Bayer collaborates with Microsoft

Following a 2021 strategic partnership announcement with Microsoft, Bayer today launched new cloud-based solutions for the agri-food industry: AgPowered Services from Bayer in combination with the new Microsoft Azure Data Manager for Agriculture provide ready-to-use capabilities available for businesses and organizations from start-ups to global enterprises to license and use for their own internal or customer-facing digital solutions.

For example, companies that develop on-farm technologies can build on the new cloud infrastructure and core capabilities from Microsoft (Azure Data Manager for Agriculture) and license additional capabilities from Bayer (Bayer AgPowered Services) to build digital tools that support favorable agronomic outcomes for growers. Similarly, consumer goods companies can use the cloud offerings to build solutions that provide insight into nutrients, sustainability, and production practices to build trust with consumers, stakeholders and investors.

Azure Data Manager for Agriculture combines decades of **Bayer's agricultural expertise with Microsoft's cloud solutions, advancing the industry** through readymade capabilities and robust infrastructure that allow innovators to focus on differentiated value. After initial preview starting today allowing for customer exploration of both the Azure Data Manager and AgPowered Services, full commercial availability will be announced at a later date.

"Only innovation can ensure global food security while protecting the planet. Modern agriculture and food production generate a tremendous amount of valuable data that can drive productivity and sustainability," said Dr. Robert Reiter, Head of R&D for Bayer's Crop Science Division.

"However, this data is often disconnected, not useable throughout the value chain, and the costs to build digital solutions from scratch are high. Our new cloud-based solutions help overcome these challenges. Customers can use the infrastructure and capabilities to build their own digital solutions and products on top of the most robust collection of ag data in the world."

These cloud offerings also support an ecosystem that allows for greater transparency along the whole food production value chain. This transparency, enabled through end-to-end interoperability, would make it easier for consumer goods companies to partner with growers based on how crops are raised and help consumers make more informed purchasing decisions based on origin practices. The potential to support sustainable agriculture and food production can ultimately benefit companies, farmers, consumers, and the planet.

"In order to enable a more sustainable future in agriculture, we must scale innovation which starts with data," said Ralph Haupter, President of Microsoft EMEA. "Our partnership with Bayer allows us to benefit from each other's experiences to empower organizations to address challenges in farming today."

In addition to using the platform to develop their own internal and customer-facing digital platforms, companies and organizations will have the ability to bring their own solutions to Azure Data Manager for Agriculture and make them available for licensing, similar to how Bayer is offering these initial AgPowered Services as add-ons to Azure Data Manager robust infrastructure and core capabilities:

- **Bayer Imagery Insights –** Track crop health over time and quickly identify areas in fields that need attention through a series of satellite images and supporting data within individually selected geographic areas.
- **Bayer Growing Degree Day Calculation –** Provide a calculation for Growing Degree Days, a critical input for models that focus on identifying key timing of variables affecting crop growth, health and output, as well as the emergence and development of important crop insect pests and diseases.
- **Bayer Crop Water Use Maps –** Gain access to map layers and supporting data that help define the amount of water a crop is using or losing during a 24-hour period. Users will be able to understand crop evaporation and transpiration levels and potential crop loss areas due to lack of water, which is a key driver for irrigation planning.

Data models powering Bayer AgPowered Services are developed using publicly available data like weather information, remote sensing like satellite imagery, decades of rich agronomic data from Bayer research and market development efforts, as well as aggregated, anonymized, and enhanced data from Climate FieldView™, Bayer's leading digital farming solution with subscriptions across more than 220 million acres in over 20 countries. All cloud-based solutions are designed to meet or exceed global data privacy requirements, providing data storage on the world's most trusted cloud with leading security offerings.

Solutions built on Azure Data Manager can benefit farmers seeking to track disease, pest and weed pressure, apply precision inputs, identify crop growth and production patterns, measure potential yield, track and capture carbon emissions, and analyze heat stress impact, rainfall, hail and weather data. In addition to bringing the first AgPowered Services to the cloud offering, Bayer is using capabilities from Azure Data Manager to power insights in FieldView.

Using these cloud-based enterprise solutions, value chain partners will be able to apply insights into supply projections, sustainable sourcing, and ESG reporting. They will also be able to meet quickly changing consumer preferences for fresh, high-quality ingredients with data driven insights that allow for optimization of harvest, transport, and ripening processes as well as advanced traceability of food ingredients.

"This is an important step towards accelerating the impact of big data and agriculture. With high-quality data fueling insights, we expect to see a value chain that is more predictable, more transparent, and importantly, where value is shared all the way back to producers," said Jeremy Williams, Head of Climate and Digital Farming at Bayer's Crop Science Division. "This is how we incentivize sustainable business models to drive these regenerative agriculture ecosystem benefits, providing growers options to meaningfully connect with supply chains that start on their farms."

The partnership between Microsoft and Bayer is a significant, strategic step forward in accomplishing Bayer's ambitious target of 100-percent digitally enabled sales in its Crop Science division by 2030 and accelerating its ability to bring new value and deliver outcomes-based, digitally enabled solutions to farmer customers. Bayer is committed to setting a new standard for the industry in data-driven, digital innovation