

Healthcare Systems and Services Practice

How healthcare services and technology companies can boost productivity with data and analytics

Building data and analytics capabilities can help them take advantage of robust growth in outsourced health services.

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Payers, health systems, and life-sciences companies are increasingly seeking help from health services and technology (HST) firms to identify wasteful spending and boost revenue. HST companies, having long served clients across the industry spectrum, have created best-of-breeding thinking for many solutions, yet are far from alone in vying for work. The market for outsourcing health services such as logistics, payment solutions, and data and software platforms is expected to rise at a compound annual growth rate of more than 10 percent.¹ HST could follow mainstream technology companies in investing more in deeper data and analytics capabilities, and work with payers and providers to outsource their analytics needs.

Shifting value pools offer new opportunities for HST vendors as well as their competitors.² Based on previous waves of consolidation, it is likely that the payer, health systems, and life-sciences markets will continue to consolidate through payment and delivery innovations and accelerated horizontal and vertical mergers, acquisitions, and partnerships.³ To survive and grow in this new world, all HST vendors may consider converging ecosystems; offer more complete, accurate, speedy, and embedded solutions; and expand their solutions and capabilities into new markets and customer segments. Wherever and however an HST company chooses to grow, the odds of success will be enhanced by developing all five of the digital and analytics capabilities.

Increased use of data and analytics by HST companies could benefit payers and providers by helping them reduce wasteful spending, promote faster responses to changes in the market such as new regulation, and lift profit margins as well as potentially improve the healthcare experience for patients.

In this article, we focus on five capabilities that HST companies could invest in to translate mountains of data into insights

and strategies, thus increasing their productivity and better serving their customers: access to diverse healthcare data; data aggregation for longitudinal medical records; advanced analytics; multidomain intelligence and expertise; and workflow integration.

Rising investment in digital technologies

Since 2011, more than \$39 billion has been invested in digital health through over 2,500 venture-capital deals, including \$7.48 billion for 374 such deals in 2019 alone.⁴ (The actual amount invested in these technologies is likely much higher, because it typically does not include internal innovation budgets that companies have committed to digital transformation.) While much of this investment focuses on consumer-centric solutions—such as wearables and scheduling applications—roughly 20 percent is directed to electronic health records, data analytics, and other technologies that HST vendors can provide to the industry.⁵

McKinsey estimates that revenue is expected to grow at more than 10 percent annually for the combination of payer market segments that include population-health management and medical management, claims management, payment integrity, and risk adjustment. In health systems, we expect annual revenue growth in the revenue-cycle management and care-management segments as well as quality analytics. Market access, support for research and development, medical affairs, and patient services are among the growing segments in life sciences (Exhibit 1).

The five essential competencies

HST vendors could distinguish themselves by developing five key competencies. These competencies are relevant regardless of an HST company's size or segment—whether it is a niche vendor that offers point solutions for only one or

two segments in one market or a large, multifunctional vendor that offers solutions to multiple industry segments and markets (see Sidebar, “How HST companies can grow”).

1. Access to diverse healthcare data

Access to a variety of data sources is among the foundational requirements for HST vendors. The analytical capabilities often associated with healthcare technology vendors would be useless without access to underlying data sets. The “secret sauce” lies in the diversity of data in terms of their type (structured and unstructured), volume (number of lives and

number of distinct data elements), and variety (for example, claims, clinical, and social determinants of health). The more diverse and proprietary the data are, the greater the opportunity to generate distinctive insights. The diversity of data must also be easy to access: several organizations with massive amounts of data still struggle because of compartmentalization and silos, which prevent integration at scale. It also can impede extracting insights.

