



FROST & SULLIVAN

2016 BEST PRACTICES AWARD

NORTH AMERICAN POPULATION HEALTH MANAGEMENT COMPANY OF THE YEAR AWARD

Selecting a Partner: Frost & Sullivan recognizes Optum as the Company of the Year in Population Health Management



Table of Contents

Company of the Year Award for PHM Solutions	3
Understanding Company of the Year	3
Industry Challenges	4
Population Health Management	4
How to Design PHM Initiatives	6
How to Deploy PHM Initiatives	7
Service is as Important as the System	8
The PHM Ecosystem	9
Conclusion	9
About Frost & Sullivan	10
About Optum	10



As the US healthcare market continues to rely on advanced PHM solutions to reduce clinical utilization and improve financial performance, Optum is likely to remain a preferred PHM partner for a wide variety of healthcare stakeholders including providers, payers, governments and consumers.

Company of the Year Award for PHM Solutions



UNDERSTANDING COMPANY OF THE YEAR

Frost & Sullivan's recent research in PHM revealed that many payers and providers are struggling to optimize efficiency of care due to lack of technological preparedness. The US healthcare information technology market is marred by closed-loop, modular applications that fail to improve functional outcomes of a defined patient population. Hence, different US-based healthcare entities exhibit a variety of unmet care needs.

Optum's PHM robust analytics solution automates collection and normalization of disparate patient data and generates patient-specific workflows for physicians at the point of care. Because of its strong overall performance, Optum earned Frost & Sullivan's 2016 North American Company of the Year Award for the PHM market.

INDUSTRY CHALLENGES

The US healthcare industry is changing rapidly in response to the massive cost burden of chronic diseases. As industry stakeholders across the US look to address care quality by increasing focus on preventive measures and coordination across the care continuum, other market factors such as less than optimal preventive programs and physician shortages are also preventing providers from meeting the needs of their patients. Therefore, regulations and payment incentives are being worked out to ensure that care delivery is optimized through the usage of progressive technologies, approaches and services. This includes enabling the movement away from fee-for-service/volume based healthcare models to value-based care delivery ecosystems that drive cost reduction, improve care efficiency, and reinforce accountability for the quality of care.

As a result, the US healthcare market is transitioning to “human capitalism” by recalibrating the traditional business objective of margin improvement through volume growth.

Today, provider executives consider patient outcomes as one of the key pillars of success as service volume is no longer proportional to revenue growth. ACOs and industry consolidation recently gained momentum following the Centers for Medicare & Medicaid Services (CMS) announcing the objective of linking 50 percent of care reimbursement (Medicare FFS) to patient outcomes by 2018. The CMS has carried out its promise by introducing value-based care methodologies (Meaningful Use) through alternative payment models (MACRA, bundled payments, Medicare Shared Savings ACOs) that penalize providers for not adhering to national care quality, utilization and outcomes standards. In response, payers and providers are collaborating and embracing advisory, technological, training and support services to better identify, assess, manage and optimize care workflows in an effort to improve patient outcomes.

