



UnitedHealth Group Improves Quality of Care While Controlling Costs with TigerGraph

CUSTOMER SUCCESS STORY



The Customer

UnitedHealth Group

FOUNDED IN: 1977

LOCATION: MINNESOTA

EMPLOYEES: 300,000+

AREA OF FOCUS: THE LARGEST HEALTHCARE COMPANY IN THE WORLD BY REVENUE



UnitedHealth Group Improves Quality of Care While Controlling Costs

UnitedHealth Group (UHG) is the largest healthcare company in the world by revenue. The company, which offers healthcare products and insurance services, is recognized as one of the most innovative organizations within its industry. UHG has almost 50 million medical members. UHG's technology division, Optum, provides technological, operational and consulting solutions and services. Optum employs over 181,000 of the brightest minds and committed people in healthcare.

Native parallel graphs, the most advanced type of graph analytics, enable data scientists and business users to analyze their data on graph - a database designed to link datasets across multiple domains. With graph, you can easily add another dataset to your analysis and be able to harvest the data to find frequent patterns and suggest the next best action.



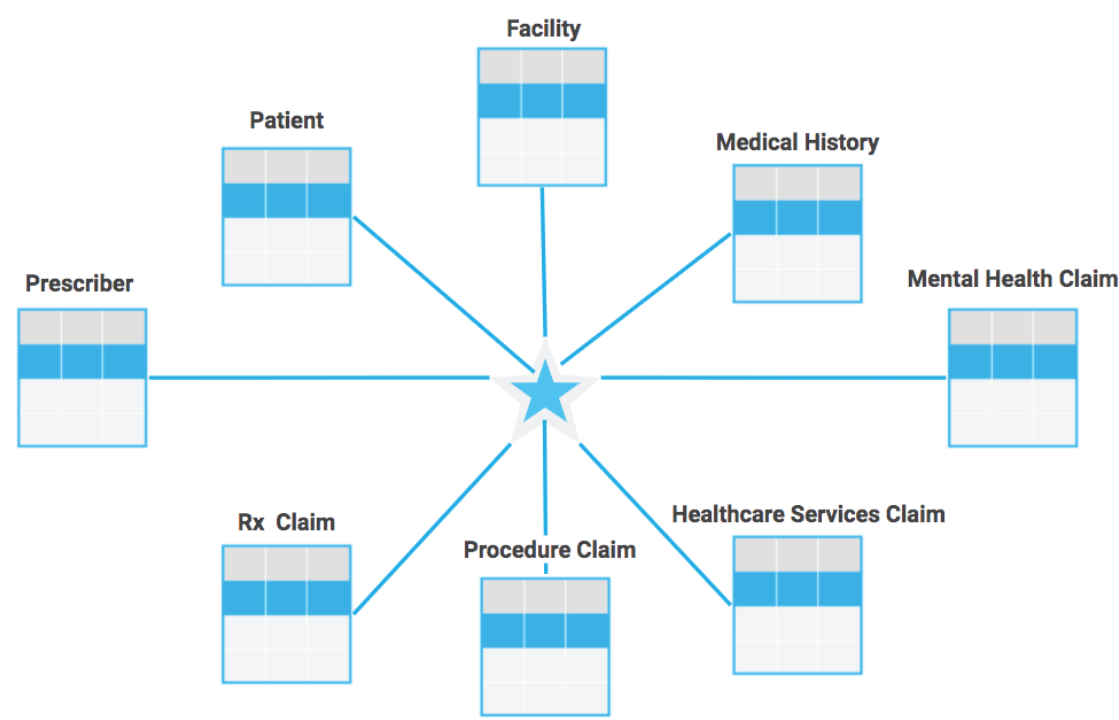
The value of graph, with AI algorithms on top, is that not only can we monitor an enterprise, we can predict - and that allows us to avoid problems before they happen.

Edward Sverdlin, Vice President,
Advanced Technology Collaborative,
UnitedHealth Group