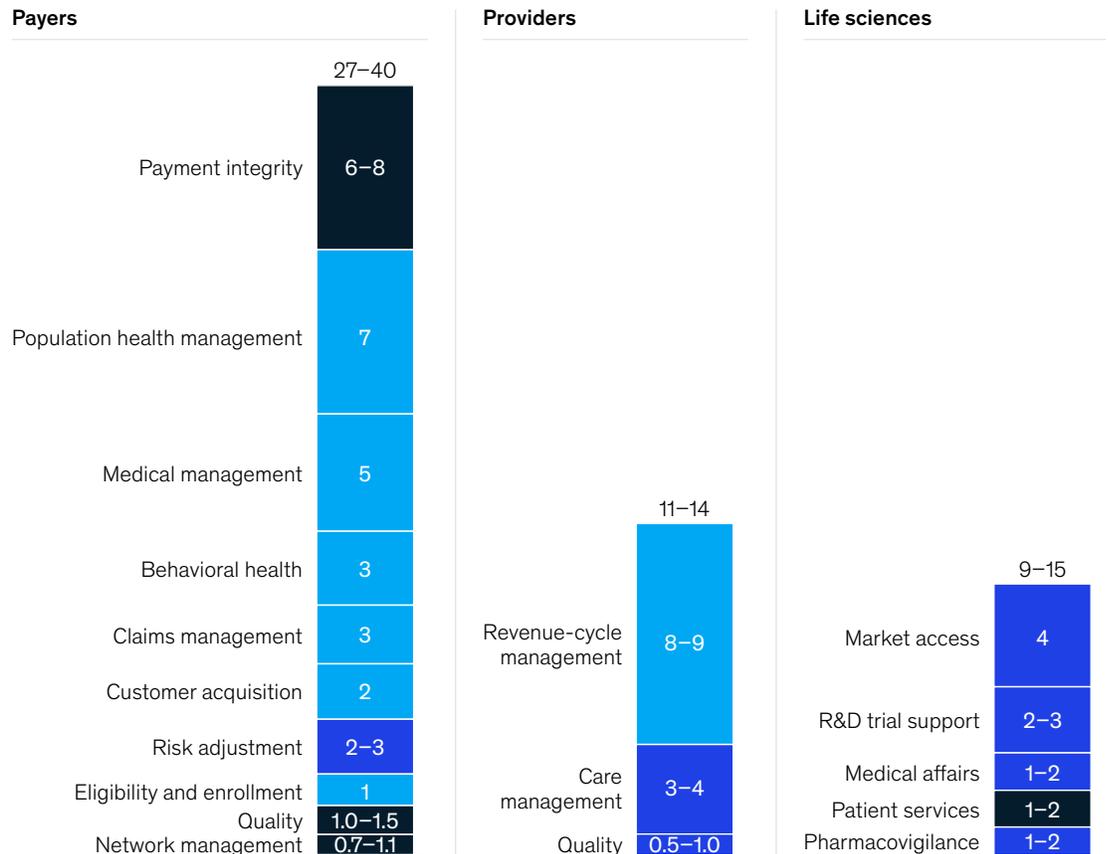
To begin forming a full picture of overall spending and opportunities to reduce it, vendors could draw on both core and supporting varieties of data:

Exhibit 1

Growth of selected segments that are commonly outsourced expands the total available market (TAM) of healthcare data and analytics vendors.

2018 TAM, \$ billion

2018–23 projected growth rates, %: ■ 0–5 ■ 5–10 ■ >10



Source: McKinsey Health Services and Technology profit pools; McKinsey analysis

- **Core-data sources.** Data from claims, electronic medical records, pharmacies, and labs form the traditional view of the patient and are the basis for concrete and reliable insights about the patients and patient types that underpin the data.
- **Supporting-data sources.** Social determinants of health (SDoH), patient-reported outcomes, consumer-coverage data, contract data, and others sources can create a more robust view of the patient that incorporates aspects outside the traditional health system.

In the risk-adjustment market segment, for example, an HST vendor may generate patient-level risk profiles by analyzing claims data and electronic medical records and then use SDoH and behavioral-health information to form an even more robust understanding of a patient’s risk profile. As a well-understood example, a smoking habit may increase the likelihood of the occurrence of cancer for a given patient.

2. Data aggregation for longitudinal member records

Organizations across the healthcare industry increasingly require an all-encompassing view of each individual

Sidebar

How HST companies can grow

HST vendors’ moves may differ, depending on whether they are new or more established in the marketplace.

Early-stage HST companies

For early-stage vendors, picking the right use cases is critical. Delivering successful proof-of-concept pilots provides the dual benefit of demonstrating the potential value of a scaled-up program and outlining the requirements for a multipurpose data and analytics platform.

To build the proof-of-concept pilots, HST vendors could consider launching a small, cross-functional team to run short sprints of use-case development in an agile fashion. Ideally, this team would include a business translator, a data scientist, a user-interface and experience designer, and a full-stack developer. To manage costs, pilot programs should be developed with best-in-breed open-source tools—such as off-the-shelf platforms, user-testing ecosystems, and code or data libraries. During the development, customer feedback should be solicited as often and as early as possible.

