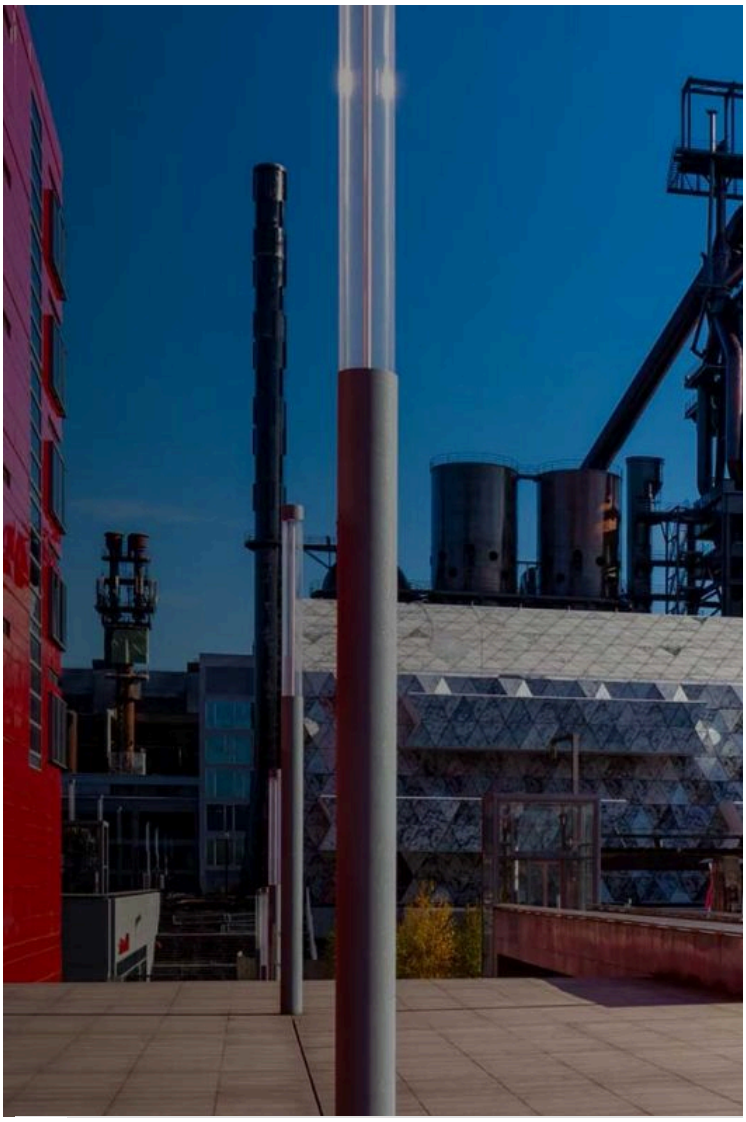
Luxembourg researchers ac innovation with AI

LIST builds state-of-the-art platform to empower compani researchers



verview High-impact innovation with AI Establishing trust and s

The application of data science has exponential value acro industries. Enterprises big and small are discovering insigh data through analytics that aid businesses in making strate decisions, optimizing the use of their resources and maxim

outcomes. Luxembourg Institute of Science and Technolog
one organization that understands that data science is criti
research advancements in all fields.

