

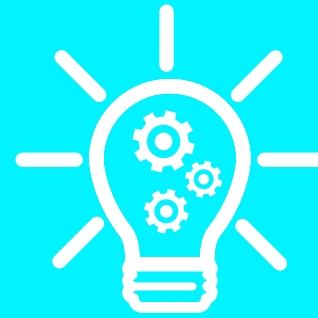
# HEALTHCARE: **WALKING THE AI TALK**

ACCENTURE SURVEY SHOWS HEALTHCARE ORGANIZATIONS BELIEVE IN ARTIFICIAL INTELLIGENCE, AND THEY ARE LEADING THE WAY IN ADOPTING MACHINE LEARNING-ENABLED PROCESSES.

**Artificial intelligence (AI) is evolving at speed. Smart machines are reinventing how work is done across industries. Companies across sectors and regions are seeing an initial boost in process speed and performance by implementing AI technologies. However, there is significant untapped potential in reimagining business processes from the ground up as self-improving procedures that can sense, comprehend, act and learn—all in real time.**

Until now, many business leaders have taken too narrow a view of AI. To maximize the potential of AI and be digital leaders, healthcare organizations must reimagine and reinvent their processes from scratch—and create self-adapting, self-optimizing “living processes” that use machine learning algorithms and real-time data to continuously improve. Machines themselves will become agents of process change, unlocking new roles and new ways for humans and machines to work together.

This is the era of “process reimagined.” It is already delivering profound results across industries. Surprisingly, healthcare is at the forefront of this burgeoning trend.



## **MACHINE LEARNING VS. AI**

Machine learning is a subset of artificial intelligence that provides software, machines and robots the ability to learn without human intervention or assistance, without static program instructions.

Machine learning has been used to generate personalized product recommendations to consumers, identify the root cause of quality problems and fix them, discover and recommend treatment options to physicians, and in numerous other applications.

**Machine learning-enabled processes** rely on software, systems, robots or other machines which use machine learning algorithms.

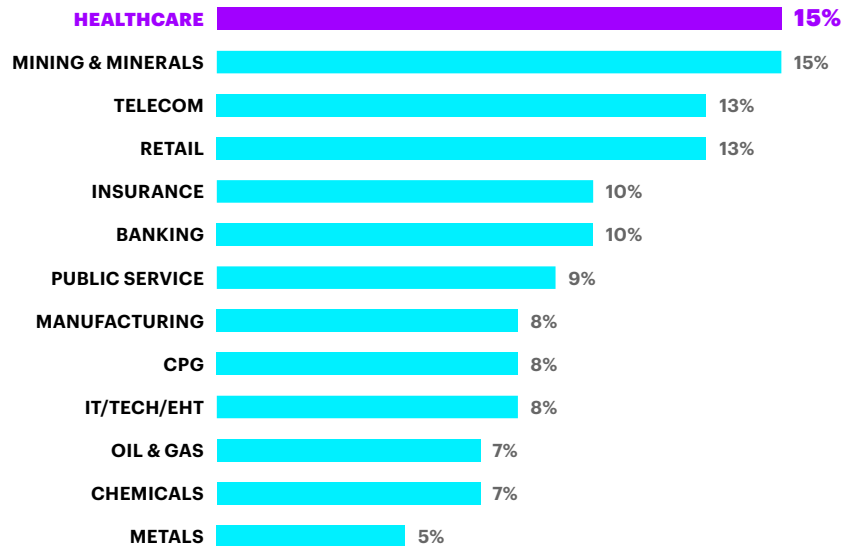
# HEALTHCARE IS LEADING THE WAY IN AI AND SEEING THE BENEFITS

Among the 13 industries included in the Accenture 2017 Process Reimagined Survey, Healthcare is tied with Mining and Minerals for No. 1 overall (see Figure 1). Retail and Telecom follow close behind. Healthcare ranks No. 1 in Process and Data.

About 15 percent of healthcare companies (US payers, providers and pharmacy benefit managers) are applying machine learning across three dimensions: Process, people and data (see Figure 2). These healthcare respondents in the process reimagined phase are moving beyond automation to take full advantage of AI. The process reimagined average across all industries surveyed was 9 percent.