The Challenge

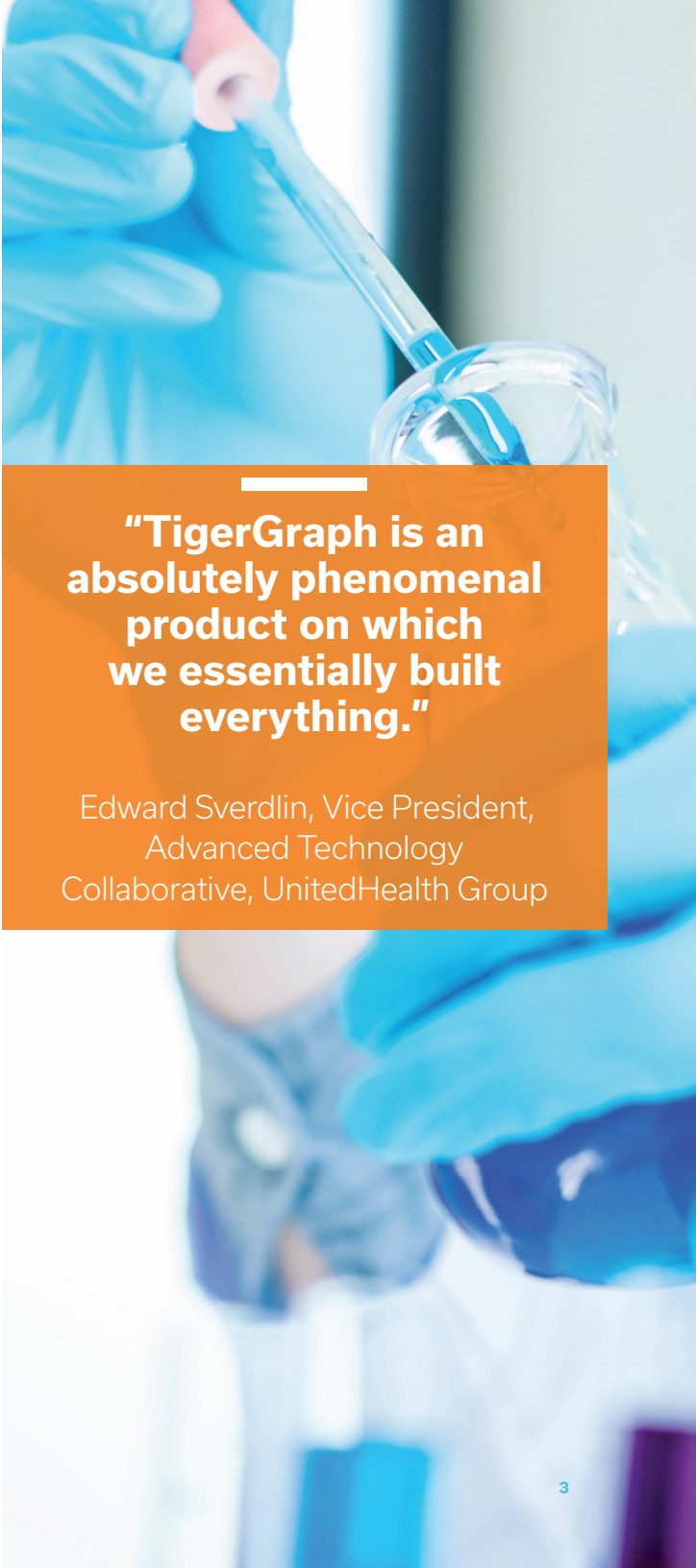
UHG’s aspiration is to improve the quality of care it provides to its members, while reducing the costs associated with providing that care. In order to deliver on this goal, the company continuously looks for ways to better understand the relationships between providers and members, with a special focus on its members’ journeys to wellness. UHG had looked at multiple solutions for 10 years to find a way to provide users with an integrated view of members. Optum, the technology division of UHG, identified graph databases and analytics as one of the best ways to do this and, after a thorough evaluation of multiple vendors, selected TigerGraph over all other vendors.

Mapping Out the Patient Journey in Healthcare with a Relational DB



Complex Database Joins Across 50+ Silos Leads to Delayed Business Insights

Figure 1: Complex table joins needed with a relational database for quality of care analysis



“TigerGraph is an absolutely phenomenal product on which we essentially built everything.”

Edward Sverdlin, Vice President,
Advanced Technology
Collaborative, UnitedHealth Group

The Solution

TigerGraph is enabling UHG to build the largest healthcare graph with over 10 billion vertices and 50 billion edges. It currently contains 1.2 terabytes of data that includes information on its members, providers, claims, visits, prescriptions, procedures, and more. Over 23,000 users access the graph each day on a variety of applications. TigerGraph empowers UHG’s medical providers to make real-time care-path recommendations using knowledge of 50 million patients. Doing so improves the quality of care that it provides to its members, while reducing the costs.

