

BIOVIA NOTEBOOK AND BIG DATA ANALYTICS TURN DATA INTO KNOWLEDGE

HOW CHR. HANSEN EVOLVED BEYOND
“PAPER ON GLASS”
CUSTOMER STORY

CUSTOMER: A LEADING GLOBAL PRODUCER OF FOOD INGREDIENTS

Since their founding in 1874, Chr. Hansen has consistently stood on the strength of its R&D team to create innovative, industry-leading ingredients for a wide variety of foods, dietary supplements, and pharmaceutical and agricultural products. They especially excel in the development of cultures, enzymes, probiotics and natural colors and maintain one of the largest commercial collections of bacteria in the world, with over 20,000 strains. Chr. Hansen employs over 2,800 employees in 30 countries around the world, each dedicated to producing natural solutions to promote the wellbeing of all.

THE CHALLENGE: SHARING AND LEVERAGING DEEPER INSIGHTS FROM EXPERIMENTAL DATA

The increasing pace of research and growing competition in their industry had compelled Chr. Hansen to explore new methods to extract every ounce of value from its historically strong R&D team. Previously, Chr. Hansen had undergone a very successful deployment of BIOVIA Notebook to centralize the storing and sharing of scientific information and create a scientific knowledge base for the R&D organization. However, forward-thinking scientists in R&D wished to derive deeper insights from their experimental data by utilizing Big Data analytics. Additionally, they wanted their Big Data tool to automatically collect data directly from laboratory instruments, aggregate it in a single data lake, and parse it into a standardized format to minimize the potential for human error as new data was generated and processed. Although solutions like Hadoop have these data management capabilities, implementing a Big Data tool alone exposed the R&D team to similar inefficiencies they had struggled with when they operated on paper but with a slight twist. Instead of scientists struggling to find “dark data,” they would have an overabundance of “dark insights” if they did not have a centralized location to store the results of their analyses. Powerful data trends or predictive models could be isolated within individual labs or teams, with scientists needlessly redesigning and rerunning analytical protocols previously performed by their colleagues.



“The integration of BIOVIA Notebook with our Hadoop Big Data setup has provided a strong scientific data platform – a digital laboratory where we can explore data and share insights”

– Dr. Morten Meldgaard Innovation Data Architect,
Chr. Hansen

Challenge:

Effectively storing and sharing Hadoop Big Data analytics results throughout a global organization

Solution:

BIOVIA Notebook and Hadoop

Benefits:

- Automated preparation and combination of data
- Created a single, searchable location for storing and sharing of Big Data analytics results
- Streamlined the data management workflow from experimental design through analysis
- Increased innovation efficiency

THE SOLUTION: COMBINING HADOOP AND BIOVIA NOTEBOOK FOR A MORE POWERFUL R&D PLATFORM

Chr. Hansen's previous implementation of BIOVIA Notebook presented a unique opportunity to supplement their R&D Big Data initiatives. By automatically processing raw data into a common format directly from an experiment, Hadoop gave scientists the ability to conduct data searches and visualization, machine learning and predictive analytics to power data-driven innovation. By adding the flexible framework of BIOVIA Notebook, the R&D team has created a unified space for storing and sharing the outcomes of their analyses in BIOVIA Notebook, building a bridge between their database and knowledge base.

Additionally, Chr. Hansen was able to leverage the native functionalities of BIOVIA Notebook to create a global knowledge network, allowing teams from across the global R&D network to search for and share the enriched information Hadoop had created. BIOVIA Notebook's scalability assists in creating this global network, as its previous use had facilitated a culture of sharing and collaboration, further bolstering the utility of Hadoop.

THE RESULT: CONVERSION OF SCIENTIFIC DATA INTO KNOWLEDGE

By combining Hadoop and BIOVIA Notebook, Chr. Hansen has created a modern data management and analysis culture by streamlining and enhancing the entirety of their experimental data management process from experimental design and data creation through the analysis of results. The previous implementation of BIOVIA Notebook constituted the first step towards a modern data landscape, as it promotes collaboration, automation, and data integrity and traceability. These aspects provide the framework for the back end of their Hadoop workflow, which automatically collects and processes data directly from laboratory instruments. Overall, this integration created a foundation for teams to innovate more quickly with faster access to historical insights and to think outside the box by comparing a variety of different data types and sources. The solution helps Chr. Hansen to identify the direction for future R&D endeavors by leveraging meaningful data insights sourced from their global R&D network, providing a transformational boost to innovation for an organization already renowned for its innovative culture.

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



3DEXPERIENCE®