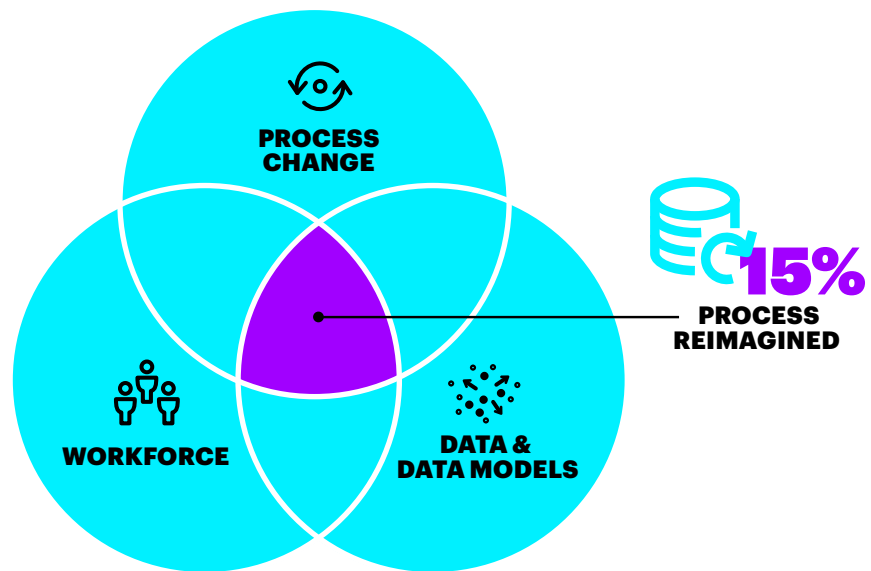
Among healthcare organizations surveyed, 42 percent are using machine learning to reimagine processes and process change. Furthermore, 42 percent of US healthcare firms surveyed say they are using machine learning in at least one business process and 42 percent are using it to transform the human-machine work relationship. More than half (52) percent are harnessing data to create exponential improvements in speed and KPIs.

**FIGURE 1.** Healthcare ranks at the top among industry use of AI



Source: Accenture 2017 Process Reimagined Survey

**FIGURE 2.** Leading organizations are applying machine learning across three overlapping dimensions



Source: Accenture 2017 Process Reimagined Survey

# SEIZING VALUE THROUGH MACHINE LEARNING-ENABLED PROCESSES

Some AI initiatives are pilots and therefore deliver benefits on a small scale. But healthcare organizations are thinking bigger. Many report that machine learning-enabled processes are reducing costs/improving revenue and also improving KPIs.

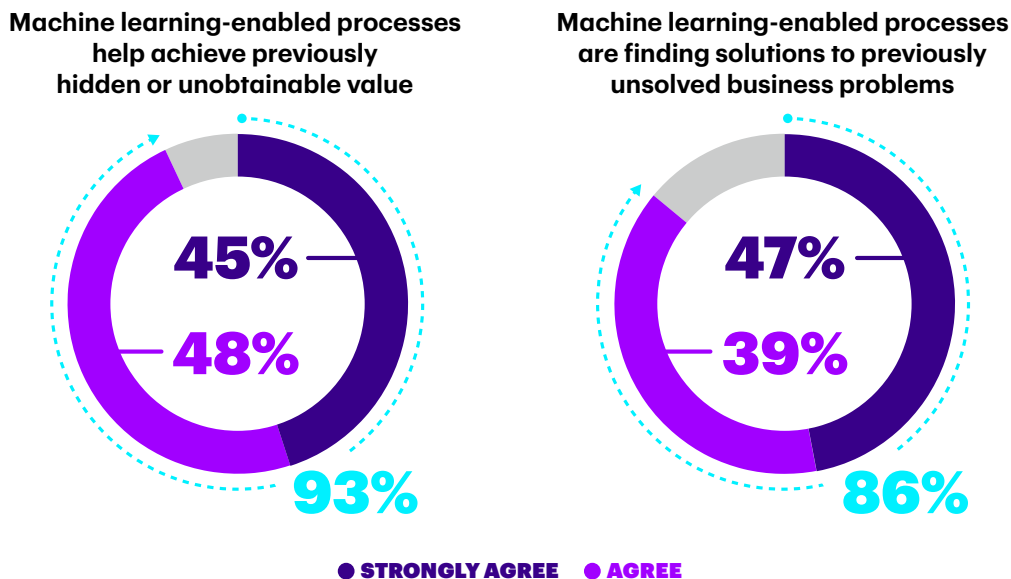
More than half (51 percent) of healthcare organizations say that machine learning-enabled processes have helped to reduce costs to “service products after sales” by at least 50

percent. Many healthcare respondents (65 percent) say they have improved revenue by 10-20 percent by using machine learning-enabled processes to “understand markets, customers and capabilities.”