Mature HST companies

More mature vendors are likely to have broader ambitions: to scale analytics capabilities across the organization, digitize core business processes—internal and external—rapidly enhance existing solutions through analytics, and increase the rate of use-case delivery.

Scaling analytics would require them to establish a robust data strategy (including data ontology, master data management, data governance, and a data environment), an effective talent strategy, and the right operating model to ensure that the business, IT, product, and analytics teams work in unison.

It would also be helpful to build a comprehensive use-case roadmap and focus on the prioritized set of use cases during the first wave of development. Because the adoption of use cases is often the hardest in the last mile, the organization may benefit from establishing clear decision-making rights and accountability and empowering the front lines to make analytics-based decisions.

Translating data into useful insights requires techniques that are at the forefront of advanced and predictive analytics.

with a single source of truth and a longitudinal understanding of that patient's history. Tracing both diagnoses and outcomes can allow payers to price risk more accurately and coordinate care and reduce costs, health systems to deliver better care and preventive treatment, and life-sciences companies to better develop and promote certain treatments. For example, information captured at the crucial intersection between patient and doctor can have huge value when aggregated and analyzed at scale.

Quality longitudinal data possess three core characteristics:

- **Long duration.** Leading HST vendors are able to provide ten or more years of longitudinal data to give a view of current and previous conditions and treatment.
- **Continuity.** Patients are likely to have received support from multiple health systems and payers. The most capable vendors are generally those that can stitch together data from both payers and health systems—for example, by combining a single patient's claims data from multiple payers and clinical data from health systems.
- **Granularity.** To create a complete picture of the patient, the information should also be granular—for example, sourcing lab results of an individual at various levels of detail.

Building the data-aggregation service often requires a unique methodology and intellectual property for linking and enriching the variety of data sets that HST vendors have. This might include expand-

ing unstructured data analysis at scale, increasing the diversity of inputs for longitudinal patient journeys, building fully operational and centralized or scalable data platforms on-premise or on cloud. Using patient-identification techniques to consolidate records and building standard data models and pre-packaged analytics, for instance, could improve efficiency and quality of insight generation. Data and analytics marketplaces could further spur innovation, reducing the transactional friction between data and analytics, and generate additional insights. At the same time, HST vendors must also keep in mind HIPAA regulations and other privacy guardrails.

While healthcare companies are still pushing to achieve full interoperability when it comes to data aggregation—and with good reason⁶—HST vendors can potentially offer meaningful solutions and insights to their clients within the framework of existing interoperability standards and structures. HST vendors could focus on the seamless integration of data from the variety of internal and readily available third-party data sources (for example, National Institutes of Health data or data from health information exchanges) before seeking to solve broader interoperability challenges. Solutions focused on addressing current internal challenges can expedite solutions for the next challenges of interoperability.

3. Advanced analytics

Translating data into useful insights requires techniques that are at the forefront of advanced and predictive analytics—for example, machine learning for predictive modeling, next-best-action analytics,

natural-language processing of unstructured data, automated insight generation through an embedded platform, and integration of data mining across multiple data sets.⁷ HST vendors may need more specific analytics capabilities, depending on the market or segment they are targeting—actuarial analytics to support network design and value-based contracting work, for example, or financial-data analytics to support revenue-integrity activities.

To apply analytics to underlying data sets, a vendor needs the ability to ingest and translate data from a variety of structures, ranging from paper medical records to digital-claims flows to data scraped from the internet. Moreover, leading HST vendors ingest and translate information at scale and in real time. On behalf of a payer, for example, they could run real-time analysis of large data sources to determine the integrity of prospective payments or create a market-access feedback loop for a life-sciences company.

Access to analytics capabilities is becoming increasingly democratized. For example, many cloud platforms now provide deep analytics without the huge upfront investment that traditional servers require. Nevertheless, vendors with strong data-science, data-engineering, data-architecture, and business-translator talent in-house can best deploy different analytics techniques and algorithms to make the consumption of insights customer friendly. This ability alone is not enough, however; the analytics and algorithms are ultimately only as good as the underlying data.