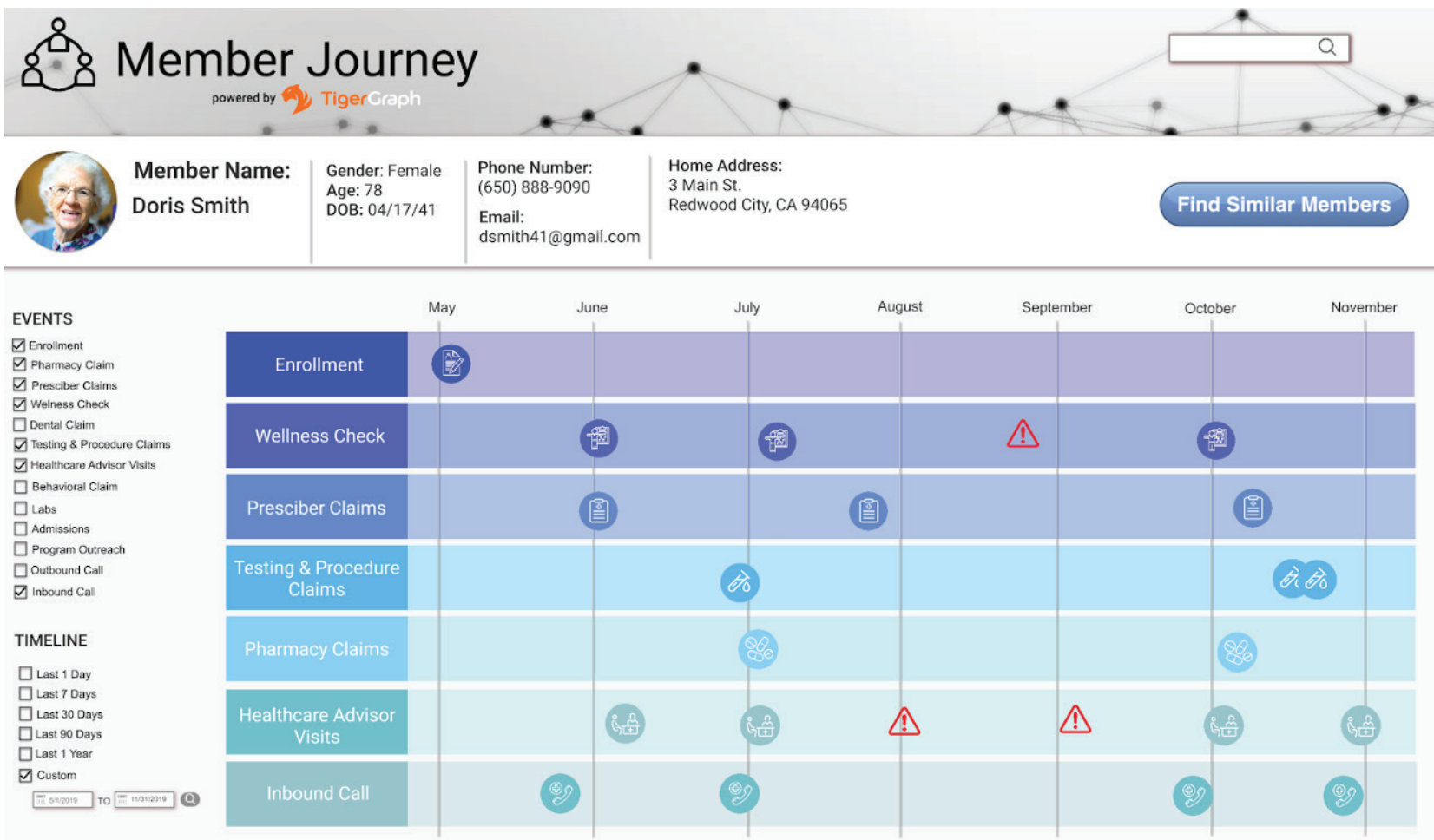


Figure 2: Conceptual schematic of the member journey UI for customer 360. For the actual GUI at UnitedHealth Group, see slides for Edward Sverdlin’s keynote from Graph + AI conference here <https://info.tigergraph.com/keynote-edward-sverdlin>

“Graph is the brains of the enterprise. In just 8 hours we built a model that can predict disease using connected data in the graph.”

Edward Sverdlin, Vice President,
Advanced Technology
Collaborative,
UnitedHealth Group

The Results

UHG has implemented TigerGraph in its contact centers and estimates \$150 million in savings a year by enabling its medical professionals to provide accurate and effective care path recommendations in real time. The company expects to experience additional benefits by helping members embrace healthier lifestyles, avoid costly pharmaceuticals, recover faster from medical procedures, and much more. UHG is also actively looking at other applications for graph across the company and predicts cost savings could run into the billions of dollars.