Almost all healthcare respondents (93 percent) “strongly agree” or “agree” that machine learning-enabled processes help achieve previously hidden or unobtainable value and 86 percent believe these processes

are finding solutions to previously unsolved business problems (see Figure 3). A majority (91 percent) are seeing 200 percent improvement in KPIs in enterprise processes, and 77 percent are doubling KPIs for sales and marketing in the front office.

**FIGURE 3.** Healthcare organizations agree that machine learning-enabled processes deliver benefits



Source: Accenture 2017 Process Reimagined Survey

# BROADENING PERSPECTIVE ON AI OPENS UP NEW POTENTIAL IN HEALTHCARE

Healthcare leaders can use AI to reimagine new processes rather than simply automating existing processes. While automation often brings a short-term jump in productivity and speed, these benefits will level off if the focus remains on process automation rather than reinvention.

Digital leaders will reimagine and reinvent their processes, creating “living processes” that use machine learning algorithms and real-time data to continuously improve.

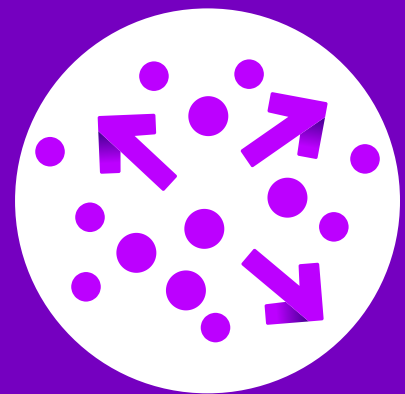
The leaders in the process reimaged phase are focusing on three overlapping areas:



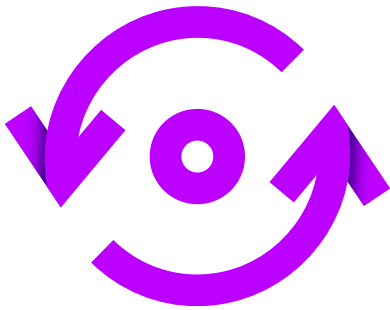
PROCESS



DATA



WORKFORCE



# 1. PROCESS CHANGE: REIMAGINING PROCESSES FROM SCRATCH

## FORTY-TWO PERCENT

of health organizations are reimagining processes by:

- **Applying artificial intelligence to process change management**
- **Rethinking standardized processes as continuously adaptive**
- **Bringing AI-based change to multiple processes across the enterprise**

Health respondents in significant numbers are using or piloting machine learning-enabled processes across several business process categories (see Figure 4).

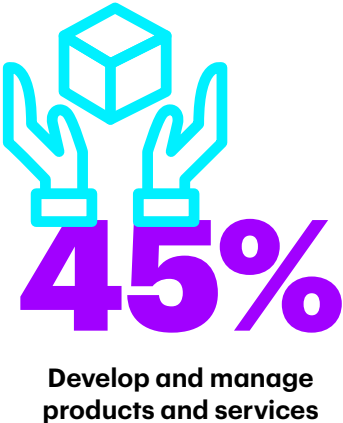
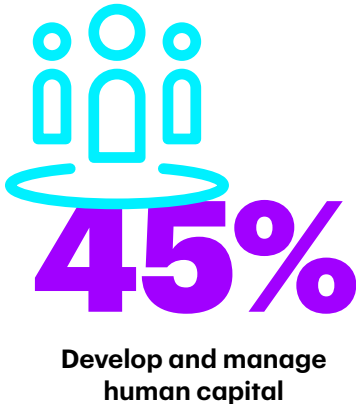
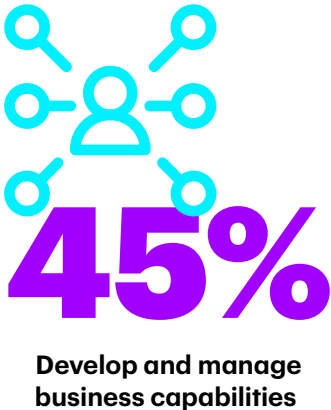
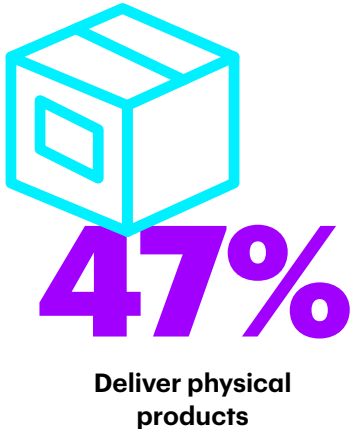
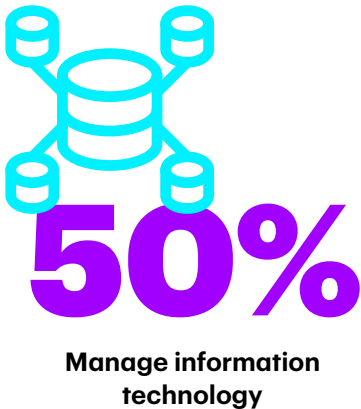
Multiple use cases show that artificial intelligence is being applied in health-specific processes such as supporting clinicians in preliminary diagnosis and treatment, and even generic enterprise processes such as sales, pricing and enterprise operations. Supported processes include:

