



White Paper

Digital Technology Promises to Improve Productivity in Healthcare Workforce

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Common experience acquaints Americans with the problem of healthcare productivity. On the one hand, the cost of healthcare has risen inexorably since approximately 1980. On the other hand, the output or outcomes of healthcare activity have remained relatively static. The U.S. Bureau of Economic Analysis estimates that in 2015, U.S. healthcare cost 4.8 times more than it did in 1980, while medical insurance cost 8.7 times more than it did in 1980.¹ Although there have been improvements in behavior patterns (e.g., smoking cessation) and innovation (e.g., pharmaceuticals and medical devices), mortality rates are similar. For working-age Americans, some measures such as disability rates have even worsened. Important subjective and objective measures of health indicate that Americans have failed to reap benefits commensurate with increasing healthcare outlays.

Introduction

Productivity in the healthcare industry may actually have declined in recent decades. Despite rising expenditures for labor and other inputs, a *Harvard Business Review* article in 2013 stated succinctly that "the number of patients doctors are seeing and whose care they are managing hasn't increased."² Debates about the appropriate measurement of productivity in healthcare will likely continue, but "many analysts believe that, regardless of what healthcare productivity has been in the past, there is great potential for healthcare productivity to increase in the future."³

Digitally enhanced technology is an important lever for improving the results of the productivity equation. An expanding universe of data complements increasingly sophisticated digital tools and services, paving the way for advances in predictive analytics, artificial intelligence, and even robotics. Such technology offers healthcare payers and providers many opportunities to augment labor across a broad spectrum of skills, from claims processing to patient care.

¹ *No Recovery: An Analysis of Long-Term U.S. Productivity Decline*, Gallup for U.S. Council on Competitiveness, 2016

² "The Downside of Health Care Job Growth," *Harvard Business Review*, September 23, 2013

³ *Summary of Healthcare Productivity Symposium*, Brookings Institution, May 3, 2016

Approach

An explicit and integrated approach is recommended to healthcare organizations (HCOs) that evaluate IT solutions and associated services that aim to improve the productivity of human resources. Ad hoc efforts may not have a long-lasting impact on productivity. Eliminating unnecessary or redundant care, for example, can yield excellent short-term results, but such efforts do not affect the productivity phenomenon by lowering the cost of the care that patients need, when and where they need it.

Key dimensions by which vendors and their offerings may be evaluated are as follows:

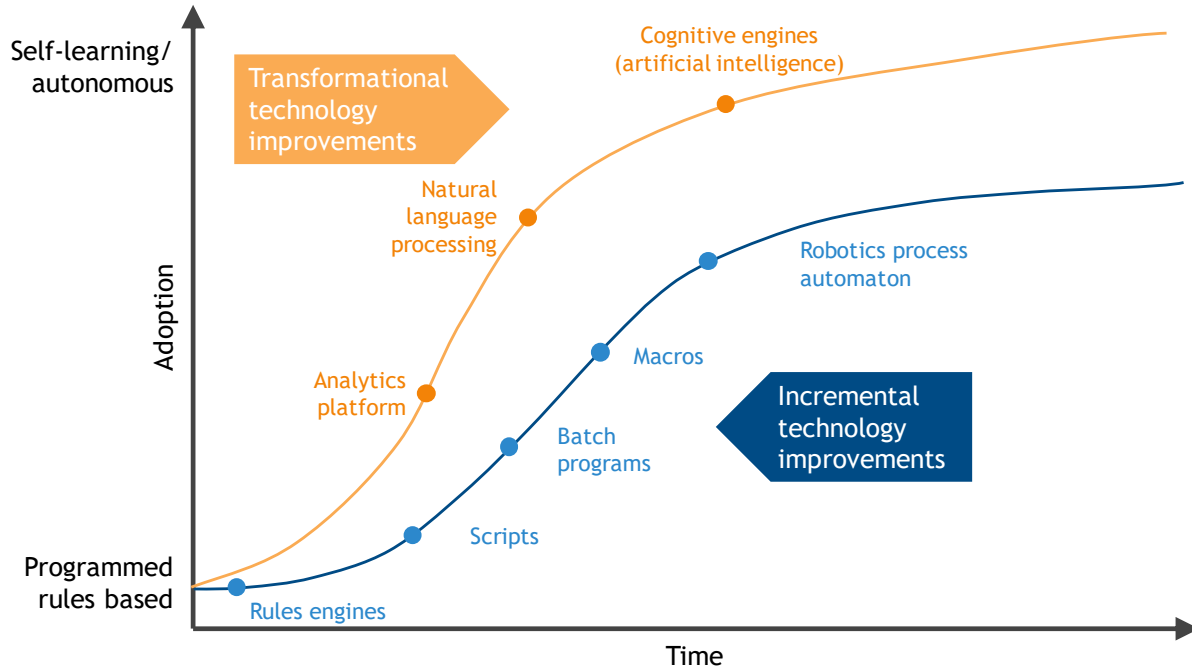
- **Quantum cost reduction that requires a holistic perspective and approach:** Incremental improvements are possible through piecemeal application of data collection, process reengineering, analytics, or workflow and workforce restructuring. Holistic solutions aimed at integrating activities across functions or therapeutic areas are more likely to improve productivity.
- **Consumer engagement:** Payers are advised to think across silos to integrate activities that touch the consumer, member, or patient. Integrating these views could reduce the frequency and cost of contact but could simultaneously increase the potential effectiveness of contact.
- **Restructure and augment clinical roles:** Providers are advised to restructure and augment the roles of workers in the clinical environment. "This solution implies eliminating myriad time-wasting, low-value activities; increasing our use of technology, data, evidence, and teams; increasing standardization to avoid rework; and relying on evidence-based personalized care to avert complications."⁴
- **Value-based alignment of incentives to extend across payers, providers, and IT vendors:** The delivery and administration of outcomes-based care requires all parties to share risk:
 - As value-based business models become dominant, payers, providers, and IT vendors will increasingly integrate overlapping functions. This can be particularly evident in revenue cycle management and payment integrity processes and roles. Payers and providers will also ask technology vendor partners to share risk in better-integrated, longer-term relationships.
- **Capabilities to accelerate progress up the intelligent automation maturity curve:** Healthcare organizations have to plan, budget, and contract with each other and with external IT vendors with a view to advancing their capabilities steadily up the maturity curve of intelligent automation:
 - A planned, managed approach is more likely to yield productivity improvements through flexibly scaled solutions and services that augment and enhance worker skills.