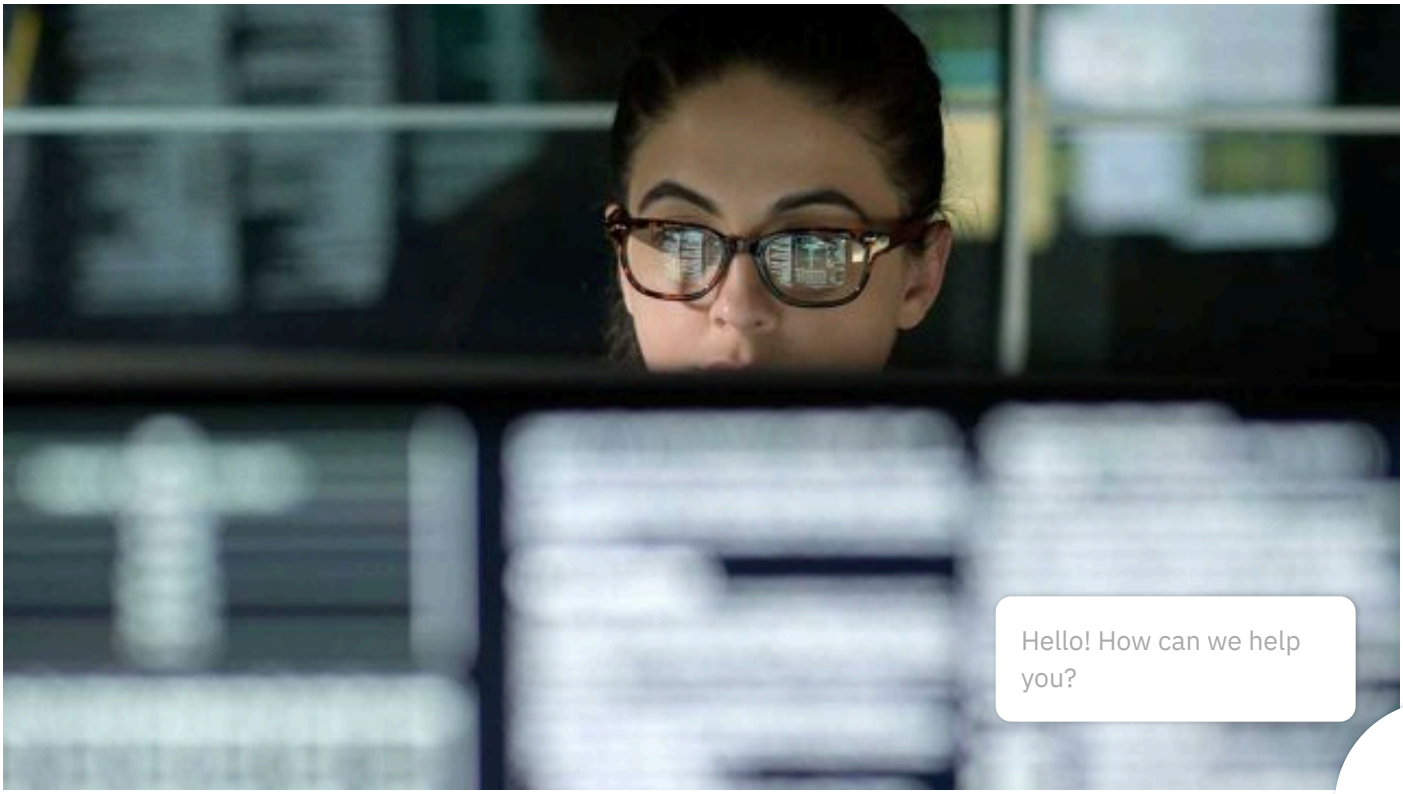
Data presents an invaluable opportunity for organizations to innovate, but
know what to do with it—LIST does. Partly funded by its government, the
technology organization must remain at the forefront of innovation. LIST f
applied research and technology transfer and the huge demand for data v
domain-specifics:

- **Environment**: biotechnologies, energy systems, agriculture and natura
  management
- **Informatics**: industry 4.0, automotive, mobility and logistics, health te
  finance
- **Materials**: nanomaterials, nanotechnology, structural composites and
  polymers
- **Space**: space resources for human and robotic exploration

The need to integrate a scalable platform that could handle complex and varied data sets became apparent to LIST. The organization needed digital tools to create a professional environment that enabled trust between data scientists and the private and public entities using the research.

“When you move on to big data sets, you’ll need additional resources and performance, and this is one of the important aspects that we need in a platform,” explains Eric Dubois, Public Affairs and Digital Platform Chief Architect at LIST. “A platform that can support all this activity, from early to mature prototypes with all the scalabilities.”