- **Personalized patient care**
- **Clinical connectivity**
- **Security and compliance**
- **Enterprise operations**

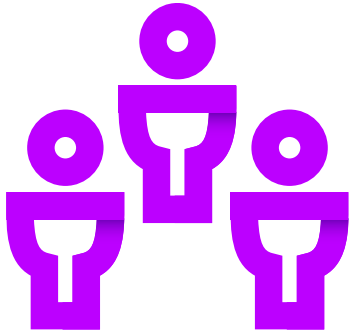
**Ayasdi** uses machine learning to analyze electronic medical record data and perform clinical variation management for common surgical procedures. The platform automatically surfaces groups of similar patient procedures and generates clinical pathways that could result in better patient outcomes at lower costs.



**FIGURE 4.** Healthcare companies are pursuing machine learning across a variety of processes



Source: Accenture 2017 Process Reimagined Survey



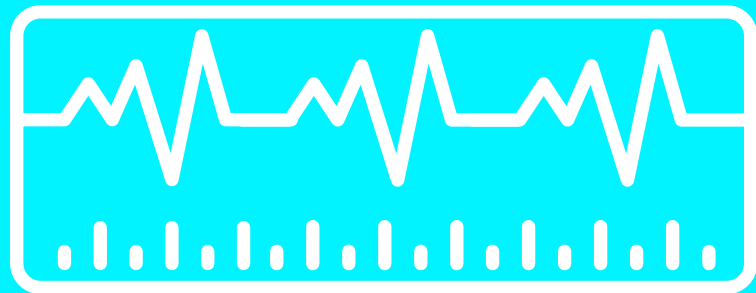
## 2. DATA AND DATA MODELS: CAPTURING THE EXPONENTIAL POWER OF DATA

### FIFTY-TWO PERCENT

of health organizations are harnessing data to create exponential improvements in speed and KPIs, help solve previously unsolved problems and see patterns that were previously hidden. There are doing so by:

- **Using data to train and sustain process change**
- **Making processes self-adapting and self-optimizing**
- **Discovering new patterns of opportunity**

