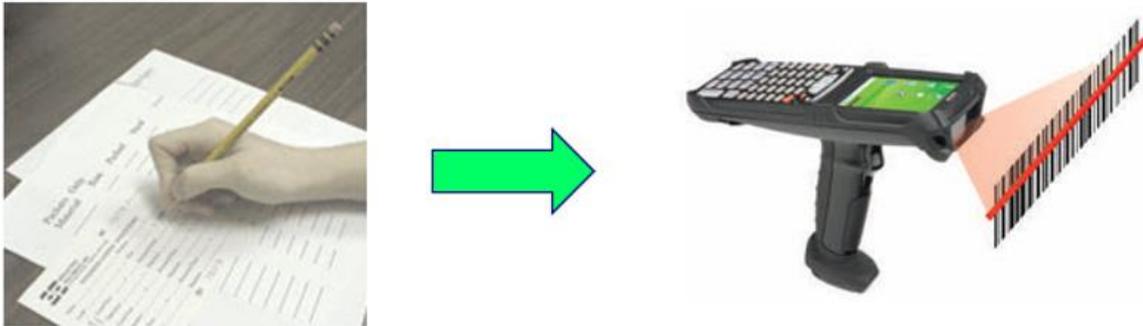


BellHawk-in-a-Box - Barcode Tracking Simplified



Replacing the use of paper forms with barcode scanning can:

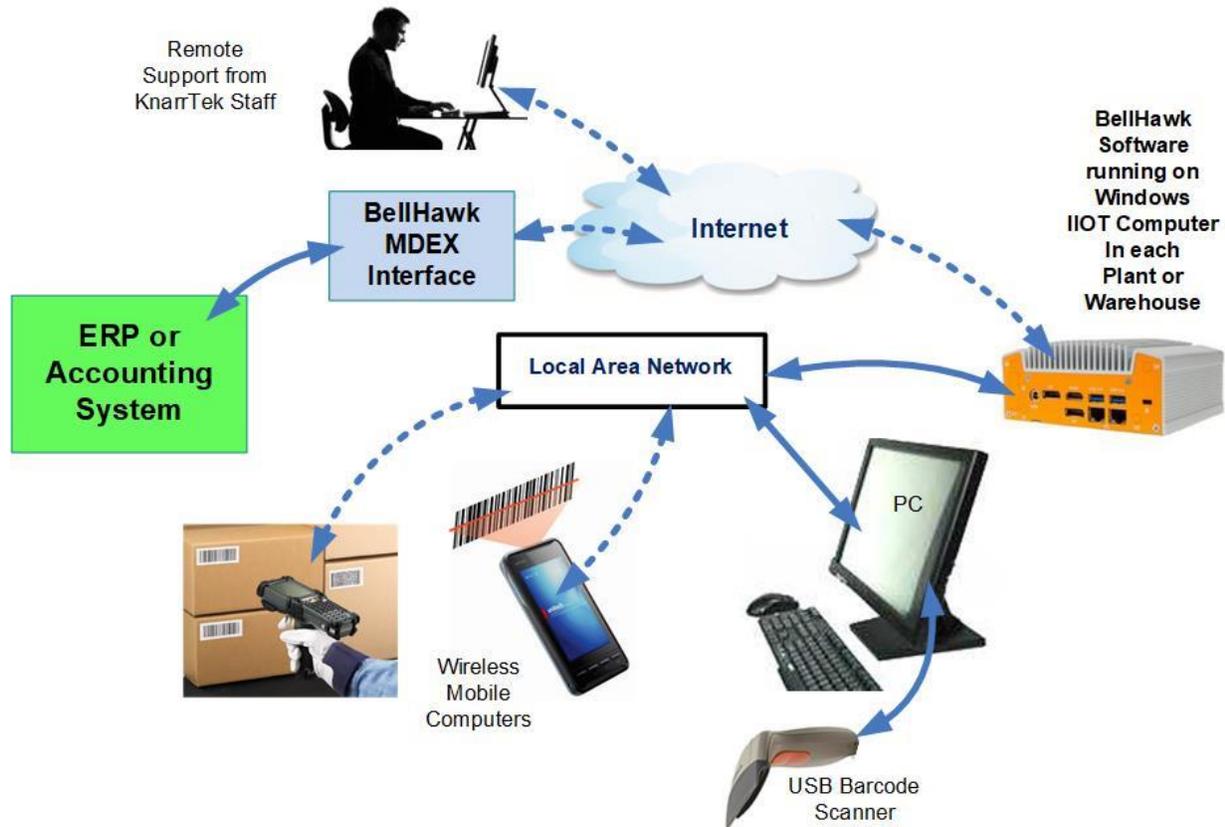
1. Give real-time visibility of operations and materials in manufacturing plants and distribution warehouses.
2. Save the equivalent of one to three full-time people in each manufacturing plant and warehouse by automating data collection.
3. Prevent mistakes such as using the wrong materials or picking and shipping the wrong materials for a customer order by providing real-time point-of-action warnings when mistakes are about to be made.
4. Capture job times and costs for subsequent analysis and process improvement.
5. Capture materials traceability data to minimize the cost of recalls.
6. Enable the automated scheduling of manufacturing, picking, packing, and shipping to ensure that customer orders get shipped on time.

