A Voice Assistant to combat the one level falls accidents.

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Today, digitalization affects all levels of the industry. This digital transformation leads to new uses, new ways of working and moving. Lightweight digital equipment (tablets, smartphones, smartglasses) allow continued access to information, including on the move.

At the same time, the number of accidents classified as “falls on the same level” is increasing sharply in the industry. Falls on the same level are responsible for nearly 20% of workplace accidents in France.

> The coincidence of these two pieces of information raises questions!
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> Could we not see a correlation between the increase in falls on the same level and the use of digital technology in mobility?
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> Let's see how the SPIX voice assistant could come to the aid of QSE managers looking to reduce the number of workplace accidents.

Falls on one level: definition and observation

Level falls are slips, trips, stumbles and other loss of balance on a flat surface. These falls can occur both inside an office or a workshop, as well as outside on a construction site or a site under inspection. Falls linked to changes in level (steps, sidewalks, inclined plane) are not considered to be on the same level.

> **Falls on the same level were the cause of 17% of work accidents recognized by Health Insurance during 2020. They are thus the second cause of accidents, behind manual handling (50%). but ahead of falls from height (12%)[1] .**

Falls, such as falls on the same level, happen when employees travel to their workplace. These falls are mainly the consequence of the combination of several risk factors linked to technical or organizational arrangements in the company. The increasing use of digital tools by employees in companies adds a risk factor relating to falls on one level.

This use of digital technology in business should be compared to the evolution of general public uses. In 2019, 65% of pedestrians surveyed admitted checking their phone while walking on the sidewalk or crossing a zebra crossing. A figure that is a sharp increase compared to the car manufacturer's previous survey carried out in 2015, where there were 50%[1]. The consequence of these behaviors has a strong impact on road accidents in France, since 6,000 pedestrian accidents can be attributed to the use of cell phones while crossing the road. This represents 6% of the total number of accidents involving a pedestrian.

> **A simple comparison allows us to understand that 4,500 accidents linked to falls on the same level in businesses in 2022 in France could be the consequence of abusive use of digital tools in mobility.**

However, falls are often considered an inevitability of the industrial world. Therefore, to reduce the number of falls on the same level, it is first necessary to change the vision of this type of accident, and then to develop a prevention approach which includes new uses of digital technology in an industrial environment

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[1] https://www.mercipourlinfo.fr/actualites/securite-routiere-de-plus-en-plus-de-pietons-smartphone-a-la-main

Falls on one level: SPIX as a prevention agent!

To develop an effective prevention strategy, the specificities of falls on one level must be taken into account. The factors likely to cause a fall on the same level are often poorly identified by employees, and hardly perceptible: dirty or cluttered floor, rapid movement, carrying objects, insufficient lighting, attention focused on a task other than moving. Thus, the element which will cause the fall may seem benign, and the occurrence of the accident often results from the combination of numerous factors.
Industrial organizations have the capacity to act effectively to eliminate risks linked to the primary causes: dirty or cluttered floors, rapid movement, transport of objects. The actions of QSE coordinators on industrial sites have a significant impact on these primary sources of risk.

> The difficulty in identifying and combating the risks linked to *attention focused on a task other than travel* is amplified by the use of digital technology in mobility, because the risk is also linked to the personal habits of employees.

We must return to the parallel drawn between the use of digital technology in business and the use of digital technology in everyday life. Indeed, we note « a divide between the customer experience /the general public/ and the employee experience /in business/. Customers have access to intuitive, pleasant and efficient applications while employees often use relatively heavy and slow ERPs (MES, CMMS, FSM).»[2]. The stress linked to the use of unintuitive industrial applications contributes to the employee's need for concentration, and therefore to their lack of attention to the environment when used on the move.

