# April/May 2020 Report

**Accenture acquires Ahmedabad-based big data company Byte Prophecy**
– May 18, 2020
https://economictimes.indiatimes.com/tech/ites/accenture-acquires-ahmedabad-based-big-data-analytics-company-byte-prophecy/articleshow/75800046.cms?from=mdr

- Accenture announced that they have acquired Ahmedabad-based **Byte Prophecy** – an automated insights and big data analytics company
- Financial terms were not disclosed
- This acquisition will result in an addition of nearly 50 data science and data engineering experts, with a focus on insight automation
- The suspect that this will help the company meet the growing demand for enterprise-scale AI and digital analytics solutions
- Businesses are increasingly relying on advanced analytics and AI to ensure insight driven, rapid decision making
- Byte prophecy was founded in 2011
- The two companies have worked closely since 2018 on open innovation efforts
- Over the past year, Accenture has made Applied Intelligence acquisitions in Australia, Spain, North America, and the U.K. to enhance its portfolio of technologies and help clients across the globe

**Predictive Analytics in Healthcare – May 5, 2020**
https://healthtechmagazine.net/article/2020/05/why-predictive-analytics-are-critical-better-care-delivery

- In a 2019 survey from the Society of Actuaries, 69% of healthcare executives said they are now using predictive analytics within their organizations
    - 28% increase from 2018
- Penn Medicine, uses a program that gleans data from a patient's electronic health record and a machine learning algorithm to develop a prognosis score upon arrival
    - This helps them determine high-risk individuals so they can adjust their care accordingly
- At Bergen New Bridge Medical Center, predictive analytics helped to reduce operating costs
    - They struggled to handle unexpected midday rushes in the ER
    - By launching a data analytics program, they were able to determine that adding an 11am shift could alleviate the bottleneck
    - This also reduced the need for overtime pay and calling in extra staff
- Vanderbilt University Medical Center used predictive analytics to forecast the number and timing of expected surgeries so they can staff less people during slow periods

- o This allowed them to schedule more efficiently save on costs that equate to the salaries of 2.8 anesthesiologists

October 8, 2019 - https://healthtechmagazine.net/article/2019/10/how-predictive-analytics-impacting-patient-care-perfcon
- Philadelphia-based healthcare system, Penn Medicine, began harnessing predictive analytics in 2017 to power a trigger system called Palliative Connect
- The program obtains data from patients' electronic health records and uses a machine learning algorithm to develop a prognosis score
  - o This score is generated based on 30 different factors
  - o The program identifies patients who are at the highest risk of a bad outcome when they arrive
- Palliative Connect initially ran as a pilot program at one of Penn Medicine's hospitals from December 2017 to February 2018
  - o The program yielded a 74% increase in the number of patient identified for consultation (85 patients compared to 22)
- CheXNeXt is an AI algorithm being trained and studied by researchers at Stanford University
  - o It is able to screen chest X-rays in a matter of seconds to detect 14 different pathologies with an accuracy rivaling that of radiologists
  - o Researchers hope to be able to use the algorithm to help with the diagnosis of urgent care or emergency patients who come in with a cough
  - o The idea is that the algorithm can triage the X-rays and sort them into prioritized categories for doctors

Healthcare Analytics – April 16, 2020
https://www.prnewswire.com/news-releases/healthcare-analytics-market-size-to-reach-usd-40-781-billion-by-2025--cagr-of-23-55---valuates-reports-301041851.html

- The global healthcare analytics markets is estimated to grow from USD 11.461 Billion in 2019 to USD 40.781 Billion by 2025
  - o A compound annual growth rate of 23.55%
- Trends influencing the healthcare analytics market size/growth
  - o Transitions from paper charts to real-time monitoring systems and the use of electronic health records to gather patient health data
  - o Huge amounts of money are being invested in R&D processes to gain advantages in the market for health care analytics. This is expected to fuel the growth of healthcare analytics market size
  - o The outbreak of COVID-19 has prompted countries around the world to reconsider the initiative to implement healthcare analytics
- Types of healthcare analytics

- o *Descriptive analytics* – preliminary stage of data processing, which provides a description of historical data to provide useful information and potentially prepare the data for further study
  o *Predictive Analytics* – method of extracting data from existing data sets to determine patterns and predict future trends and outcomes
  o *Prescriptive Analytics* – focuses on finding the best course of action in a scenario. Related to descriptive and predictive analytics but stresses on actionable insights rather than data monitoring
- Applications of healthcare analytics
  o Clinical analytics
  o Financial analytics
  o Operational and administrative analytics
  o Population health analytics
- Segmentation in Healthcare analytics market base on end-user
  o Healthcare payer
  o Healthcare provider
  o Academic organization
  o Biotechnology industry
- Regional healthcare analytics market trends
  o It is predicted that North America will account for the biggest market share followed by Europe
    ▪ A large share of this is primarily due to the high rate of adoption of healthcare analytics technologies and services by healthcare providers
  o US healthcare analytics market holds the largest market share in North America
    ▪ Top players in the healthcare anlaytics market
    ▪ Allscripts Healthcare Solutions Inc.
    ▪ Cerner Corporation
    ▪ International Business Machines Corporation
    ▪ McKesson Corporation
    ▪ Optum
    ▪ Citiustech
    ▪ Health Catalyst, Inc.
    ▪ Inovalon, Inc.
    ▪ MedeAnalytics
    ▪ Oracle Corporation
    ▪ SAS Institute Inc
    ▪ SCIOInspire, Corp.
    ▪ Verscend Technologies, Inc.
    ▪ VitreosHealth, Inc.
    ▪ Wipro Limited
- Top players in Asia-Pacific Healthcare Analytics/Medical Analytics market

- o Allscripts Healthcare Solutions
- o Cerner
- o Health Catalyst
- o IBM
- o Inovalon
- o McKesson
- o Medeanlytics
- o Optum
- o Oracle
- o SAS Institute
- o SCIO Health Analytics
- o Verscend Technologies
- o CitiusTech
- o WIPRO

Cerner teams with Hospital IQ – May 21, 2020
https://www.healthcareitnews.com/news/cerner-teams-hospital-iq-expand-predictive-analytics-reopening

- Cerner (an American supplier of health information, technology solutions services, devices, and hardware)  announced this week that it is working with Hospital IQ (an AI-based operations management platform), which specializes in automation technology to help hospitals and health systems build out their clinical and operational predictive analytics capabilities
- As healthcare systems begin to reopen and reschedule surgeries and medical procedures that were delayed due to the COVID-19 crisis, the collaboration aims to help health systems better understand where resources are in use and how they can be more efficiently deployed
- They also plan on working together on new approaches to expanding situational awareness across hospitals and health systems
- Hospital IQ's cloud-based platform already combines machine learning-powered analytics and simulation technology to help hospitals optimize surgical resource alignment, patient flow, and staff scheduling
- Cerner will help health systems manage resource allocation by predicting when an operating room is in use and assessing how many clinicians are needed
- The pandemic has highlighted the critical importance of planning and efficient resource allocation

Predictive Analytics Identifies Patients at Risk of Pancreatic Cancer – April 23, 2020
https://healthitanalytics.com/news/predictive-analytics-identifies-patients-at-risk-of-pancreatic-cancer

- According to a study published in *Cancer Epidemiology, Biomarkers & Prevention*, a predictive analytics model was able to accurately identify patients at higher than normal risk for pancreatic cancer
- Risk factors for pancreatic cancer include family history, chronic conditions such as diabetes and pancreatitis, smoking, and certain circulating biomarkers tied to insulin resistance
- This study examined the combined effect of these factors
- They analyzed data from 500 patients diagnosed with primary pancreatic adenocarcinoma and 1091 matched controls
- They enrolled only US non-Hispanic white patients as genomic risk variants have not been confirmed in other groups
- Researchers collected information on lifestyle and clinical characteristics from patients through patient questionnaires and blood samples and genomic DNA from peripheral blood leukocytes
- They them calculated a weighted genetic risk score based on data from 2 genome-wide association studies
- The researchers developed 3 relative predictive analytics models for men and women separately
  - o 1) only clinical factors
  - o 2) weighted genetic risk score along with the clinical factors
  - o 3) added biomarkers proinsulin, adiponectin, IL-6, and total branched-chain amino acids
- The final integrated model identified 2.0 percent of men and 2.3 percent of women who had at least 3x greater than average risk in 10 years of follow-up
- The study suggests that combining biomarkers with clinical and genetic factors can help identify patients who could benefit from early screening of pancreatic cancer

Cloud updates on Splunk – May 27, 2020
https://www.zdnet.com/article/splunk-rolls-out-cloud-updates-new-machine-learning-capabilities/

- Splunk Inc. is an American public multinational corporation based in San Francisco, California that produces software for searching, monitoring, and analyzing machine-generated big data via a Web-style interface (https://www.splunk.com/)
- The company announced improvement to its cloud and machine learning capabilities along with other updates to the core Splunk platform such as improvements to its real-time stream processing
  - o This will provide users with a more unified way of monitoring and managing data

- They are rolling out Splunk IT Service Intelligence (ITSI) 4.5 for Splunk Cloud which will deliver a centralized framework for monitoring and investigation
- Splunk also recently announced that Splunk Cloud is available on Google Cloud, better enabling customers to share data between applications and draw insights from data sets pulled from hybrid, multi-cloud environments
- The company recently reported that its cloud revenue was up 81% year-over-year in its first quarter and that cloud is driving nearly half of its software booking
- They are also updating its Machine Learning Toolkit (MLTK) with a simplified, customizable, interface designed to make the toolkit more accessible to a broader audience
- The latest version of the Splunk Data Stream Processor (DSP) which is their real-time stream processing service, offers more advanced streaming capabilities and the option to collect data in a single, unified location
  - It also lets organizations mark customer or sensitive information on the stream and route that data to different locations within their organization with data guarantees

Harvard-developed tool lets policymakers base their economic decision on fresh information - May 7, 2020
https://news.harvard.edu/gazette/story/2020/05/a-tool-to-provide-policymakers-with-real-time-data/

- Opportunity Insights (a Harvard-based institute of social scientists and policy analysts that harnesses big data for policy solutions) launched an interactive tool that uses real-time data to measure the depth of the economic downturn and give evidence of any recovery – it is called the Opportunity Insights Economic Tracker (https://tracktherecovery.org/)
  - Open an free for public use
- The tool provides lawmakers real-time analysis of data such as consumer spending and job postings
  - It can break down this information geographically and compare indicators to pre-crisis levels
- Currently, the economic data and financial trends on which public officials rely to gauge the state of the economy comes with a lag of about a month
  - The core of this data is held by companies in the private sector and initially restricted to internal use. As a result, by the time it is compiled, analyzed, and delivered to lawmakers, it is generally weeks old
  - This tools will help to fill in this lag
- The tracker pulls and continually updates data from multiple streams – including private companies that have agreed to share data with Opportunity Insights such as Burning Glass Technologies (compiles job postings) and Homebase (an employee scheduling and time-tracker software provider)

- They also pull information prom public sources at both the state and federal levels such as unemployment insurance claims
- Information can be broken down by geography, industry, and income levels
- It does not reveal information about specific individuals, transaction, or businesses
- Collaborator on the project:
  - Bill and Melinda Gates Foundation
  - Brown University