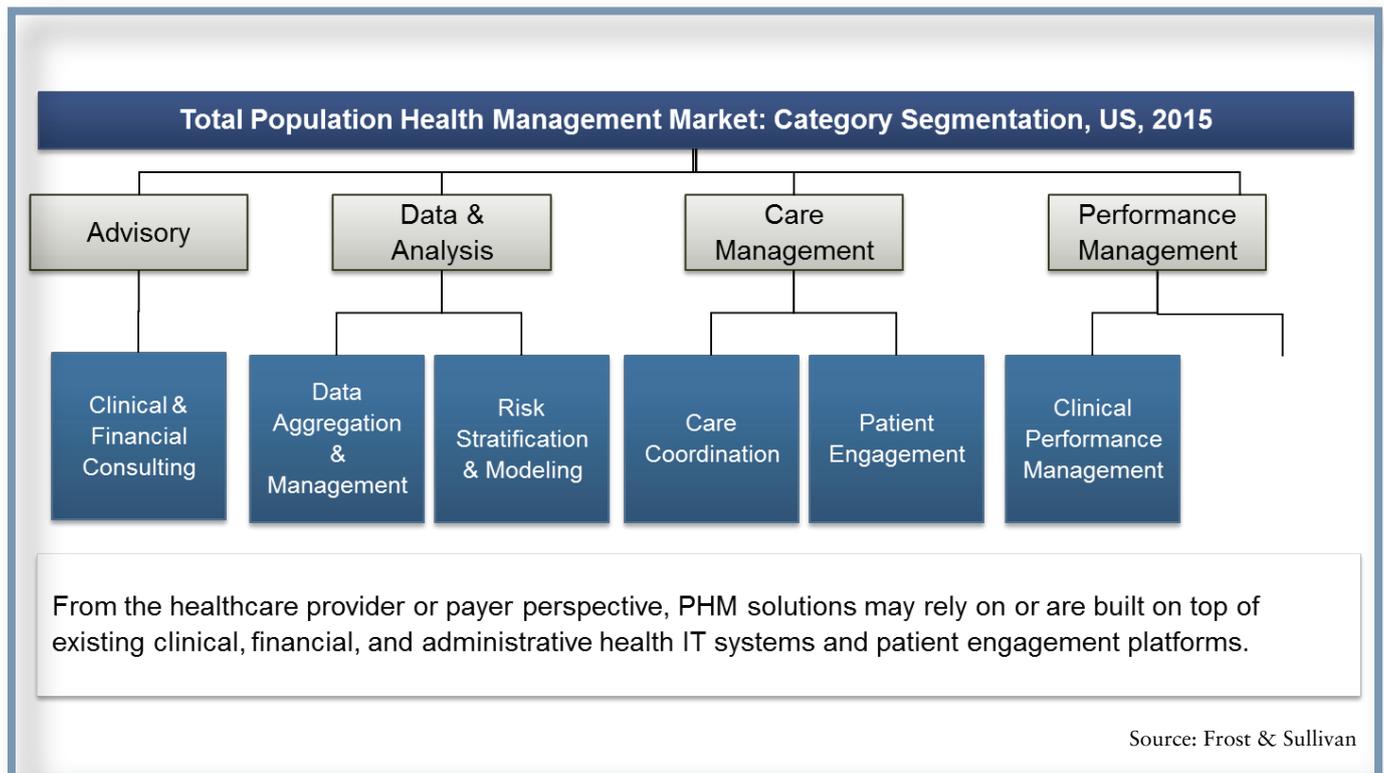
POPULATION HEALTH MANAGEMENT

Population health management (PHM) as a term was coined to emphasize the need to stratify an entire patient population into cohorts that are clinically and financially homogenous (e.g., bearing similar symptoms, carrying similar health histories, utilizing similar clinical services, and exhibiting similar coverage). PHM solutions then support evidence-based care centered on the unique traits of each patient cohort. The principal purpose of a robust PHM ecosystem is to identify appropriate care workflows, control readmissions, manage chronic conditions and promote self-care so that incoming patients heal more quickly, transitioning patients avoid readmission, and healthy populations stay healthy. This seems to be a fairly straightforward objective in an ideal world where all health IT systems

are compatible and providers are able to exchange patient information seamlessly across any network for the purpose of identifying and visualizing each patient accurately across the care continuum.

However, the reality is providers are struggling to connect disparate EHRs, consolidate lab results, coordinate care across departments and measure the impact of value-based care at the network, practice and patient levels. Almost 40 percent of US-based providers have planned to replace their incumbent EHRs, which are not cost effective, interoperable, or immune to cyber threats.

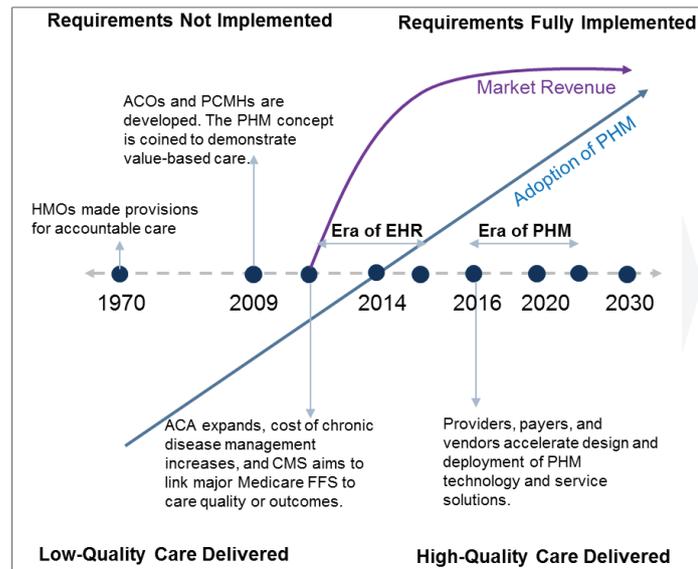
On average, every US-based hospital (with 1200-1400 licensed beds) spends about \$15 million on IT (clinical and business software) every year, but almost 20 percent of these providers reported negative profit margins and 50 percent paid readmission penalties in 2015. Provider executives now need to rely on health IT vendors that demonstrate capabilities to enable them to meet new goals in a value-based care environment. PHM programs that help providers reduce readmissions and improve patient outcomes at an enterprise level can be segmented in four major components- PHM advisory services, data analysis, care management and performance management.