"In the past, when somebody called into our call center, we would have had to log into 15 different systems to get a view of this member's activity. Now users log into just one screen and have a beautiful timeline view of every touchpoint we've had with members. We can generate that incredible timeline in less than 50 ms."

Dan McCreary, Distinguished Engineer, Optum

WATCH THE VIDEO

Edward Sverdlin's keynote from the 2020 Graph + AI conference

<https://info.tigergraph.com/keynote-edward-sverdlin>

WATCH THE VIDEO

Data Science Panel from the 2020 Graph + AI conference

<https://info.tigergraph.com/graph-ai-world-data-science-panel>

"The number 1 business challenge we have been struggling with for 10 years, and we have only really conquered with TigerGraph in the last 2 years, has been the process of creating an integrated view of our members."

Dan McCreary, Distinguished Engineer, Optum
(part of UnitedHealth Group)



Some of Our Customers



Get Started for Free at [Tigergraph.com/Cloud](https://tigergraph.com/Cloud)

[TigerGraph Cloud](#) graph database as a service is built for agile teams who'd rather be building innovative applications to deliver new insights than managing databases.

TigerGraph Cloud [Starter Kits](#) are built with sample graph data schema, dataset, and queries focused on specific use cases such as fraud detection, recommendation engine, supply chain analysis and/ or a specific industry such as healthcare, pharmaceutical or financial services.

Customer Benefits:

- Real-time fraud detection at 7 out of the world's top 10 global banks
 - Care path recommendations for 50 million patients
 - Personalized offers for 300 million consumers
- Energy infrastructure optimization for 1 billion people

“With TigerGraph we can join sources of data together and make connections within the data that previously we couldn't. We can now answer questions that, for the last 20 years, we didn't think were possible to ask.”

Harry Powell | Director of Data & Analytics **Jaguar Land Rover**

About TigerGraph

TigerGraph is the only scalable graph database for the enterprise. TigerGraph's proven technology connects data silos for deeper, wider and operational analytics at scale. Seven out of the top ten global banks use TigerGraph for real-time fraud detection. Over 50 million patients receive care path recommendations to assist them on their wellness journey. 300 million consumers receive personalized offers with recommendation engines powered by TigerGraph. The energy infrastructure for 1 billion people is optimized by TigerGraph for reducing power outages. TigerGraph's proven technology supports applications such as fraud detection, customer 360, MDM, IoT, AI, and machine learning.

For more information visit www.tigergraph.com and follow us at: [Facebook](#) [Twitter](#) [LinkedIn](#)

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CLOUD STARTER KITS	OVERVIEW
COVID-19 ANALYSIS	Detect hubs of infection and track the movements of potential spreaders
CUSTOMER 360-ATTRIBUTION & ENGAGEMENT GRAPH	Create a real-time 360 view of the customer journey for attribution and engagement insights.
CYBERSECURITY THREAT DETECTION-IT	Block cybersecurity threats by detecting interconnected events, devices and people
ENTERPRISE KNOWLEDGE GRAPH (CORPORATE DATA)	Analysis of corporate data including investors and key stakeholders.
ENTERPRISE KNOWLEDGE GRAPH (CRUNCHBASE)	Knowledge graph examples featuring crunchbase data with startups, founders and companies.
ENTITY RESOLUTION (MDM)	Identify, link and merge entities such as customers with analysis of attributes and relationships.
FRAUD & MONEY LAUNDERING DETECTION	Multiple types of fraud and money laundering patterns.
GSQL 101	Introduction to TigerGraphs powerful graph query language.
HEALTHCARE GRAPH (DRUG INTERACTION/ FAERS)	Healthcare example focused on public (FAERS) and private data for pharmaceutical drugs.
HEALTHCARE-REFERRAL NETWORKS, HUB (PAGERANK) & COMMUNITY DETECTION	Analyze member claims to establish referral networks, identify most influential prescriber's and discover the connected prescriber communities.
MACHINE LEARNING & REAL-TIME FRAUD DETECTION	Mobile industry example for detecting fraud in real-time and generating graph-based features for training the machine learning solution.
NETWORK & IT RESOURCE OPTIMIZATION	Network and IT resource graph for modeling and analyzing the impact of the hardware outage on workloads.
RECOMMENDATION ENGINE (MOVIE RECOMMENDATION)	Graph-based movie recommendation engine built with public data.
SOCIAL NETWORK ANALYSIS	Social network example for understanding and analyzing relationships.
SUPPLY CHAIN ANALYSIS	Example covering inventory and impact analysis.