

A brief approach to the benefits of applying voice recognition to maintenance management

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1. INTRODUCTION

A computerized maintenance management system, abbreviated as CMMS, continues to prove its usefulness as a support tool for maintenance management over nearly six decades, with relevant results. However, with the current scenario of exponential technological growth, a rapid and continuous evolution is expected, which is necessarily imposed also on the development of this type of tool.

The evolutionist theory present in the work "Origin of Species", by biologist Charles Darwin, states that the organisms with characteristics that best adapt to their environment survive. In like manner, a CMMS will have to continuously develop functionalities that adapt to the needs imposed by the maintenance field.

Given this prognosis and recognizing the importance of developing new features in a CMMS, this article will explain why a feature linked to voice recognition may meet future market demands.

2. CONTEXT

More and more companies are seeking strategies to reduce complexity in industrial processes, and increase efficiency and quality in the achievement of their goals. The Lean Management (LM) philosophy is one of the most popular concepts used for this purpose since it seeks to reduce any waste of resources by removing processes that do not add value to the final product or service [1].

In the area of maintenance management, a CMMS should also move in the same direction. This type of system is quite advanced, especially when compared to the use of a spreadsheet file, but technological evolution requires this tool to be continuously improved. It should namely: find alternatives for simplifying processes, contribute to increasing the quality of information, remove processes that do not add value.

The next lines detail how a voice recognition feature applied to a CMMS will be able to satisfy the three items identified above, among other

benefits.

3. BENEFITS

Speech recognition is the process that aims to understand and recognize human speech using technological processes. This technology can often be found in cell phones, such as "Siri", "Google Assistant", and "Alexa" features, including others.

It is necessary that the speech recognition software can easily identify our natural speech and reproduce it correctly in the CMMS, and its effectiveness should be at the state-of-the-art level, an example of which is the speech recognition software developed by the start-up Wluper [2], with a low number of unsuccessful recognitions.

The advantages of implementing this functionality are several and in different aspects. Those that satisfy the topics proposed above are listed first.

Simplification/removal of processes that do not add value to the final product or service:

- When reporting a work order, the technicians would no longer write on paper or type the information on a device, instead would input the information through voice recognition, with the help of an accessory device (cell phone, tablet, smartwatch, among others).
- Consulting the CMMS information would be made much faster and more agile since instant answers would be obtained instead of getting the same information through more time-consuming processes;
- The reporting of information would be made simpler, even in adverse conditions (for example, weather-related, excessive heat, or cold);
- With information centralized in the CMMS and a voice recognition feature that allows the input and output of information, several internal processes would be eliminated, increasing the technicians' independence and facilitating the manager's work.

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Increase quality of information:

- With voice recognition reporting, we can expect an increase in relevant, detailed, and therefore more reliable information, which can also be integrated with data analysis methods (machine learning), allowing for more informed decision-making.

Improvement of the collaborators' state of mind:

- Taking a maintenance request as an example, the information provided by the requester will tend to be more perceptible to its receiver, thus reducing internal communication problems and the inherent repercussions;
- Voice recognition will motivate technicians in their day-to-day work, as they will be more focused on the most relevant tasks.

These are only the most relevant examples. Since this feature is relatively versatile in its applications, the reader may find other advantages.

4. LIMITATIONS

Voice recognition also has some limitations, of course. The question is: why is it that a feature that appears to have so many qualities is not yet present in most CMMS? The answer lies in the fact that this type of technology also has its own evolutionary curve, which is why it has not yet reached the required level of effectiveness.

However, the forecast is changing. In fact, according to a report analyzing the period between 2021 and 2026 by the market research company Mordor Intelligence [3], the market for voice recognition is growing at a high rate due to the great demand, determined by various sectors. With the growth of the market, the technological evolution curve will also grow, and the state of the art will become closer to the required levels of effectiveness.

Aside from effectiveness, there may be other limitations, such as the software's ability to filter out noise - something that is quite common in manufacturing environments. If voice recognition is not able to filter out background noise, its use in noisy environments will be very difficult, and its proper functioning will be compromised.

Since speech recognition is inherently linked to new technologies, users who are not comfortable handling them may have problems when using them, so the usability of this feature may also be questioned, and thus prove to be an important limitation.

5. FINAL CONSIDERATIONS

Therefore, it is not unreasonable to imagine a future where voice recognition functionality will be present, in a natural way, in our daily lives, both personally and in the context of companies.

There are, of course, limitations, some identified in this article. However, it is believed, they will not represent insurmountable obstacles, given the inherent advantages of such technology, particularly for a CMMS, for which it offers several benefits, through which they meet the needs of the market.

These advantages, listed above, are not unique, voice recognition is very flexible in its applications, so there will be others, but it is believed that they represent the main benefits of applying this technology to maintenance management.

BIBLIOGRAPHIC REFERENCES

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