

Transforming learning through innovative gen AI solutions

ASPHI Onlus uses IBM watsonx to empower researchers across barriers



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Overcoming challenges in accessibility

ASPHI Onlus is an Italian non-profit organization focused on promoting inclusion and enhancing educational opportunities. Their primary goal is to create more accessible and enriching reading and learning experiences for individuals that face unique challenges, including hearing and cognitive impairments and non-native Italian speakers. These barriers often hinder effective communication and engagement with written materials.

The foundation, a pioneer in promoting digital accessibility, recognized the urgent need for advanced technologies to close these gaps. Through strategic partnerships, ASPHI Onlus has led the way in developing tailored solutions that address the learning needs of people with disabilities. This ambition guided them towards collaborating with industry leaders to craft new solutions capable of transforming traditional approaches to literacy enhancement.

100,000

Expected increase in accessibility of ASPHI services up to 100,000 users

30

Students will be able to read at least 30 narrative documents a year

Leveraging gen AI technology to enhance education

To address these challenges, ASPHI Onlus partnered with IFAB (*International Foundation for Big Data and Artificial Intelligence for Human Development*) and IBM Client Engineering to explore how artificial intelligence (AI) could be applied to the foundation's mission. They conducted a proof of concept (POC) involving [IBM® watsonx.ai™](#) enterprise studio, [IBM watsonx Assistant™](#), [IBM Cloud® Code Engine](#) and [IBM Cloudant™](#). The POC ran for 4 weeks. It included 14 people from ASPHI Onlus, IFAB and IBM, and made use of the foundation's data and publicly available data.

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The team developed “Limpide Letture” (or “Clear Reading”) as an innovative platform that empowers readers of all abilities by making complex texts more accessible and engaging. Using watsonx’s robust analytical abilities, they developed a tool that simplifies reading and guides the user to new learning material.

Limpide Letture transforms the user experience by:

- Classifying text into categories, like ‘narrative’ or ‘expository’
- Generating titles, summaries, and interactive elements to deepen reader involvement
- Simplifying the text in an easy-to-understand format
- Providing quizzes to test the understanding of content

Personalizing suggestions regarding optimal reading methods—presented through straightforward material or detailed guidance that highlights challenging vocabulary and sentence structures

To support the platform, the team also designed “LucIA”, an AI-powered virtual assistant available to users that can answer any questions about the text. The virtual assistant is built on watsonx.ai and deploys watsonx Assistant to manage the querying of texts to be read at any time, offering real-time assistance. In addition, IBM Cloudant and IBM Cloud Code Engine provide robust and scalable storage and runtime environments for the application, which allows large volumes of documents and session data to be stored and retrieved with minimal effort and maintenance.

Thanks to the AI tools of Limpide Letture and LucIA, ASPHI Onlus ensures every learner receives customizable resources that are closely aligned with individual competencies.

Using gen AI to unlock new potential for learning

The implementation of watsonx in the POC yielded remarkable outcomes. Experts at ASPHI Onlus predict a reduction in the number of users who abandon education programs or learning Italian through reading. Now, they expect that young students will be able to read more—at least 30 narrative documents a year—and enrich their vocabulary.

The solution is also expected to help ASPHI Onlus achieve its goals of increasing the number of users to 100,000, while diversifying and customizing the complexity, age, education level and proposed readings. Additionally, it is intended to reduce time

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spent learning Italian through reading and enabling users to move to the next level in just one year.

Through Limpide Letture and LucIA, ASPHI Onlus will be able to facilitate reading for people with hearing and cognitive disabilities and students of the Italian language by eliminating barriers of linguistic difficulty. Given the tools' enormous success in the POC, ASPHI Onlus hopes to scale this solution beyond students in the future.

The impact of the solution on the community is significant. Limpide Letture is not just a technological tool, it also represents a step forward in how inclusive education can be approached. By breaking down barriers, the solution fosters greater independence for individuals with disabilities and encourages a more equitable learning environment for all. As ASPHI Onlus's mission continues to drive innovative solutions, the collaboration with IBM is a significant milestone in the journey toward accessible education.



About ASPHI Onlus Foundation

The [ASPHI Onlus Foundation](#) (link resides outside of ibm.com) is an Italian non-profit organization of social utility that has been dealing with digital technologies for disabilities for almost 40 years. Their mission is to promote the inclusion of people with disabilities in school, work and society using digital technologies.



About IFAB

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IFAB (link resides outside of ibm.com) is a participatory, non-profit foundation composed of national and international companies that recognize data and AI as essential to their strategies. The foundation aims to serve as an independent, authoritative reference in the global scientific and cultural dialogue on human development, sustainability, and emerging sciences. It participates in major national and international networks in supercomputing, acting as a “link” between technology, research, and practical applications across industry and society.

Solution components

IBM® watsonx.ai™	→	IBM watsonx Assistant™	→
IBM Cloud® Code Engine	→	IBM Cloudant®	→

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