FlexBuffer™ supports consumer choice, shorter delivery times for ecommerce with fast, flexible, efficient order handling

- Highly adaptable modular application cell stores, buffers, and sequences a wide variety of items
- Enables efficient handling of smaller batch sizes, mixed pallets and individual customer orders

ABB is responding to the growing consumer demand for choice and fast delivery with the launch of its FlexBuffer™ application cell. FlexBuffer brings new levels of flexibility for logistics, food and beverage, healthcare, consumer packaged goods, restaurants and retailers, offering a highly adaptable multi-functional solution for handling a variety of tasks such as sequencing, buffering, storage and order consolidation.

"The constantly changing nature of today's consumer landscape and the explosion of ecommerce is challenging the conventional systems used for processing and delivering orders," says Marc Segura, Group Senior Vice President Managing Director Consumer Segments & Service Robotics at ABB. "The FlexBuffer helps our customers meet these challenges by bringing automated storage and retrieval and goods sequencing to all facilities. Now, any size operation, from large stores to small pharmacies can achieve maximum efficiency in handling a wide range of items. With FlexBuffer, our customers will have the flexibility to store and retrieve goods as they want, in any sequence to suit their operation and customers' needs, as well as the ability to quickly scale up their operations if required."

Operators across multiple industries are facing a range of challenges in meeting consumer expectations for faster delivery of an expanding range of goods, including labor shortages and the need to provide direct-to-consumer (D2C) delivery services in a flexible, fast manner. Automated goods handling is the key to solving these challenges, yet most systems available today are large, expensive to install, and lack the flexibility to provide the buffering and order sequencing capabilities that companies need.

FlexBuffer answers these challenges. Comprising of an ABB robot, a suite of grippers, a software package, storage racking and infeed and outfeed conveyors that feed and dispatch goods, FlexBuffer provides a flexible and cost effective multi-functional solution for quickly processing a wide variety of customer orders.

Incoming orders are managed by software that interfaces with WMS, ERP and AMS systems. The software suite manages the storage and retrieval of mixed items, avoiding collisions and optimizing storage use. Information from the software is used by the robot to store goods in the appropriate rack positions, based on the sequence in which they need to be dispatched. When objects need to be retrieved, the robot can select the requested goods in the right sequence and place them on the outbound conveyor, ready for dispatch. Ordering goods according to pre-defined sequences ensures companies can achieve delivery times and fill customized orders with the correct item weights, item temperatures or specific order related attributes.

The FlexBuffer can also help companies form an Order Consolidation Buffer (OCB), allowing temporary storage of goods before further processing.

The FlexBuffer is available in both single and mixed item versions. The single item version is designed to handle standard boxes used to transport items, while the version for mixed items offers added flexibility through an adjustable gripper that can handle items including parcels, trays, and crates.
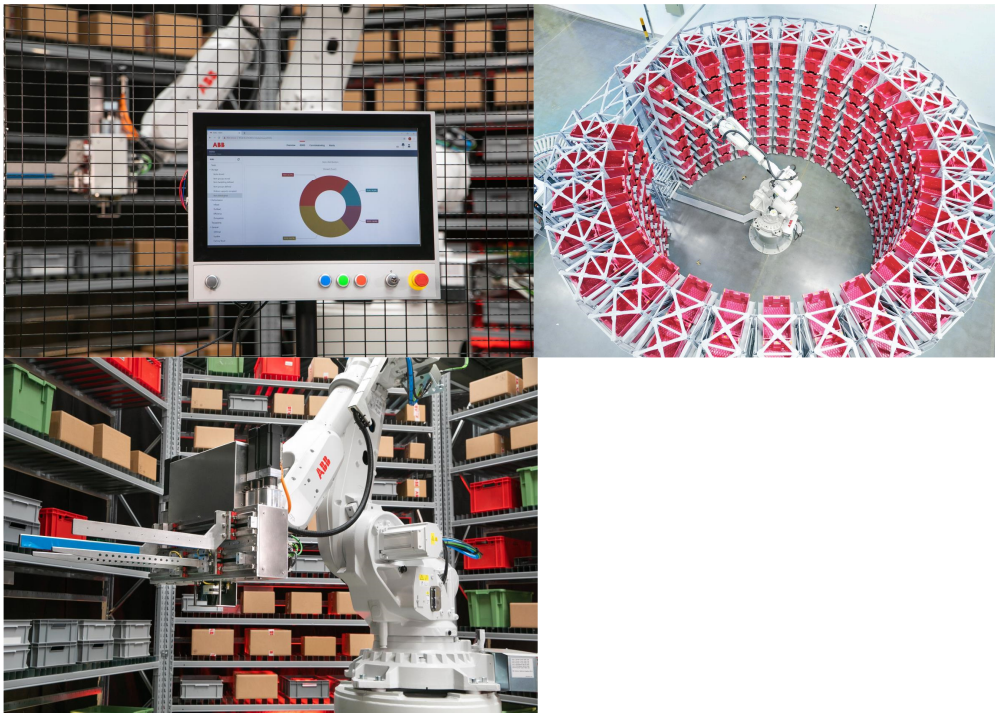
FlexBuffer can handle a total payload of up to 50kg. The solution can store up to 600 totes and conduct sequencing operations at up to 500 cycles per hour.

Additional flexibility is enabled by FlexBuffer's configurable storage management software, which can be used to optimize the system for buffering, storage and sequencing operations. Able to control single or multiple FlexBuffer cells, the software ensures that operations can easily be scaled up to meet changing demands. This scalability is especially ideal for smaller facilities such as retail stores, pharmacies, hospitals, and fulfillment centers needing a more adaptable and flexible storage and retrieval solution. The software also helps to meet the growing requirement for live order tracking, with customers able to continuously track the progress of their order.

To ensure customers can achieve maximum production, ABB offers a full range of value-added services designed to increase the performance, uptime and lifetime of FlexBuffer and its portfolio of modular cells.

ABB can also now offer fully autonomous mobile robots (AMRs) to greatly improve the flexibility of logistics operations. With the recent acquisition of ASTI Mobile Robotics Group (ASTI), a leading global manufacturer of AMRs, ABB is the only company able to offer a complete portfolio for the next generation of flexible automation.

The benefits that FlexBuffer can bring are already being proven in applications across the world. Pilot installations include a pharmaceuticals storage and bin-picking application at the Shanghai 7th Hospital in China, an automatic retail store for Chinese mobile communications company Huawei that allows customers to collect their mobile phone orders via an automated booth, and an order picking system for British retailer, John Lewis & Partners.

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