As described below, the cost to a single manufacturing plant or warehouse of using a system such as BellHawk, typically is well under \$1,000/month and can be as little as \$500/month. Contrast this to the loaded labor rate of the typical employee @\$5,000/month, with typical cost savings of between one and three full-time equivalent employees by using BellHawk.

Given the benefits of using barcode scanning, why are so many mid-sized manufacturing plants and distribution warehouses, still using paper forms, manual keyboard data entry, and Excel spreadsheets?

The answer is that the savings rapidly evaporate if the company has to hire a dedicated IT person to implement and manage the system and/or has to spend a lot of time of its staff in setting up the system. Also, these savings rapidly diminish if the organization's staff have to spend a lot of time on duplicate data entry for the new system. As a result, many mid-sized industrial organizations miss out on significant cost savings and process improvements by continuing to use paper forms and manual keyboard data entry.

BellHawk in a Box



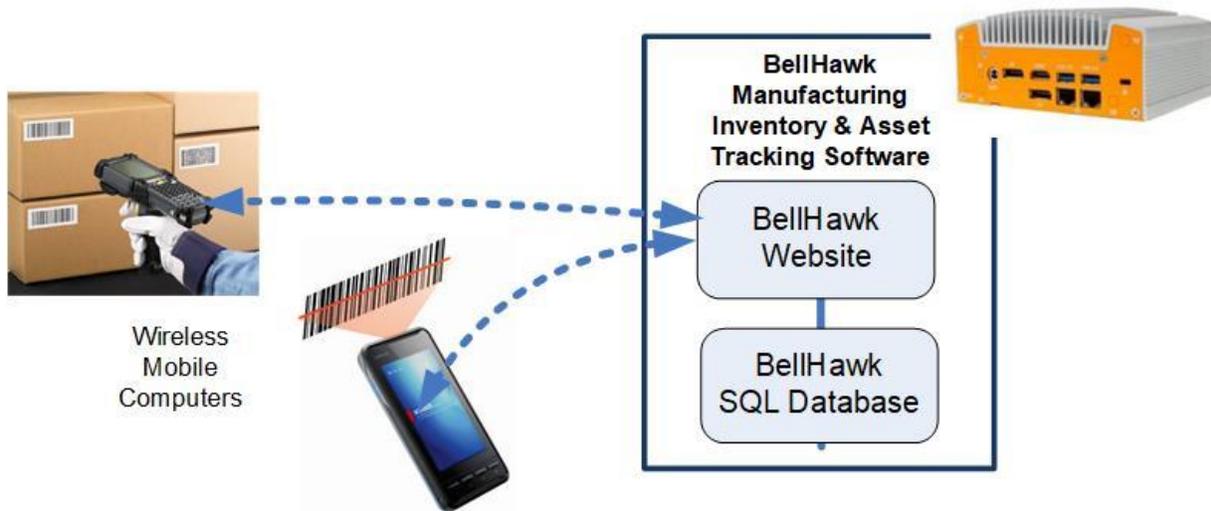
To solve the problem of there not being an IT person on site, KnarrTek ships the BellHawk barcode tracking software to each warehouse or manufacturing plant, already installed in a ruggedized Windows IIOT computer. All that is necessary at the plant or warehouse level is to plug the BellHawk box into an uninterruptable power supply (UPS) and the local area Ethernet network.