4. Multidomain intelligence and expertise

Payers, health systems, and life-sciences companies look to HST vendors to provide more than access to data and analytical firepower. An “enterprise content library” can mix data and insights, creating deeper healthcare-industry expertise within individual markets and across multiple markets. In an ecosystem model,

vendors are likely to need expertise in multiple areas that will enable them to uncover patterns and insights that a siloed vendor would be unable to see. This competency extends beyond just having access to the data and into building proprietary intelligence and insights across the multiple lines of businesses that HST vendors serve.

In the case of payment integrity, for example, multiple vendors review the flow of claims for payment errors. This review includes the application of medical content (in other words, the translation of medical guidelines to identify improper treatments or incorrect prescription dosages) to a payer’s claims flow. In our experience, few HST companies possess the acumen to blend quality and risk scores with payment data. This ability to reliably generate rules based on evolving medical standards while also providing supporting evidence to defend the rules is a key distinguishing factor between vendors.

5. Workflow integration

A final point of differentiation is workflow integration. This involves letting core business practices become embedded with insights into day-to-day workflows. When insights are easy and actionable, customers are more inclined to use them. If insights are not embedded in a customer’s workflow—ideally, at the click of a button—the customer’s employees must expend extra effort, making them less useful. Solutions that can seamlessly push insights into business processes and workflows better enable employees to find value.

Putting it all together

Combining the five capabilities is important for any HST vendor, regardless of whether its market is payers, health systems, life-sciences companies, or all three. A vendor could use these capabilities to develop new revenue pools by going deeper into its existing client base

or broader into adjacent market segments, or both (Exhibit 2).

This is a critical moment for HST companies. Increasing competition, market demands, and data availability and complexity are

making clear that more investment in digital technology and data analytics capabilities is no longer a luxury but a necessity. Now is the time for senior executives of leading HST companies to aggressively develop the five digital technology and data-analytics capabilities if they wish to sustain and build competitive advantage.

Exhibit 2

A health services and tech vendor can broaden and deepen its market by using the five core competencies.

Illustrative use cases

		Payers	Providers	Life sciences
Market segment	Current offering	Retrospective risk adjustment	Quality management	Real-world evidence supporting medical affairs
	Expansion within market segment	Prospective risk adjustment	Utilization management	R&D trial support, new indications for existing products, market access
	Expansion to adjacent segment	Site selection for medical trials (life sciences)	Real-world evidence for medical affairs (life sciences)	PHM ¹ (payers), physician performance management (providers)
Core competency	1 Access to diverse healthcare data	Core/noncore data sets, to fully understand patient's condition	Integration of benchmarking and operational data sources	Variety of data to "bring patient to life"
	2 Data aggregation for longitudinal member records	Longitudinal view, to better correlate profiles that lead to risk over time	Ability to plan for changes in optimal resourcing over a patient's journey	Demonstration of ties between treatments and outcomes
	3 Advanced analytics	Identification of suspect analytics, to identify likely undiagnosed comorbidities	Automated generation of insights	Data mining for relevant patients and outcomes
	4 Multidomain intelligence and expertise	Knowledge of how best to navigate provider networks, to retrieve medical records	Integration of insights to allow delivery of insights in a live setting	Application of knowledge to determine whether data patterns are signals or noise
	5 Workflow integration	Adjustment information for payer systems	Integrated electronic medical records	Easy dissemination to providers and provider networks
Revenue pool (\$ billion)	Current revenue pool	1–1.5	0.5–1	1–2
	Additional revenue pool via expansion within market segment	1–1.5	1–2	2–4
	Additional revenue pool via expansion to adjacent market segment	2–4	1–2	5.5–7

¹ Population health management.

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² Ibid.

³ Shubham Singhal, "Seven healthcare industry trends to watch in 2020," February 6, 2020, McKinsey.com.

⁴ Sean Day and Elena Gambon, "In 2019, digital health celebrated six IPOs as venture investment edged off record highs," *Rock Health*, 2020, RockHealth.com.

⁵ McKinsey Rock Health database.

⁶ Zachary Greenberg, Basel Kayyali, Rob Levin, and Shubham Singhal, "The next wave of healthcare in innovation: The evolution of ecosystems," June 23, 2020, McKinsey.com.

⁷ "Analytics comes of age," January 2018, McKinsey.com.