Automation will play an even greater role in the warehouse of the future; and human-machine interaction is set to increase. It will become increasingly common to see scenarios such as robots collecting and depositing pallets, preparing them for shipping, before finally loading them into the back of a vehicle for delivery.

The International Federation of Robotics predicts that global robot sales will have seen an annual growth of 15% by 2018. The Internet of Things will lead to an explosion of smart production lines, feeding data back from multiple sensors to AI-enabled production control software, which will learn how to maximize efficiency and react to issues quickly as they arise.

Automated warehouses certainly seem to be the ultimate in modern distribution centers, needing very few people to operate, offering high levels of productivity (because as well as being fast, they can operate 24/7), and offsetting some of the power they use by operating in an unheated or un-cooled environment, with little – if any – need for artificial lighting.

Case study:

A large online grocery retailer in UK

Its warehouses use algorithms, machine-learning and sensors to carry items around a series of conveyor belts to pass on to human pickers to take to high-speed delivery trucks. They have also developed a warehouse which replaces this conveyor belt system with autonomous robots collaborating with each other to pick customers’ groceries from a densely packed grid of crates. Furthermore, data analytics is used to predict demand and move goods into the most efficient locations.

Consequently, the BOI have promoted the utilization of robotics and automation in the private sector, including in the e-commerce and warehousing business by incentivizing tax- and non-tax privileges (5.8), Logistic Service Centers (7.4), and the Product Development and Trade Complex (7.29). This promotion would encourage businesses and the private sector to utilize automated systems in their businesses, e.g. automated storage, automated packaging, autoloader, or silo automation, etc.

Note:

1 These are based on Activities-Based Incentives only. There are incentives provided by the BOI Thailand subject to the eligible activities, location, criteria and BOI conditions.
2 Other eligible activities can get a tax incentive if utilizing the robotics and automation systems in the business, which is to be considered on a case by case basis.
3 Exemption of import duty on raw or essential materials and machinery used in manufacturing export products.
4 The application must be submitted for additional three-year income tax exemption by 30 December 2020.
5 The application must be submitted by 30 December 2018.

Non-tax incentives

Source: Board of Investment Thailand

"In the near future, we will increasingly see the utilization and replacement of processes with robotics and automation within the private sector, particularly BOI companies in Thailand. This of course includes the warehousing business as well. However, one of the questions is how Thailand will solve the decrease in tax revenue from employment and the expected rise of the unemployment rate when robotics and automation gradually replace human labor. Another question is whether the robot tax will be necessary in Thailand, or whether other tax measures will be introduced to limit investments in automated machines and strike a balance between human labor and robotics and automation when there is an over-use."

Auaychai Sukawong
Director, Tax and Legal
KPMG in Thailand
As part of their efforts to offer better value to consumers, retailers are employing predictive analytics to better manage stock and reduce wastage.

3D printing may reduce occupiers’ need for space as parts can be printed on-site. This could have a significant impact on the demand for both retail and warehouse space, and size of units required.

Electronic Data Interchange (EDI) technology allows for sharing of documents, with a shared format, between two computer systems. This leads to the seamless and highly visible flow of information between two different computer systems.

The benefits of Radio-frequency identification (RFID) include greater stock visibility and transparency, which offers ease of inventory as well as a reduction in theft.

Sometimes, drone tech is combined with RFID for inventory catalogue at a much faster pace.

With autonomous vehicles, firms will be less restricted by location and able to move to areas where labor or land is cheaper. Businesses will need to assess whether to relocate their warehouses to cheaper land, and where this happens.

Battery technology allows for greater automation as the energy source will be local and affordable enough to offset the upfront costs of installing automated systems. Moreover, it also allows for great flexibility in the location of warehouses.

Cloud storage can cut down on maintenance, infrastructure and labor costs that come from the installation and upgrading of warehouse management systems.

Battery technology allows for greater automation as the energy source will be local and affordable enough to offset the upfront costs of installing automated systems. Moreover, it also allows for great flexibility in the location of warehouses.

Cloud storage can cut down on maintenance, infrastructure and labor costs that come from the installation and upgrading of warehouse management systems.

By utilizing composite panels in the construction, energy efficiency, airtightness and durability are increased. These are key benefits, especially for cold storage facilities.

As part of their efforts to offer better value to consumers, retailers are employing predictive analytics to better manage stock and reduce wastage.

3D printing may reduce occupiers’ need for space as parts can be printed on-site. This could have a significant impact on the demand for both retail and warehouse space, and size of units required.