KnarrTek staff can then work with the operations staff of the warehouse or manufacturing plant to remotely configure the system to meet their specific data collection needs.

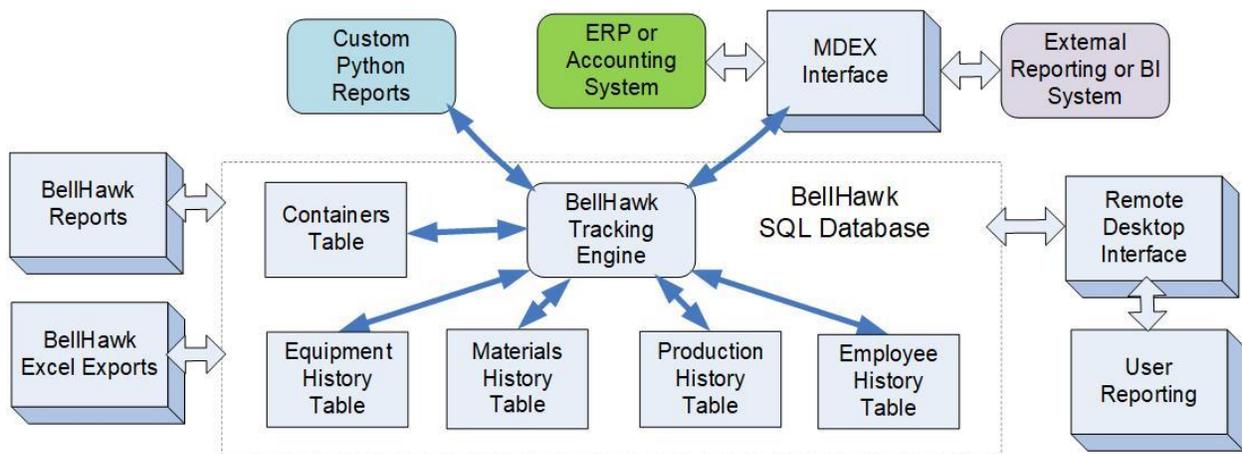
Data capture can be performed using the web-browser on any device equipped with an internal or external barcode scanner. There is no need to install any software on each device. Simply point the browser to the IP address of the BellHawk Box on the local area network, log-in, and start collecting data.

As shown below, the BellHawk software consists of a website and SQL Server database that runs inside of a ruggedized Windows IIOT computer, which is approximately 6"x6"x3" in size, is easy to ship, and does not need any special operating environment.

If needed an HDMI monitor and USB keyboard and mouse can be added to the BellHawk Box to enable manufacturing engineers and IT staff to locally access this system.



BellHawk has extensive reporting capabilities, based on the data captured in the BellHawk database.



These include:

1. Standard reports selected through the web-browser interface. These can be printed on an office printer or exported as PDF files to the users' PC.
2. Standard Excel export "reports" which can be exported as Excel files to the user's PC.
3. A Remote Desktop Interface, through which users can export data from the BellHawk database into a local SQL Server database on their PC. This can then be used to generate custom reports using third party reporting software, such as Chrystal Reports or Microsoft Office.
4. Custom Reports which can be written as Python scripts and added to the standard set of BellHawk reports.
5. The MDEX interface, which provides a remote 24x7 interface to a simplified mirror of the BellHawk database. It is used for implementing interfaces to ERP, accounting and

other such systems as well as being linked to external reporting and business intelligence systems.

