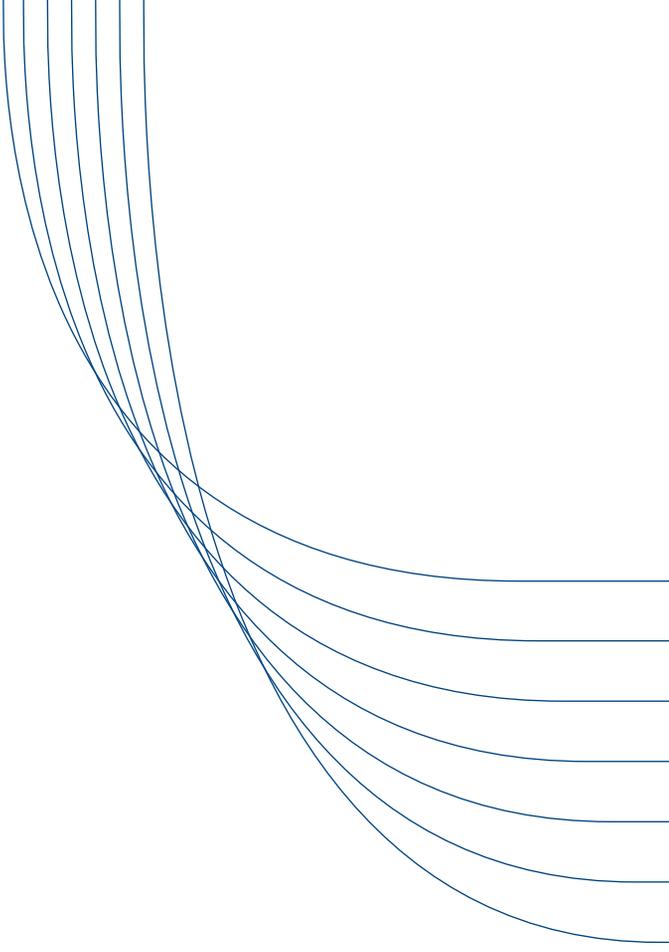


(R)evolution of the market for voice solutions in Europe

**A Zetes
white paper**



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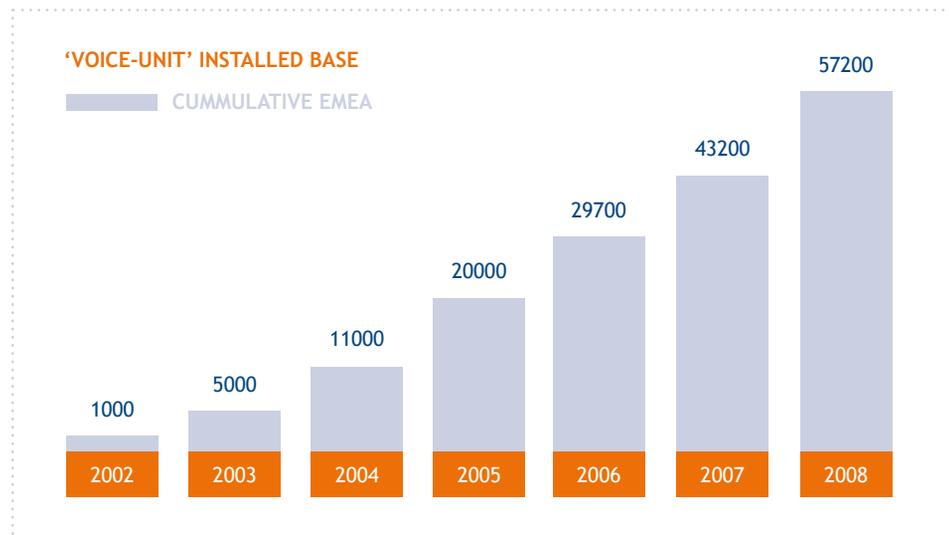
(R)EVOLUTION OF THE MARKET FOR VOICE SOLUTIONS IN EUROPE

Executive summary

Since the first implementations at the start of this decade, voice recognition solutions have changed the way operators work in distribution centres (DC's) across Europe. Voice-directed picking has proven that it can help companies achieve significant improvements in terms of accuracy, productivity, and operator ergonomics. With the maturation of voice technology, the demands being made on voice solutions are changing. Companies want to reap the benefits of voice outside the DC, in other applications, and combined with other interfaces and technologies. In other words, they want even more flexibility and greater choice. According to Auto-ID specialist Zetes, the technology itself is ready for this next challenge but in order to bring the benefits of voice to a larger audience, the capabilities of supporting software platforms will need to raise the bar as well.

Unlocking the value of voice beyond order picking

In five years, the use of voice directed working has evolved from early adopters' to the mainstream market.



The “killer application” that has transformed the use of voice into an industry best practice technology is voice-directed order picking within the distribution centre. Operators are equipped with a mobile voice terminal to prepare orders, using voice as the only interface to communicate with the WMS or ERP system. Food retail customers have certainly been at the forefront of implementing this type of solution, their order preparation processes providing a good fit for voice-directed work. This is because they typically feature a high number of pick lines combined low numbers of grabs per line and a limited number of exceptions.

Key logistics executives see the benefits proven and now want to profit from voice-enabled work in other processes and in other areas as well.

With a little over 40% of all labour costs related to order preparation, streamlined picking processes have resulted in a fast initial payback. In a competitive industry where accuracy and efficiency are key performance metrics, executives have seen the anticipated benefits rapidly and now want to profit from applying voice-enabled processes to other areas as well. In these instances, they are looking beyond traditional order preparation processes and outside the warehouse. As these heterogeneous processes are in some cases less fit for voice-directed work (i.e. using voice as the only interface), this can trigger a request for a flexible approach towards interfaces and terminals as well.



Asking for choice

MORE APPLICATIONS

The early majority who initially voice enabled picking processes now wants to extend the implementation to other tasks - for instance, cycle counting, receiving, cross-docking, moving, price checking functions. Less repetitive, lower volume, and more heterogeneous in their commands (due to more exceptions requiring additional checks), these applications are less well served by typical voice-dedicated picking on dedicated devices, as they require the scanning of barcodes, entry of product weights or on screen consultations.

MORE INTERFACES

Voice-assisted applications typically run on multimodal devices, allowing for the use of various interfaces on one single device.

Therefore, depending on the task at hand, the user needs the flexibility to switch between the interfaces of his choice: voice, keyboard, scanning, etc. The choice for one or the other interface should not be mutually exclusive: during voice assisted working (i.e. using partly voice and partly another interface), an operator can for instance work in a voice-only mode when doing traditional picking, but switch to the screen or display when performing cycle counts and replenishments. The combination of these technologies has been facilitated through the development of multimodal terminals, allowing the use of different interfaces on a single device.

Voice-only applications	Voice-assisted applications
Order picking	Receiving
Cross-docking	Price checking
Inventory	Quality Assurance
(Pallet) Moving	...

MORE TERMINALS

Yet the choice of equipment will not only be driven by the type of interface, i.e. voice-dedicated or multimodal. Depending on the user and his working environment, the selection will also be made based on characteristics of the terminals, such as more/less ruggedized, GPS or GPRS connectivity options, keyboard availability, screen size, wearability or type of working environment, i.e. ambient or cold store. Although the users' requirements will depend on the type of application and working environment, they will equally need to achieve the most optimal Total Cost of Ownership. In other words, a company that has been working with brand X for many years, might prefer to use brand X's terminals for its voice applications as well because this will inevitably mean lowered training costs.

MORE ENVIRONMENTS

As mentioned above, the choice of the hardware platform will be inspired by the environment in which the operator will execute his tasks. Whereas initially voice has been largely confined to tasks in the warehouse or distribution centre, it now extends beyond these limits to be implemented in other environments.

- **On the shop floor** it allows for receiving, replenishments and price checks. It equally enables the picking of online orders from the e-shop (based on on-screen product descriptions instead of locations) and facilitates better backroom management (i.e. put-away and picking from the backroom to the store).
- **In production processes** it can be used, amongst other things, for quality assurance, assembly and kitting.

MORE SYNERGY WITH OTHER TECHNOLOGIES

Customers may also seek to optimise the return on their investment in voice technology by integrating it with other technologies, such as:

- **RFID:**
 - As a control mechanism when maximum accuracy is required: RFID tags are installed at the picking locations, the operator is equipped with an RFID reader worn on the back of hand to ensure each order is picked from the correct location.
 - As a means to facilitate enhanced traceability: An RFID tag is attached to the pallet or roll container. Using voice the operator confirms which products have been loaded onto each carrier and this information is written to the RFID label.
- **Automated Guided Vehicles:** voice systems can be integrated in picking zones where pallets are being transported using Automated Guided Vehicles (AGV's). This means pickers no longer need to steer their pallets or roll carriers to the next location, but can instead dedicate their time entirely to optimising the picking process.
- **Mobile printers:** voice enabled workers can be equipped with mobile printers that can be steered by voice commands, scanning, etc.

Generating choice: more applications in more environments, either or not combining different technologies

Mature DC Applications	Emerging DC Applications
Order picking	Inventory / Cycle-Counting
Cross-docking	Quality assurance
(Pallet) moving	Picking combined with RFID
	Receiving
Emerging Manufacturing Applications	Emerging In-Store Applications
Quality assurance	Backroom management
Assembly	Inventory / Cycle-Counting
Kitting	Price checking
Picking to production lines	Picking in the shop (for E-shop)
	Replenishment / Shelf management

Flexible software frameworks to meet flexible demands

The software platform should not only operate independently of hardware, but should also be enterprise-ready and compliant with a number of industry standards.

Guaranteeing freedom of choice across all of the above mentioned categories is only possible if the voice solution software platform meets a set of industry requirements and can be customised accordingly. It should not only operate independently of hardware (i.e. ready to run on any device), but should also be enterprise ready and compliant with the following industry standards:

- **Seamless integration with any IT infrastructure:** using the WMS/ERP's preferred communication protocol, to enable easy integration with any host system
- **Development in Java:** to handle multiple transport and message communication protocols on the server side, allowing easy deployment onto any operating system (AS400, Windows, Linux, Unix) that supports Java
- **Web/Application Server integration (JBoss, Websphere, Netweaver application-server support):** allowing for web-based applications and scalability
- **SAP certified integration:** SAP WM/EWM being the rising star in the WMS market, a SAP certified voice integration allows customers to voice enable their supply chain processes and thus to get more out of their existing investment in SAP
- **Service Oriented Architecture**
- **Proven scalability:** Flexible, transparent and configurable services that are easy to interact with
 - Multi-server installations: allowing the distribution of processes over multiple servers that communicate with the same database
 - Remote site support: allowing all processes to be run from one central server
 - Full redundancy capability: allowing processes to be run on duplicate servers

Finally, achieving a correct configuration of the software is crucial. In this case, mature software platforms based on frameworks with a wide variety of standard building blocks resulting from many industry implementations are an asset, as they allow for easy adaptation in line with the customer's requirements and ensure rapid integration. This approach has proven to be successful in supporting any required workflow.

Increasing chances for success

With customers asking for greater flexibility and choice, it becomes increasingly important for the solution provider who will ultimately develop and implement the solution to understand the customer's business challenges and supply chain processes. They will need to have a proven track record in implementing voice solutions, preferably with many installations in various industry segments and based on this he will be capable of advising the customers on the best-fit hardware and software. Experience with integrating other Auto-ID technologies will be an additional advantage, as combining different technologies allows for the synergies discussed above.

Conclusion

- Today's voice market is driven by a **desire for choice**. While order picking in the warehouse remains the killer application, logistics executives will seek to gain competitive advantage by voice enabling other processes as well.
- Looking beyond the established boundaries, they demand a flexible approach towards **interfaces, terminals, applications, environments and integration with other technologies**.
- Whereas the technology and hardware is ready to provide the desired freedom of choice, successful voice implementations will depend to a large extent on the **potential of the software platform**. Does it meet a set of industry standards? Is it easily configurable?
- If so, the final key to success will be the selection of a **skilled partner** capable of tailoring the complete package of technology, software and hardware to the needs of the customer, based on best practice and integration expertise.

About Zetes

ZETES INDUSTRIES (Euronext Brussels: ZTS) is a leading pan-European company in the value-added solutions and services industry for Automatic Identification of Goods and People (Goods ID and People ID). Zetes uses both emerging and mature technologies (barcode, voice recognition, RFID, labelling, printing, smartcards, biometrics), and develops Solution Architecture Frameworks to optimise the business performance of many customers in various market segments: manufacturing, transportation, logistics, retail, healthcare, finance, telecommunication, government and public services.

The Zetes group has its headquarters in Brussels, with subsidiaries in Belgium, Côte d'Ivoire, Denmark, Germany, France, Ireland, Israel, Italy, the Netherlands, Portugal, Spain, Switzerland and the UK . Zetes currently employs more than 800 employees (in FTE's) and generated consolidated revenues of €178 million in 2008.

More info: www.zetes.com

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