Figure 1 illustrates the maturity curve for intelligent automation for healthcare organizations.

⁴ "Rethinking Health Care Labor," *The New England Journal of Medicine*, October 13, 2011

FIGURE 1

Maturity Curve for Intelligent Automation for Healthcare Organizations



Source: Accenture and IDC Health Insights, 2017

Benefits

The adoption of intelligent automation technologies and services directly addresses productivity challenges. Healthcare organizations that seek to improve the accuracy, quality, speed, cost efficiency, flexibility, and adaptability of their operations may consider an example from Accenture's experience at a large national payer organization.

Accenture Payer Industry Case Study

In recent years, Accenture has leveraged robotics process automation (RPA) to realize operational improvements for a national commercial health insurance carrier. RPA technology has played a vital role in helping Accenture and its client innovate and improve the speed, efficiency, and quality of important client-facing processes. These processes include customizing the contracts signed by the carrier and its clients (specifically large employers), onboarding new members, and servicing ongoing client (employer) and member (employee) needs.

According to the health insurance company executive overseeing the relationship with Accenture, "We have blended our requirements for innovation with Accenture's RPA ideas to take the manually intensive component of specific processes out of the equation. This has reduced the cost and increased the speed and quality of operations by up to 5% per year in affected processes." The carrier executive expects the rate of process improvements to increase in the future as RPA capabilities grow.

The carrier executive explained the implementation of Accenture's RPA as follows: "We gather insights from people on the floor on how to build a better mousetrap. Accenture then ideates on how to build a better [software] engine, and then the ideas are tested to see how our capabilities might improve. Typically, head count, quality, and efficiency are the metrics of success." For example, new software macros have helped the carrier streamline the contract buildout process used with new clients: "We now use these macros to look for common language among contracts used in prior agreements, which helps us construct new contracts with greater quality and speed."

The carrier executive credits his company's increasing use of RPA technology to two factors. First, Accenture and the carrier have purposefully altered their relationship to incent Accenture to focus on business outcomes and innovation rather than on transactions or head count. Second, Accenture and the insurance carrier have learned to collaborate better to identify and overcome challenges to the implementation of new RPA concepts at earlier stages of ideation and testing. For example, in the past, HIPAA-related security concerns delayed the implementation of successful RPA ideas by up to 18 months. Leveraging experience, such obstacles are now being managed more effectively.

Trends

- **Growing prevalence of and cost of treatment for chronic diseases:** According to the CDC, "Chronic diseases are responsible for 7 of 10 deaths each year, and treating people with chronic diseases accounts for 86% of our nation's healthcare costs." In the United States, the healthcare costs imposed by chronic diseases are estimated at trillions of dollars a year, and these costs are rising.⁵
- **Rising healthcare employment and compensation:** The costs of both skilled and unskilled labor are rising quickly. According to a July 2016 article in *Health Affairs*,⁶ "The compensation of physicians and nurses alone, which accounted for 42% of total sector labor compensation across the [hospital, clinic and outpatient] sectors and 1.24% of the overall U.S. GDP in 1997, rose to 46% of total labor compensation and 1.56% of GDP by 2012.
- **Focusing on value-based care:** The historically predominant fee-for-service business models are being replaced by risk-sharing models based on integrated, team-based care. Such care requires increasingly sophisticated access to and analysis of data. Efficient and accurate operations in this digitally enhanced environment increasingly require automated digital tools and methods. Value-based contracts are becoming more common not only between payers and providers but also between healthcare organizations and their IT vendors.
- **Increasing availability of "as a service" technologies:** Powerful, cost-efficient, and easy-to-use hybrid IT software/services solutions are increasingly available on a subscription or "as a service" basis that reduces the need for capital outlay while flexing to match operational or capacity needs.
- **Rising quantities of healthcare data:** Structured and unstructured data is available at exponentially growing rates. This includes clinical and financial data associated with electronic health records. IDC estimates that over 2,000EB of data will have accumulated by 2020.⁷
- **Continuing shortage of data scientists:** A shortage of data scientists who have worked with healthcare data continues to constrict the capacity of healthcare organizations to improve productivity and advance the maturity curve of their automation technologies.