Based on this observation, two strategies are available to manufacturers to reduce falls on the ground linked to the diversion of employees' attention during their company trips:

- Raise employee awareness of the danger of using digital means while on the move. The strategy consists of encouraging employees « *not to consult their phones and tablets when they are moving*»[3]. This action, if it can reduce falls on the same level, will come up against the expectations of operational management. It can actually have a negative impact on the efficiency of employees in their monitoring or reporting tasks from the applications that are offered.

- Reduce or eliminate the source of risk by allowing employees to continue to use their digital tools while maintaining their means of paying attention to their environment. SPIX industry's proposal consists of reducing this risk through the use of a voice assistant to manage the digital interactions of mobile employees on industrial sites.

[2] https://www.focusrh.com/
[3] https://www.altersecurite.org/prevenir-les-chutes-de-plain-pied/

SPIX industry offers an intelligent voice assistant adapted to the constraints of the industry, which allows employees to keep their hands and eyes free and focused on their tasks, while allowing complex interactions with their digital tools.

Let's take two emblematic examples from industrial life: quality control and site inspection. The quality control employee is often in a fixed position, but moves around a lot in his work area. The site or construction inspector walks a lot in a changing environment.

Limit the movement of quality controllers to eliminate falls on the same level

Quality control tasks often involve carrying out numerous measurements, or visual inspections and reporting them in a digital quality monitoring tool: MES, DLS, QMS, etc. The operator therefore constantly goes back and forth over short distances between the part. to control and a computer station. These movements over a limited space can be a source of falls if the ground becomes temporarily cluttered.

The SPIX voice assistant allows the quality control operator to report all of the digital measurements and visual inspections that they carry out into a digital tool by voice. He no longer needs to travel to a computer station: the risk of falling linked to travel is effectively eliminated.

Free the hands and eyes of inspectors in mobile situations to reduce falls

The inspection of industrial sites or construction sites involves the movement of an operator over long distances, in a potentially changing environment. All observations and field findings made by the inspector must be reported in monitoring software: CMMS, FSM, etc. The operator must therefore wear mobile computer equipment, and enter the desired values as they go. His hands are therefore busy carrying his equipment (he cannot catch himself if he loses his balance), and his eyes are glued to his screen.

SPIX allows the industrial inspection operator to keep their computer support (tablet or smartphone) in their pocket, and to generate their inspection report by voice, entirely guided by the voice assistant. He keeps his eyes and hands free: the risk of falling is greatly reduced.

The intelligent and industrial voice assistant offered by SPIX industry is dedicated to industrial operators, to simplify and maximize their digital uses, without compromising on security. The SPIX industrial voice assistant works off-grid, in on-board mode, and is robust to noise.

SPIX industry's Voice Experience proposition makes it possible to develop the use of voice and voice assistance in industry, by involving field operators very early in the process and in understanding the use of voice, and by guaranteeing the manufacturer the performance of the solution delivered within a defined scope.

Conclusion

Today, health and safety issues at work are of paramount importance in the governance of industrial companies in Europe. Awareness initiatives for teams responsible for implementing QSE processes are reaching their limit, due to evolving uses and the personal habits of employees.

This phenomenon is particularly true with regard to initiatives to combat the sources of accidents such as falls on the same level. Due to the increase in the use of digital technology in mobility linked to the search for performance, the desire to provide information in real time, and personal uses, efforts to raise awareness among employees on this subject of conflicts with many brakes.

> In these blocking situations, the introduction of a breakage in usage becomes necessary. SPIX industry offers the use of an Intelligent Voice Assistant to enable the use of digital means on the move within the company, while reducing the risk of falling on the same level

With or without visual feedback for the operator, the SPIX Intelligent Voice Assistant allows you to be guided in carrying out technical tasks, or to report measurement or observation values by voice to an information system. The operator keeps his hands and eyes free and focused on his task. He limits or controls his movements and thus greatly reduces his risk of falling on one level.

> SPIX industry is betting on voice and voice assistance as an industrial work tool. The Voice Experience approach makes it possible to offer this disruptive use for all industrial processes.

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