Another dimension of the proposed platform came down to compliance, as security and privacy issues are extremely important for LIST and its partners. The research organization reports on multiple facets of its data—its usage, security, privacy and storage—and it was integral to have a centralized facility to host the information for researchers to access.



Faster data insights

Researchers can focus on value-added activities and deliver faster data insights

Enhanced productivity

Productivity and professionalism of activities rapidly increases using AIDA

"The most important criterion for us choosing IBM® was the openness of the platform."

Eric Dubois
Public Affairs and Digital Platform Chief Architect
Luxembourg Institute of Science and Technology

High-impact innovation with AI

Working with IBM, LIST successfully developed and implemented the Artificial Intelligence and Data Analytics (AIDA) hybrid platform using the IBM Cloud Pak® for Data, IBM Watson® Knowledge Studio solutions and complemented with an Hadoop cluster. AIDA supports the research and innovation (R&I) activities of internal departments and provides R&I services and assistance to external organizations.

Up until now, LIST had most of its data sitting in silos. It was essential to the organization to harmonize its data into one extensive, interconnected repository that researchers could accesses for new projects—without hitting any blockers. The AIDA platform acts as a single point of entry for data management for research projects in a central and secure processing and storage infrastructure.

“This platform alone is complex. We use data analytics and AI to support the research from all four departments, but we also need to manage it,” Dubois says. “All of the data coming from these departments needs to be managed at a corporate level, to be used by private companies and public entities collaborating with those departments.”

The AIDA platform can support the development prototypes and minimum viable products and services, which can be transferred to LIST’s partners for operation in their execution platforms. Dubois explains: “The most important criterion for us was the openness of the platform. We develop new services and products, and we needed to transfer this process (a product prototype) to our clients and customers without exploiting the product and allowing just any vendor to look at it.”

Dubois continues, describing the need to manage the integration of one open-source component with another. “This is where there was a clear benefit coming from the IBM Cloud Pak for Data solution, in the sense that it’s possible to easily integrate and combine different components to scale up,” he says. “It was important for us to monitor open-source components to help in the selection, integration and combining of these components.”

> “A secure professional environment is very important for privacy. We have to build trust with our private and public entities, and we have that with the AIDA platform.”

Eric Dubois
Public Affairs and Digital Platform Chief Architect
Luxembourg Institute of Science and Technology

Establishing trust and safeguarding data

For researchers, the large-scale benefits of the AIDA platform are aiding innovation. They are now freed up from a lot of data cleaning and preparation, enabling them to concentrate more on value-added activities. Researchers are free to build new models or new data inside, accelerating the delivery of data insights and supporting the elaboration of their models before transferring them to to the Hadoop cluster for further refinement and optimization.

The AIDA platform delivers a top-notch professional environment that private and public entities can trust. It supports a collaborative design approach for continuous innovative projects.

“To have this professional environment is one way to build trust with our partners because they know we are working with state-of-the-art tools,” Dubois says. “By using this platform, we can demonstrate that we have security management as each researcher is managing your data securely and they have the tools for managing privacy.”

LIST met its objectives for AIDA in the following areas:

- Improve productivity and professionalism of its activities and harmonize practices, including project management
- Boost governance of data, moving from data silos to data spaces and managing security and privacy compliance
- Manage knowledge and reuse components
- Attract talent and community building
- Fulfill its research and technology organization mission with private and public partners to advance data analytics and AI

As for LISTS’s next steps, Dubois explains that the AIDA platform will also serve a new ambition of LIST to build a digital twin of Luxembourg.

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About Luxembourg Institute of Science and Technology

Founded in 2015, LIST (link resides outside of ibm.com) is a mission-driven research and technology organization out of Esch-sur-Alzette, Luxembourg. Employing over 600 people, 75% of whom are researchers or innovation experts worldwide, LIST develops competitive and market-oriented product and service prototypes for public and private stakeholders.

Solution components

- IBM Cloud Pak® for Data →
- IBM Watson® Knowledge Studio →
- IBM Watson Studio →

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Produced in the United States of America, March 2022.