⁵ *Checkup Time: Chronic Disease and Wellness in America*, Milken Institute, January 2014

⁶ "Where the Money Goes: The Evolving Expenses of the U.S. Health Care System," *Health Affairs*, July 2016

⁷ More information is available at www.cio.com/article/2860072/healthcare/how-cios-can-prepare-for-healthcare-data-tsunami.html.

Vendor Profile

- **Breadth of IT services for a wide range of payers and providers:** Accenture works within a variety of horizontal enterprise functions, organizational models, and business models and with a wide spectrum of automation technologies:
 - In the provider environment, this would include a variety of delivery modes such as hospitals and ambulatory care, numerous therapeutic areas, and horizontal functions such as IT, supply chain management, care management, and finance.
 - In the payer environment, this would include claims operations, marketing, enrollment, provider network management, and case management processes within the context of the individual markets (and exchanges) as well as the payer's employer-based business.
- The following are Accenture's offerings to healthcare clients related to productivity improvement:
 - Clinical and Health Management Services
 - Health Administration Services
 - Health Enterprise Operations
- **Integration of automation technologies on maturity curve:** Accenture helps organizations implement individual technologies and program manage progress up the productivity and automation maturity curve.
 - **Dynamic response to evolving solutions and strategies:** Accenture manages, integrates, and assesses the quality of diverse data sets. Cloud-based solutions support demanding workloads and allow in-database processing of analytical models at the point of decision.
 - **Proprietary automation methodology:** Accenture uses the CORD methodology to help organizations identify ways in which they can copy various types of data into a single repository, create ongoing processes for making objective decisions and repetitive tasks, and convert data to digital form.

Challenges

HCOs frequently experience challenges in the following dimensions:

- **Solution-focused silos:** Narrowly defined solutions based on an implementation stage or an isolated technical problem may result in inefficient, redundant, or inaccurate operations.
- **Enterprise incoherence:** Unsynchronized, contradictory implementation of initiatives limits the execution of the healthcare organization's enterprise strategy and development of capabilities.
- **Misalignment of incentives:** Effective sharing of risk at appropriate scale requires strategic partnership, transparency, benchmarking, and measurement of performance-based SLAs.
- **Ad hoc or opportunistic progress up the maturity curve:** Systematic and continuous adoption of intelligent automation requires transparent partnership and joint adoption of best practices.
- **Personnel with deep experience:** Personnel with necessary skills are in limited supply. Experts in both content (statistics, population health, etc.) and process (cleansing, configuring, monitoring) are difficult to attract, train, and retain.

Conclusion

As noted in the previously cited July 2016 *Health Affairs* article, "Overall, technological changes in the [healthcare] sector have favored, rather than substituted for, those [professionals] with high skills." In the future, however, the digital tools and methods required to reverse this trend and substantially augment the productivity of skilled and unskilled labor will be increasingly available to healthcare organizations and technology vendors. In the clinical context, such technology includes analytics that can be used at the point of care. In the payer context, it includes robotic process automation.

Healthcare executives tasked with overcoming productivity challenges frequently find their own organizations lack the capabilities they need to advance beyond the ad hoc or opportunistic adoption of intelligent automation. Therefore, HCOs seek partnerships with IT vendors that offer suitable capabilities across the following dimensions:

- **Breadth and depth in functional healthcare operations:** Just as reform and the transition to outcomes-based medicine have made all the components of the healthcare ecosystem more interdependent, IT vendors have been challenged to bring a better integrated and more holistic set of offerings to HCOs. Accenture offers expertise, technology solutions, and ongoing service support across payer and provider functional areas.
- **Capabilities to effectively share risk:** Performance or outcomes-based care requires special skills not only from HCOs but also from their IT vendors. Accenture aligns incentives and strategies with those of its clients; demonstrates appropriate contracting and legal skills, account management, performance benchmarking, analytics, and monitoring; and has a long-term partnership perspective founded on notions and methodologies of continuous improvement.
- **IT solutions and services that accelerate adoption of intelligent automation:** Progress on the maturity curve requires a full set of data, software, and services expertise. These include capabilities for gap identification; workflow, skill set, and organizational restructuring; and long-term services support. Accenture offers a range of capabilities needed to achieve dynamic, scalable solutions and supporting services.

Quantum improvements in the healthcare industry's quality, cost, and access require improvements in productivity. Productivity improvements can be achieved through judicious applications of intelligent automation. However, significant progress up the maturity curve of intelligent automation requires sustained investment and coordination among stakeholders. IT vendors such as Accenture demonstrate expertise in accelerating healthcare organizations in that progression toward achieving the ultimate promise of predictive analytics, artificial intelligence, and robotics.

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