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## **AGRI-WAREHOUSING**

### **Innovations and technologies for the future**

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Agri-warehousing has come a long way from the ancient granaries and basic structures that serve as storages, to a modern set-up with highly specialized functions. While the basic function of storage remains the same the methodology and technologies have seen significant advancement. A warehouse today probably has very little in common with the traditional stone structure with raised flooring that passed as storage.

The integration of scientific and technological know-how into warehousing has transformed every aspect of the agri-warehousing industry, from infrastructure design to storage methods and processes. Along with the creation of additional infrastructure the focus should be on the adoption of innovative solutions in space management, logistical efficiency and the safety of stored goods.



Let's have a look at some of the must have technologies in today's modern warehouses, the adoption of any or all of which will result in significant improvements in operational efficiency, space utilization and also significant cost savings.

**\*Warehouse Management Systems (WMS):** WMS is a software application designed to support warehouse management activities. A WMS can be tailor made and tweaked for maximum efficiency in managing the supply and demand of warehouses and are instrumental in effective planning of daily activities, loading/unloading sequence, staffing requirements and dispatch.

**\*Bar Coding:** The use of bar-coding in warehousing operations plays a critical role in inventory management. Bar-coded receipts have several benefits such as quick and accurate data collection reduces manual intervention and labor costs, also the risk of fake manual storage receipts is completely eliminated. Faster and accurate access to information is critical especially in operations such as warehousing as it allows informed decision making and better management.

**\*Radio Frequency Identification (RFID):** Today's warehouses can cover huge amounts of space or be in multiple levels. As such manual stock management can be a time consuming, cumbersome process that is also prone to errors. Low visibility of stock positions also runs the added risk of pilferage from the warehouse. A RFID uses electromagnetic fields to identify and tag item which can then be monitored using radio waves. An RFID system accords complete visibility of stocks and helps in securing the warehouse against pilferage or theft.

**\*GPS & GEO Tagging:** The integration of Real-Time technology with GPS & Geo Tagging also plays a key role in the successful operation of warehouses. Digitization and technologies such as satellite imagery, mobile telephony, and handheld devices like tablets are increasingly being used in conjunction to each other in the collection of data and information which are then analyzed and used to improve logistics as well as storage



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management. These handheld devices are capable of:

- \*Data management in warehouse and real time capturing of data with real time reporting and controls

- \*Facilitates digital signature and cuts down turnaround time

- \*Configured to communicate to the MIS database kept at a remote location

- \*Configured to fire SMS to the client upon validation of the data by the main database

Warehousing Operations: Temperature and humidity management are key to the success of any warehouse operation and more so for agri-warehouses where stored commodities are highly susceptible to temperature and humidity related damages most likely in the case of cold storages. As such optimal energy efficiency, air-quality control, etc. can be maintained with the help of efficient warehousing management techniques.

Amalgamation of Technology & Innovations:

In a market dominated by unorganized players, the use of technology has been neglected by the warehousing industry. Most of the warehousing companies focus on building warehouses rather than managing quantity & quality of the stocks stored in their warehouses.

Technology is set to be the key enabler of growth for this sector. India has just awakened to the tremendous potential of technology-driven innovation in the burgeoning sector. There are very few integrated service providers which are receptive to the fact that technology can help them reduce costs and improve efficiency in their businesses and overall market.

A study conducted by FICCI has demonstrated that scientific processes can be implemented to ensure proper supply chain management, and it has the potential to bring down post harvest losses to merely 0.5 percent from the present 10%. Through proper methodology and management of warehouses, the risks involved with crop damage can be depleted. Moreover, with constant monitoring on real time basis, a promptness to act in case of crisis and risks can be ensured. With the advent of technological innovations the management of warehouses can be done agnostic of climate, infrastructure and location across any kind of agriculture crop.

Future Horizons:

While there has been a significant increase in production of food-grains and other agri-produce in the recent past, there are formidable challenges that the sector is facing. The thrust areas to enhance the sector will be increasing investment through public private partnerships in research and technology transfer which can make it more accountable towards delivery, improved value chain including storage, transport, processing and market facilities. Constant innovation can help to improve productivity and competitiveness whereas enabling policies that are necessary to bring knowledge, technologies and service to farmers are much required.

India's farm output is precious and the efforts should be aimed at ensuring that not even a morsel is wasted. There is a need for a sustained campaign to introduce scientific warehousing processes to make entire supply chain smooth, transparent and mobile to ensure quality, timely delivery, right price and minimal losses. (Author is the CEO, SLCM Group, CEO, SLCM Group)