Although the PHM ecosystem appears to be complex, dynamic and progressive, the concept of “accountable care” was conceived decades ago by health maintenance organizations. However, lack of regulatory intervention and poor market acceptance delayed its implementation. In 2009, the US government made landmark provisions to focus on the cost burden of chronic disease management. Formation of ACOs and Patient Centered Medical Homes (PCMHs) resumed focus on value-based care delivery. As a result, CMS decided to regulate reimbursement, incentivize

outcomes, and penalize unnecessary utilization. Value-oriented reimbursement frameworks have prompted increased interest in PHM and shifted management priorities in favor of accountable care. The need for robust PHM solutions that can reduce the cost of care delivery by curbing readmissions and avoiding preventable utilization has increased since then. As more providers allocate more net patient revenue to quality or outcomes, the US PHM market is poised to grow unprecedentedly in the next few years.

Total Population Health Management-History of Accountable Care, US, 2016



ACO-Accountable Care Organization, PCMH-Patient Centered Medical Homes.
HMO-Health Management Organizations, ACA-Accountable Care Act, EHR-Electronic Health Record

Source: Frost & Sullivan

How to Design PHM Initiatives

Today, most providers acknowledge the benefits of PHM but a proven methodology has not emerged. Instead, many providers perceive PHM as an advanced application of healthcare analytics. The PHM ecosystem is larger and includes:

- Risk stratification
- Patient engagement
- Care coordination
- Performance management

PHM requires a long-term, strategic commitment from top-level executives, physicians, and other care managers. Providers who begin to assess the potential and applicability of PHM follow a 4-step approach.

Total Population Health Management-Transition to Accountable Care, Four Essential Steps to Follow, US, 2016