Electronic Data Interchange (EDI) technology allows for sharing of documents, with a shared format, between two computer systems. This leads to the seamless and highly visible flow of information between two different computer systems.

The benefits of Radio-frequency identification (RFID) include greater stock visibility and transparency, which offers ease of inventory as well as a reduction in theft. Sometimes, drone tech is combined with RFID for inventory catalogue at a much faster pace.

With autonomous vehicles, firms will be less restricted by location and able to move to areas where labor or land is cheaper. Businesses will need to assess whether to relocate their warehouses to cheaper land, and where this happens.

Battery technology allows for greater automation as the energy source will be local and affordable enough to offset the upfront costs of installing automated systems. Moreover, it also allows for great flexibility in the location of warehouses.

Cloud storage can cut down on maintenance, infrastructure and labor costs that come from the installation and upgrading of warehouse management systems.

By utilizing composite panels in the construction, energy efficiency, airtightness and durability are increased. These are key benefits, especially for cold storage facilities.

As part of their efforts to offer better value to consumers, retailers are employing predictive analytics to better manage stock and reduce wastage.

3D printing may reduce occupiers’ need for space as parts can be printed on-site. This could have a significant impact on the demand for both retail and warehouse space, and size of units required.

Electronic Data Interchange (EDI) technology allows for sharing of documents, with a shared format, between two computer systems. This leads to the seamless and highly visible flow of information between two different computer systems.

The benefits of Radio-frequency identification (RFID) include greater stock visibility and transparency, which offers ease of inventory as well as a reduction in theft. Sometimes, drone tech is combined with RFID for inventory catalogue at a much faster pace.

With autonomous vehicles, firms will be less restricted by location and able to move to areas where labor or land is cheaper. Businesses will need to assess whether to relocate their warehouses to cheaper land, and where this happens.

Battery technology allows for greater automation as the energy source will be local and affordable enough to offset the upfront costs of installing automated systems. Moreover, it also allows for great flexibility in the location of warehouses.

Cloud storage can cut down on maintenance, infrastructure and labor costs that come from the installation and upgrading of warehouse management systems.

By utilizing composite panels in the construction, energy efficiency, airtightness and durability are increased. These are key benefits, especially for cold storage facilities.

As part of their efforts to offer better value to consumers, retailers are employing predictive analytics to better manage stock and reduce wastage.

3D printing may reduce occupiers’ need for space as parts can be printed on-site. This could have a significant impact on the demand for both retail and warehouse space, and size of units required.

Electronic Data Interchange (EDI) technology allows for sharing of documents, with a shared format, between two computer systems. This leads to the seamless and highly visible flow of information between two different computer systems.

The benefits of Radio-frequency identification (RFID) include greater stock visibility and transparency, which offers ease of inventory as well as a reduction in theft. Sometimes, drone tech is combined with RFID for inventory catalogue at a much faster pace.

With autonomous vehicles, firms will be less restricted by location and able to move to areas where labor or land is cheaper. Businesses will need to assess whether to relocate their warehouses to cheaper land, and where this happens.

Battery technology allows for greater automation as the energy source will be local and affordable enough to offset the upfront costs of installing automated systems. Moreover, it also allows for great flexibility in the location of warehouses.

Cloud storage can cut down on maintenance, infrastructure and labor costs that come from the installation and upgrading of warehouse management systems.

By utilizing composite panels in the construction, energy efficiency, airtightness and durability are increased. These are key benefits, especially for cold storage facilities.
Shoppers, consumers and regulators are demanding ever more transparent product and value chain information. They want it in a digital format underpinned by data, in real time and at more granular levels. It will become imperative that the information is correct and consistent throughout the many sources of access available to consumers.

After a better-than-expected Christmas, the noticeable sigh of relief among retailers was quickly replaced by a large intake of uncertainty facing the year ahead. Also, the cost implications of building a truly omnichannel business model conspired to suggest that a bumpy ride was in store for the industry in 2017.

Robocalypse Now?
Picture the scene: armies of robots operating in industrial production lines, running day and night, performing the same repetitive tasks their programming dictates as their human masters look on.

No, this isn’t science fiction, but the reality of the modern production line, and a scene we’re now very familiar with.

KPMG in Thailand
Empire Tower, 48th – 51st Floors
1 South Sathorn Road, Yannawa
Sathorn, Bangkok 10120
T: +662 677 2000
E: kpmg.com/th

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2018 KPMG Phoomchai Audit Ltd., a Thai limited company and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved.