IDC PERSPECTIVE

Infosys and Top Pharma Bring Digital Transformation to Drug Manufacturing Data

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Digital Transformation for Drug Manufacturing Data

A top-20 global pharma initiated a multiple site effort to eliminate silos of information in manufacturing data important to their engineers. With strategic assistance and technical implementation provided from their partner Infosys, they developed a unique data integration and visualization platform featuring integrated search functions, plug-and-play experience, and knowledge-sharing between engineering, manufacturing and maintenance groups at multiple manufacturing sites.

Key Takeaways

- Manufacturing process data and other information critical to life science engineers is often held in "silos." Precious resources are wasted searching for information, retrieving whole data sets, making visualization and analysis difficult and time-consuming.

- Contextualization – information on where, why, what and by whom the data is collected – is critical to good decision-making. Features such as plug-and-play, bring-your-own analytics, and predictive modeling provide value and utility for multiple user requirements

- Introducing platforms which allow access to these data flows through a common interface can reduce search, retrieval and analysis time while allowing sharing between multiple groups and sites.

Recommended Actions

- Build flexibility into role definitions and visualization/analysis tools to provide maximum utility and reduce platform maintenance challenges

- Adopt a cloud-first strategy for all data sources with appropriate security for platform access, allowing ease-of-use for multiple sites and scalability for future needs.

- Partner with experienced implementation teams after careful consultation with vetted customer references. Consider technical as well as vertical (life sciences) experience when selecting partners.

- Consult with and survey platform users often for suggestions on features and usability, with continuous improvement as a key goal.

Source: IDC, 2021

SITUATION OVERVIEW

In 2017, a top 20 global pharmaceutical company began a journey to digitally transform its pharmaceutical engineering and manufacturing capabilities by constructing a data integration and visualization platform, with strategic assistance and technical implementation provided by its partner Infosys. The vision for the platform was to eliminate silos of information through integrated search functions, plug and play experience, and knowledge sharing between engineering, manufacturing, and maintenance groups at multiple manufacturing facilities. Using flexible visualization and dashboards backed by advanced analytics, the company hoped to minimize time-wasting activities such as searching for information and retrieval of complex complete data sets.

In addition, Infosys and its customer sought to build contextualized data analytics into the platform by providing information on where, why, what, when, and by whom the data was collected to better inform decision making with the appropriate context.

While off-the-shelf commercial solutions were considered, the team felt that there were not sufficient differentiations in setup procedures to implement their vision. In addition, the basic infrastructure of such systems with preconfigured menus and key performance indicators (KPIs) did not address the range of applications being considered or key questions of contextualization.

In 2018, the pharma and Infosys set out to establish the foundational architecture of the platform and define the portal infrastructure and basic capabilities. Next, they created the initial visualization tools and defined the data sources which would be accessed. Once this was defined, the next step was to imbed the ability to identify root causes of issues while improving the user experience and system performance. In 2019, the team established capabilities for bring your own analytics (BYOA) and added further data sources while achieving good manufacturing practices (GMP). As part of this effort, the company and Infosys improved the platform's data hierarchy and made plans to migrate the platform to the cloud. In 2020, trigger alerts were added to the platform, with the extension of additional capabilities, data sources, and analytics tools planned into 2021 and 2022.

Company engineers feel that the platform will provide major benefits in conducting FDA or internal audits by allowing generation of templates and data source definitions, resulting in faster response times and avoiding potential data source errors. Data analytics are being used in practice, and communication is being established with plant manufacturing execution systems (MES). The platform has helped improve computer system validation and data integrity while providing the context needed by manufacturing and maintenance engineers.

Pharmaceutical and biotechnology firms are expressing the importance and priority of digitizing production and maintenance operations. In a 2019 IDC survey, life science IT executives assigned higher priority to production operational excellence, data capitalization, and supply chain operational excellence at a higher rate than respondents in other industries (see Figure 2).

FIGURE 2

Digital Transformation Priorities

Q.   *What are the priorities of your organization's digital transformation (DX) vision, strategy, and road map? Choose up to three.*

Base = only organizations somehow considering digital transformation

Weighted: yes (employee)

Source: IDC's *EMEA and U.S. Vertical Survey,* June 2019

Analytics and data operations in biopharmaceutical manufacturing hold great potential for speeding lifesaving and life-improving drugs to manufacture while improving quality and efficiency. In our current environment of the COVID-19 pandemic, understanding the interplay between a broad variety of manufacturing and maintenance data has the potential to speed the global manufacturing of massive amounts of vaccines to market quickly and with high reproducibility. In 2020, life science executives continued to increase investments in big data and analytics technologies such as analytics software, servers, infrastructure as a service (IaaS), and security software, as well as in associated business consulting and IT services (see Figure 3).

FIGURE 3

Life Science Companies Increasing Big Data/Analytics Spending by Category, 2020

Q.   For each of the big data and analytics technologies listed below, do you expect your organization's 2020 spending to increase, decrease, or remain the same compared with 2019?
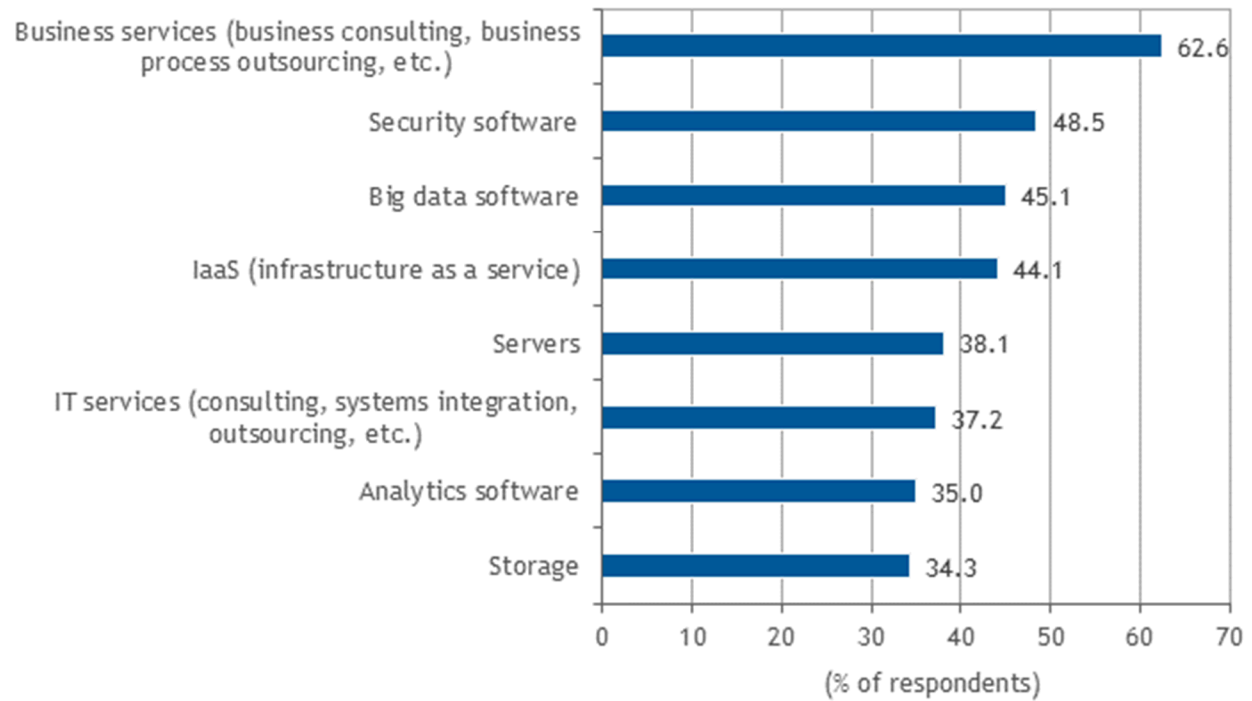
n = 49

Base = only organizations declaring use of big data/business analytics

Weighted: yes (employee)

Source: IDC's *Industry IT and Communications Survey,* July 2020

As pressure increases on drug companies to lower prices and costs, digital transformation in manufacturing data analytics offers a great opportunity to accomplish both.

Note: All numbers in this document may not be exact due to rounding.

ADVICE FOR THE TECHNOLOGY BUYER

- Build flexibility into role definitions and visualization/analysis tools to provide maximum utility and reduce platform maintenance challenges.
- Adopt a cloud-first strategy for all data sources with appropriate security for platform access, allowing ease of use for multiple sites and scalability for future needs.
- Partner with experienced implementation teams after careful consultation with vetted customer references. Consider technical as well as vertical (life science) experience when selecting partners.

- Consult with and survey platform users often for suggestions on features and usability with continuous improvement as a key goal.

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Related Research

- *IDC FutureScape: Worldwide Life Sciences 2022 Predictions* (IDC #US48292121, October 2021)
- *U.S. Life Science Top 10 Market Trends for 2021* (IDC #US46583321, February 2021)
- *Post-COVID-19 SaaS Spending in Life Science and Healthcare* (IDC #US47222219, December 2020)
- *IDC MarketScape: Worldwide Life Science Sales and Marketing Digital Transformation Services 2020 Vendor Assessment* (IDC #US42724918, December 2020)
- *IDC FutureScape: Worldwide Health Industry 2021 Predictions* (IDC #US45834920, October 2020)
- *Life Science Applications in the Cloud, 2020* (IDC #US46647719, July 2020)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Life Sciences* (IDC #US46631519, July 2020)

SYNOPSIS

This IDC Perspective highlights how Infosys and a top 20 global pharmaceutical company bring digital transformation to drug manufacturing data. Analytics and data operations in biopharmaceutical manufacturing hold great potential for speeding lifesaving and life-improving drugs to manufacture while improving quality and efficiency. As pressure increases on drug companies to lower prices and costs, digital transformation in manufacturing data analytics offers a great opportunity to accomplish both.

"Life science companies are beginning to realize the fruits of their investments in digital transformation on the manufacturing floor by improving access to real-time data and providing platforms and analytics tools that generate valuable insights, allowing actions that improve quality and save time," according to Michael Townsend, research director for Life Sciences Commercial Strategies at IDC Health Insights

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