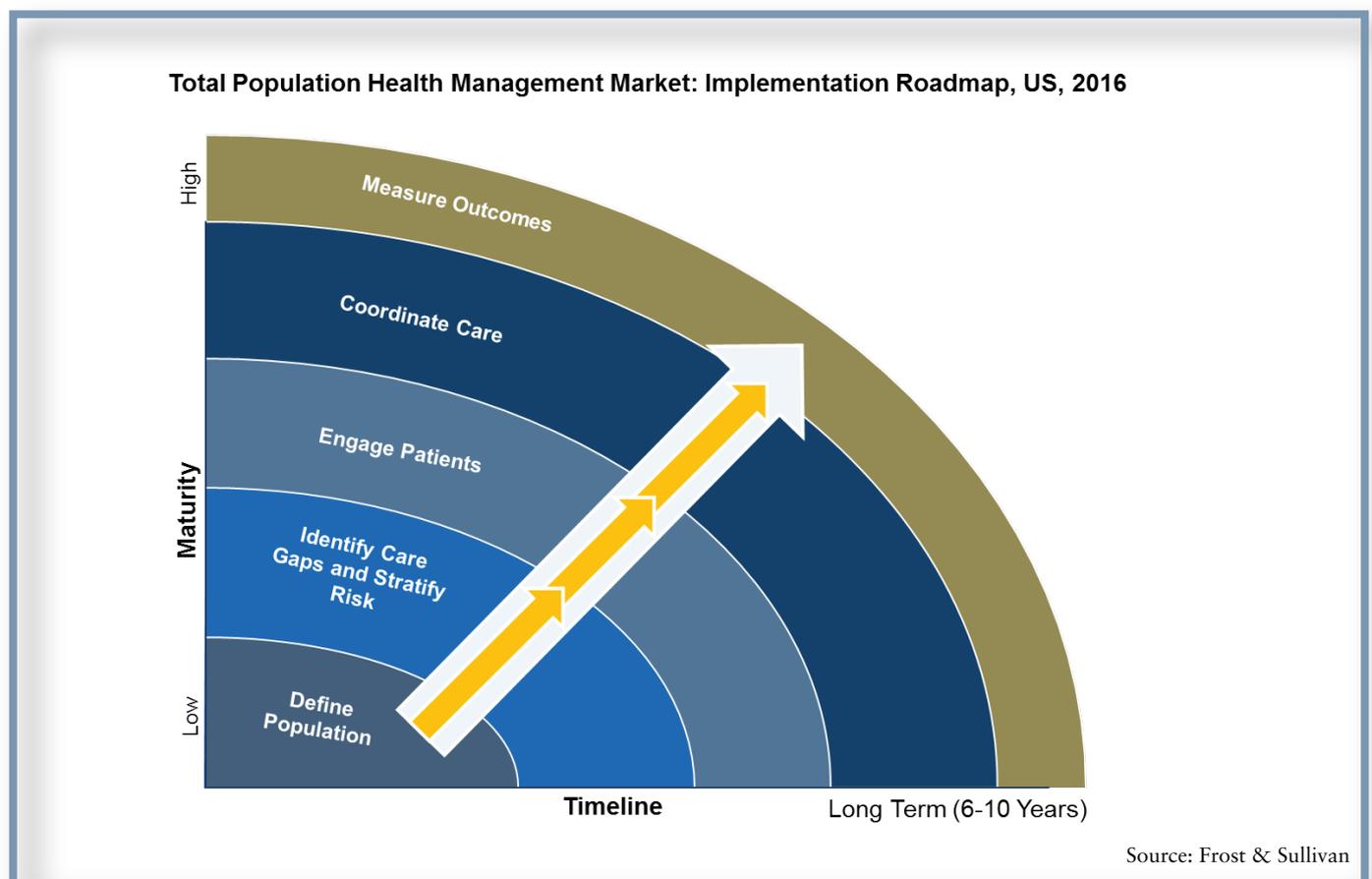
Source: Frost & Sullivan

How to Deploy PHM Initiatives

Providers need to deploy PHM technology and service solutions to intervene across all levels of patient acuity, not just high-risk/high-cost patients.

A complete PHM platform will need to analyze disparate patient data, highlight care improvement opportunities, manage delivery through coordination and engagement, benchmark performance and mitigate financial risks.

Health systems should start by designing robust analytics solutions that automate collection and normalization of disparate patient data at an enterprise level. They should stratify patient risks and generate personalized workflows for physicians at the point of care. Ideally, physicians should be empowered to administer data-driven clinical decisions based on readings of a patient's medical history, coverage, socioeconomic status and genomic profile from integrated EHRs.



Health system purchasers prioritize procurement of PHM solutions that also provide superior care connectivity and a HIPAA-compliant care coordination infrastructure. The platform should interface with all major providers regardless of their underlying technology architecture. The built-in care coordination technology should also automate workflow allocation and monitoring based on every patient's immediate and impending health condition. Health systems also should ensure incumbent PHM solutions produce personalized clinical, financial, and operational utilization reports that indicate clinical best practices, quality ratings, cost benchmarks, and operational efficiency.