The standard reports and Excel exports can be customized by KnarrTek staff, at modest cost to meet the requirements of each client organization. Custom reports, written in Python can be created by the KnarrTek technical staff for clients, or client staff, such as manufacturing engineers and IT staff, can generate their own custom reports in Python without requiring extensive programming skills.

Implementation Process

We recommend that clients start out by using BellHawk on a remote server computer managed by KnarrTek over the Internet. In this process, the KnarrTek's staff will work with the client's operations staff to understand their operational processes and get them working with the BellHawk software in a Pilot system.

Then, when the Pilot BellHawk software is working to the satisfaction of the client, KnarrTek will load the software into a ruggedized IIOT computer and ship it to the client.

During the Pilot phase, the client is expected to pay for the support time needed from the KnarrTek team. This is done by purchasing a Gold Support Services bundle for \$5,000, which is used to setup a prepaid support account for the client, against which the KnarrTek team can charge their time.

There is no charge for use of the BellHawk software until BellHawk in the Box goes operational.

If significant software customizations are required, then the client may be required to purchase additional support services bundles.

Software License Fees

For BellHawk in a Box, there are three base systems:

- Operations Tracking BellHawk-in-a Box System KTI-OTBBS -\$360/month
- Materials Tracking BellHawk-in-a-Box Base System KTI-MTBBS - \$460/month
- Work-in-Process Tracking BellHawk-in-a-Box Base System KTI-WIPBBS - \$660/month

These fees include the ruggedized computer and remote support for this computer and all the software provided by KnarrTek

In addition, there will be the following fees:

1. Client Access License (KTI-CAL) \$30/month each
2. Device Access License (KTI-DAL) \$20/month each
3. View /Reporting Only License (KTI-VCAL) \$10/month each

The Warehouse Management System bundle (KTI-WMS) adds \$300/month to the material tracking and work-in-process tracking systems.

There are also other options, such as Barcode Label Printing and the MES interface (KTI-MES \$200/month), which are covered elsewhere.

Benefits of BellHawk-in-a-Box

1. Simple implementation – no computers to buy or software to install
2. Low initial cost – minimizes implementation costs – no need for expensive IT staff
3. Low on-going costs for affordable software subscription
4. Rapid deployment – start Pilot in 2 days -on-site deployment within 2 weeks
5. Supported by experts in barcode tracking – no need to have your own on-site experts
6. High performance – rapid data capture with dedicated hardware
7. Comprehensive operations, materials and work-in-process tracking software
8. Expansible – start small and add capabilities and users as you need them
9. Ease of generating custom reports
10. Ease of integration with accounting, ERP and other systems.

Multi-Plant Operations



BellHawk-in-a Box can be used in a multi-plant/warehouse configuration, where each plant or warehouse has its own BellHawk system but is able to function with a single ERP or accounting system using a MilramX based operations management system. The benefits of this are:

1. Personnel in each plant only see operations and materials related to their location to avoid confusion.
2. High speed data capture because each location has its own BellHawk-in-a-Box
3. Not dependent on the availability of the Internet for each plant/warehouse operation as BellHawk-in-a-Box is installed locally within each plant

4. Each BellHawk-in-a-Box can be tailored to the needs of each location.
5. Ability to automatically turn customer orders into manufacturing, picking, packing and shipping orders and then have these executed by different plants depending on the products well as customer needs and location.
6. Ability to do integrated materials planning and purchasing across multiple plants,
7. Ability for senior management to view operations and materials in all plants in near real-time and to generate integrated operational reports.
8. Software can be centrally administered just like any other “Cloud” based resource.

MilramX is KnarrTek’s Decision Support System software, which is often used in conjunction with BellHawk for operations and materials tracking.

Commentary

The BellHawk software is also available for installation on a dedicated, non-shared, Windows Server provided by the client. For most clients, this is not recommended as it results in higher costs, slower data capture, and lower reliability

For more Information

Please contact Sales@KnarrTek.com and also see www.KnarrTek.com.