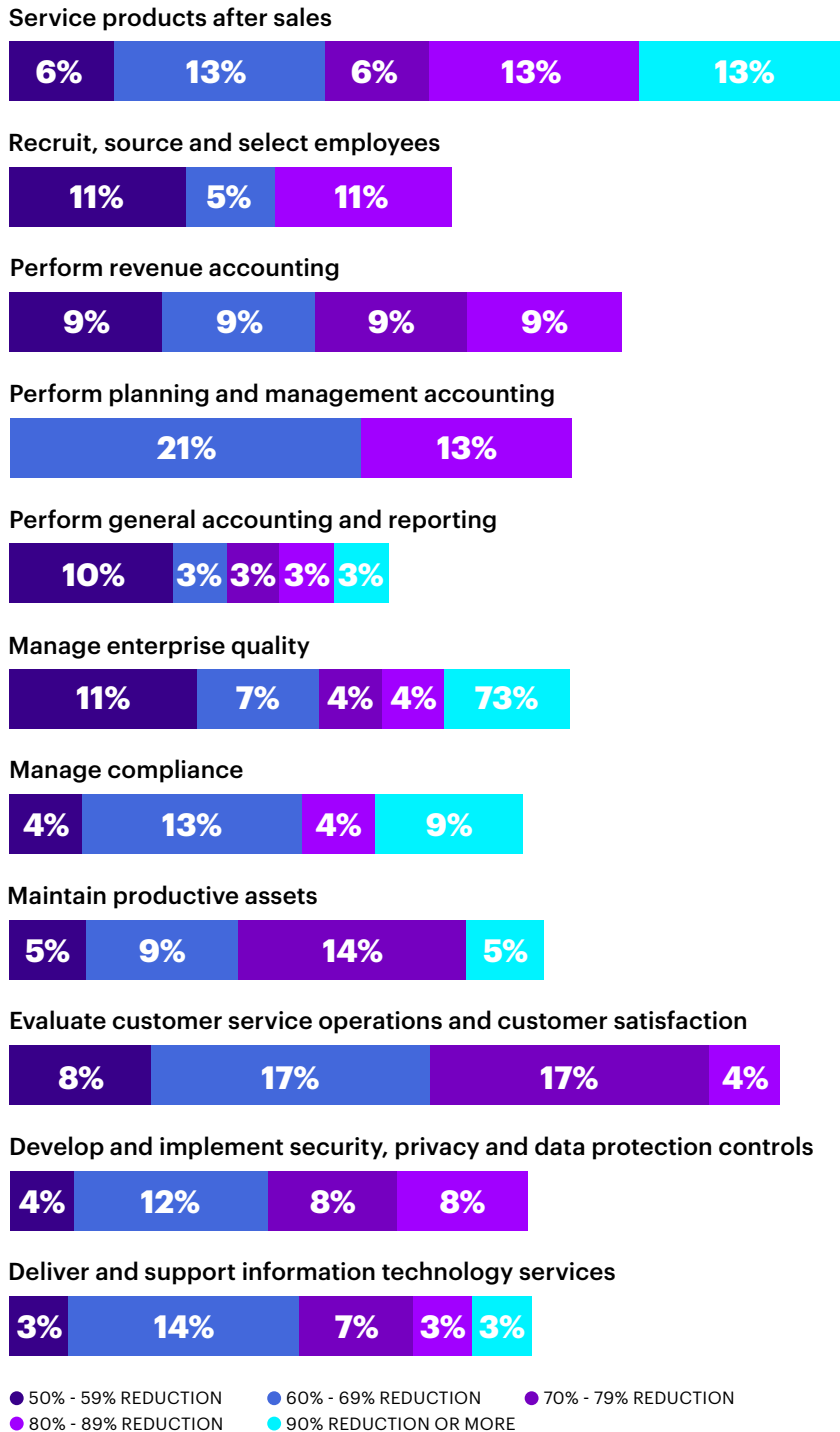
Healthcare respondents reported experiencing a variety of benefits from using machine learning-enabled processes, including cost savings across several processes (see Figure 5).



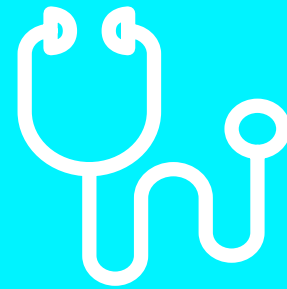
**Tampere City Department of Social Services and Health Care** (Finland) built a way to capture data in its facilities to help monitor patients, enhance the healthcare service provided, and improve onsite safety.



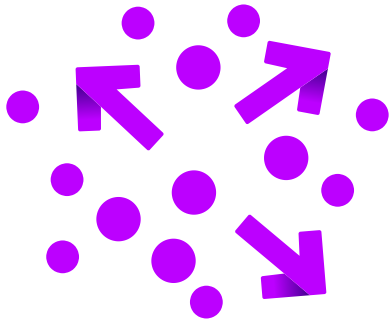
**FIGURE 5.** Machine learning-enabled processes reduce costs for healthcare organizations across several processes



Source: Accenture 2017 Process Reimagined Survey



**HealthTap**, a World Economic Forum Technology Pioneer, launched Dr. A.I., a personal AI-powered “physician” that translates a person’s symptoms into personalized, doctor-recommended courses of action. Dr. A.I. uses advanced deep learning algorithms and HealthTap’s vast repository of doctor knowledge and data to apply clinical expertise and guide patients to the right level of doctor-recommended care.