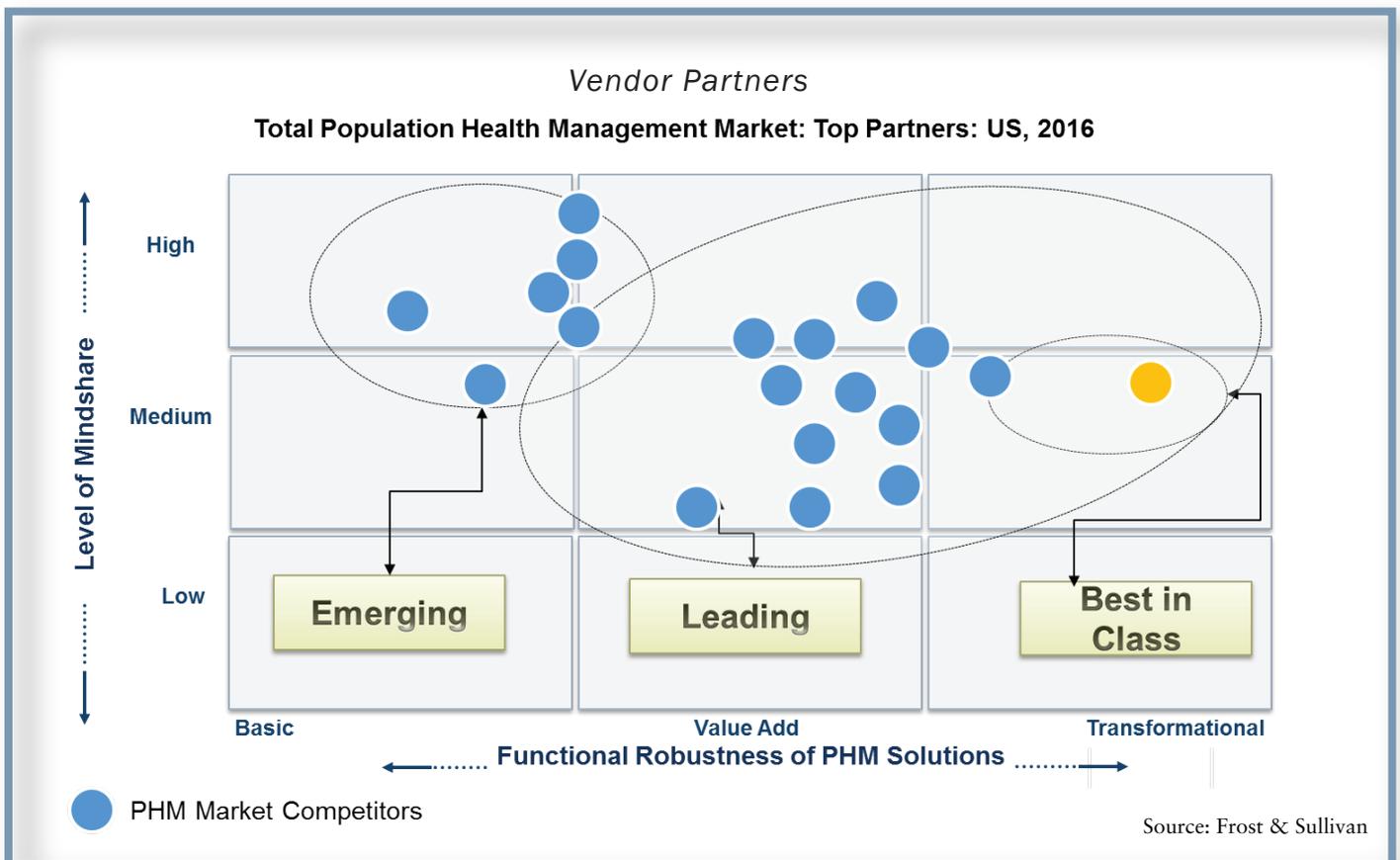
Service is as Important as the System

PHM is a progressive concept that needs to be assessed, investigated and embraced with precision. Many executives of large payer and provider organizations have realized that a disciplined PHM approach conducive to their strategic, technological and financial maturities, can yield immediate and measurable impact, and have sought external advisory support to customize their PHM ecosystems. For example, many providers want to devise health plans for shared-risk environments but often lack the experience to model health plans in-house. Many health insurance companies incurred huge losses in 2015 because they did not anticipate the overwhelming numbers of older and sicker patients, versus young, healthier enrollees to optimize risk pools and therefore meet their margins. Progressive health systems rely on data-driven advisory capabilities of top PHM technology vendors.

PHM experts often work on site with an organization's executive team to help define and implement transformational health IT strategies, and tailor risk-based reimbursement models specific to the provider's operational maturity. They also advise health systems that are likely to:

- Devise ACO care ecosystems
- Outsource in-house BI/PHM units
- Revitalize poor-performing existing health IT systems
- Revamp IT security and infrastructure for cross-continuum health information exchange outcomes

It is widely acknowledged that a comprehensive value-based care consulting capability, coupled with agile IT solutions enabling PHM, drives customer advocacy and loyalty for PHM vendors.



Note: X-axis functional robustness of PHM solutions suggests the degree of technological progressiveness registered by the US PHM market. Y-axis level of mindshare refers to providers' top-of-mind association with the procurement of PHM technology and service solutions.

