW for optimal reporting and comprehensive clinical research
  - Clinical practice and research teams now have a more holistic view of the patient's experience over the course of treatment and clinical interactions
  - Removed burden of legacy environments and disparate repositories through migration to a consolidated, modern cloud-based data platform
- Improved ability to onboard new systems and integrate new data sources
- Cloud environment has reduced hardware and server costs, increased scalability and flexibility, and speeds time to deployment






## Lessons Learned

- Establishing an enterprise-wide steering committee drove more rapid decision making and enabled buy-in from multiple, organizational constituents
- Consolidation of vendors and tools enabled more focus in solution design and issue resolution
  - Vendor and client partnership approach established open dialog and enhanced the solution
  - Early collaboration from engineers from all technologies identified key solution risks and mitigation plans
- Build-in time to train resources and fully adopt and internalize the new technologies
  - Expect unanticipated challenges and plan for them upfront



Questions



Stop by Perficient's booth,  
#550, after the session to  
continue the conversation