### 3. WORKFORCE: UNLOCKING THE FULL POTENTIAL FOR HUMAN/ MACHINE INTERACTION BY INVENTING NEW JOBS

## FORTY-TWO PERCENT

of healthcare organizations are redesigning jobs to emphasize distinctive human skills and human-machine augmentation. They are transforming the human-machine relationship by focusing on four areas:

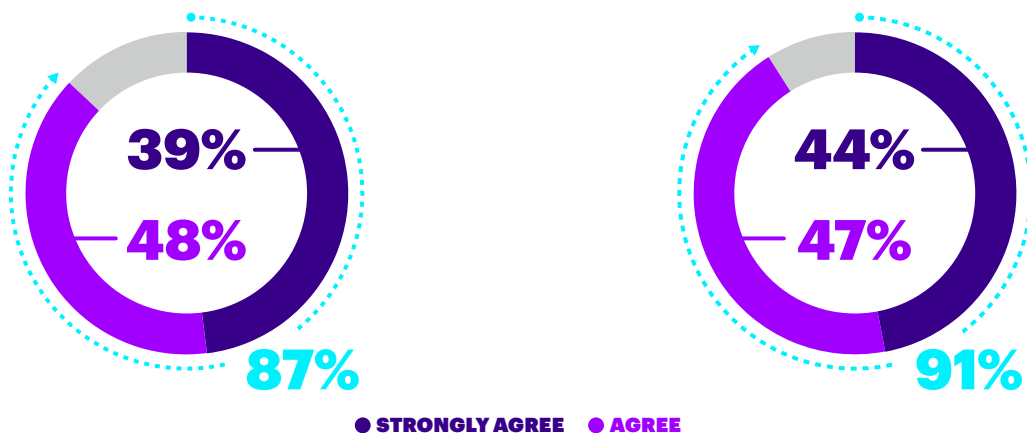
- **Enlisting the C-Suite to remake the culture with AI**
- **Helping employees keep pace**
- **Emphasizing distinctively human capabilities when hiring**
- **Making sure that algorithmic decisions are ethical, fair, safe and auditable**

A majority (82 percent) are investing in machine learning by hiring experienced machine learning talent from other companies to develop capabilities. Many are investing because they believe that machine learning-enabled processes will positively influence the future of work, for instance, allowing employees to do more and better work and enabling greater personalization (see Figure 6).

**Figure 6.** Healthcare organizations believe machine learning will affect the future of work

**Augmenting employees through machine learning will not only mean doing more and better work, but also managing far more process variability and unpredictability.**

**Just as products and services are becoming personalized to meet individual preferences, in the future, MLEPs will likewise personalize work.**



Source: Accenture 2017 Process Reimagined Survey

# **LEADING IN THE NEW ERA OF AI**

**Healthcare organizations have an opportunity to employ AI to make a systematic shift that affects every process, piece of data and worker. It is a new perspective encompassing strategy, technology and the future of work—one that differs dramatically from the notion of creating value through the substitution of human workers.**

**This new perspective requires innovation at speed and scale. And it requires unprecedented leadership vision with intentional shifts in process change, data and workforce. Healthcare leaders must foster organizational cultures of creativity, collaboration and data competency to capture the exponential power that is possible through AI. Perhaps most importantly, they must strengthen alliances between humans and machines to enable a future filled with growth.**

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## ABOUT THE ACCENTURE 2017 PROCESS REIMAGINED SURVEY

Building on an earlier pilot study, Accenture investigated where and how companies are applying artificial intelligence to manage and change business processes. We surveyed 1,075 process professionals from large global companies representing 13 industries and 15 countries in late 2016 and early 2017. Sixty-two respondents were from US payers, providers and pharmacy benefit managers.

This research was key in developing the insights in [Human+Machine: Reimagining Work in the Age of AI](#), published in March 2018 by Harvard Business Review Press and co-authored by Accenture's Paul Daugherty and Jim Wilson.

## ABOUT ACCENTURE INSIGHT DRIVEN HEALTH

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