Emerging companies are mainly EHR vendors striving to build integrated PHM solutions through ecosystem partnerships and proprietary research and development efforts. These companies carry high mindshare among provider executives and aim to utilize ongoing health IT engagements. Leading companies represent a combination of platform and modular solution providers that have helped many health systems transition from volume to value-based healthcare.

Their core strength includes value-based contracting, strategic advisory, data analytics, risk stratification, and patient engagement services. Best-in-class companies address not only providers' current PHM needs, but also direct their efforts to cater to market transformation. They offer secure, interoperable, and highly customized solutions that monitor, predict, and manage patient conditions across the continuum of care.

The PHM Ecosystem

More than 100 healthcare IT companies participate in the US PHM market, and many propose solutions for a specific PHM vertical tied to either health intelligence or quality reporting. The PHM ecosystem is larger, and includes data management, risk stratification, care management, patient engagement, and performance management capabilities. Only a select few companies have managed to optimize the entire ecosystem and are truly prepared to help both payers and providers improve the health of a community population and reduce per-capita healthcare costs. Optum stands out for its end-to-end PHM capability. The company offers a suite of next-generation health IT solutions, capable of driving process efficiency for a broad range of provider and payer groups. Its holistic healthcare

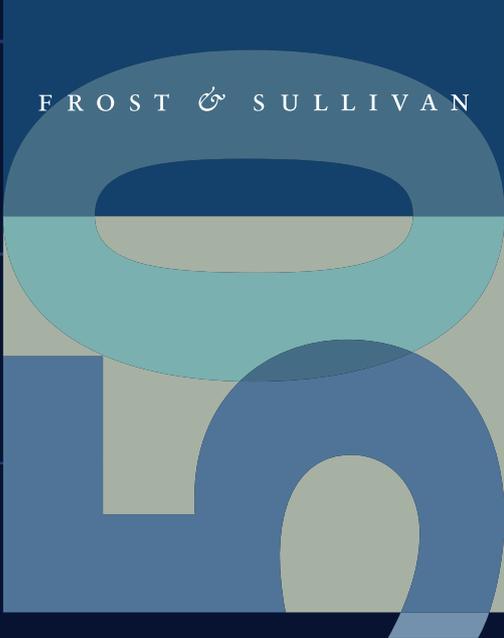
approach powered by industry leading technology solutions and highly credible service partners is enabling health systems to:

- Highlight care gaps
- Develop longitudinal patient record
- Initiate evidenced-based care
- Coordinate siloed care departments
- Empower patients through cross-continuum engagement
- Benchmark clinical and financial outcomes

As the US healthcare market continues to rely on advanced PHM solutions to reduce clinical utilization and improve financial performance, Optum is likely to remain a preferred PHM partner for a wide variety of healthcare stakeholders including providers, payers, governments and consumers.

CONCLUSION

The US PHM market is poised for unprecedented growth as providers and payers turn to PHM technology in pursuit of value-based care. The market is expected to adopt innovative engagement models supported by both enterprise and modular PHM platforms. For the next 2 to 3 years, vendors may absorb additional cost burdens to ensure that providers design and implement PHM solutions effectively. Vendor executives are likely to spend more time onsite, and many regional patient-support centers will be deployed to promote self-care and enable patients to manage their condition throughout the continuum of care. Providers on the other end of the spectrum will continue to hire trained PHM personnel for executive positions. Leading integrated delivery networks are assessing opportunities to deploy a central PHM team that will coordinate efforts across the network. PHM is one of the most important areas of opportunity in health IT in a post-EHR era.

The logo for Frost & Sullivan is centered in the upper right quadrant. It features the company name in a white, serif font with a small ampersand between the words. Below the text is a large, stylized graphic composed of overlapping, semi-transparent shapes in shades of blue and teal, resembling a large letter 'F' or a similar abstract form. The background of the entire page is a dark blue with several large, thin, light blue circular and oval outlines that create a sense of depth and movement.

FROST & SULLIVAN

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. For more than 50 years, we have been developing growth strategies for the global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies? Contact us: Start the discussion www.frost.com

About Optum

Optum is a leading information and technology-enabled health services business dedicated to helping make the health system work better for everyone. With more than 100,000 people worldwide, Optum delivers intelligent, integrated solutions that help to modernize the health system and improve overall population health. Optum is part of UnitedHealth Group (NYSE: UNH).