AI AND DATA PROJECTS IMPLEMENTATION ON TERMINAL. HOW TO SUCCESSFULLY WORK WITH STARTUPS

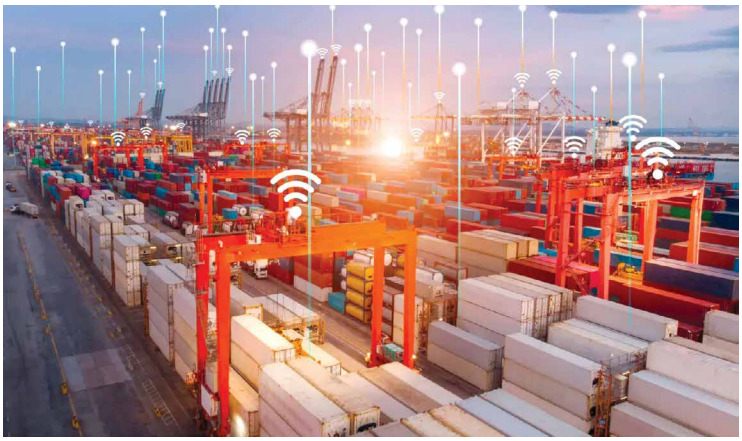
Xavier des Minières,
CEO, DMSLOG.Ai

INTRODUCTION

Artificial Intelligence (AI) tools tend to be very expensive to implement. This takes time and requires the availability of an entire IT and operational team to supervise it. The terminal sometimes fears that it does not have the technical knowledge to carry out such a project or that the AI supplier does not have sufficient operational experience. Implementing AI software on top of an already functional, and sometimes automatic, operations management tool is understandably a challenge for those responsible for running a container terminal's operations or IT system. Will the final product meet the expectations set for it?

Although the world of AI is still in its infancy, a stage is reached where data science is truly capable of handling an extravagant number of parameters and classifying them in a way and time no human brain could ever do.

In terms of terminal operations, this means that every operational parameter known by the human operator can be processed for every micro operation in a microsecond. Containers can be placed at the right block at the right moment, avoiding unproductive moves, or the best possible information can be shared with transporters in real time for their drop-off and pick-up, according to the best possible scenario.



But how can a terminal identify the right provider and bring these innovative projects to fruition?

PROGRESS OF AN AI PROJECT

As these solutions are mostly non-existent or theoretical, it is necessary to assess in advance one's ability to carry out such a project. Indeed, the terminal team will have to support it through process analyses.

Before embarking on an AI project, terminals that remain uncertain about its implementation and wish to ensure the highest quality of data and operational readiness in the field of AI innovation, should consider seeking consulting to get up to speed.

Indeed certain requirements will be necessary to launch the project: an easily accessible data lake, cybersecurity to standards, and the availability of technical and operational teams.

The AI service provider will have to get a complete vision of the terminal's operations to use each

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microdata that could influence its mathematical work.

Project management will then involve regular monitoring of the progress of the work of the AI service provider's teams because they must constantly be able to match the modeling of the operations with the reality on the ground.

Therefore, such an implication of the terminal teams forces these projects not to last for years, or it will be necessary to separate them into several phases.

The issues of each terminal, even if they are similar, will differ drastically in the configuration of the system, which is not indefinitely duplicable like a KPI interface or booking system mobile app could be. It is with this configuration task, that the terminal will have to help its AI provider.

At last, the objective is not a simple inventory of practices at a certain time, but ultra-rapid decision-making in real time on each of the operations. A long-term utilization of an AI tool on a permanent operational issue. The machine learning aspect will allow the algorithms deployed to remain permanently up to date or to integrate new determining parameters to reinvent themselves, making the solution better and better over time. The ideal solution would rely on a subscription pricing model, ensuring that it remains dynamic and adaptable to changing operations rather than becoming stagnant.

SELECTION OF AN AI PROVIDER

Terminals will have several options to choose their AI service provider. Either a large group established in the sector, or a startup specializing in its particular issue. When the terminal is part of a large group, it can rely internally to develop its solutions.

As the uses of AI are not terminals' core business, it is difficult for large groups to have an available workforce in the long term for the maintenance of an AI tool. On the other hand, they will be able to drive momentum by identifying, qualifying, or supervising optimization projects. Large groups like CMA-CGM or PSA have also launched their internal startup accelerators, which will be able to qualify needs and a use case to organize the work of a startup on their key operations.

Startups are the ideal response to a well-defined need and provide a hyper-innovative solution. Innovation is in their DNA, as they aim to create as fast as possible a reference product for the market. At DMSLOG.Ai for example, the team is made up of 50 per cent

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PhD in AI, spread between France and the United States, who work on hyper-specific issues of terminal operations. The AI-powered VBS deployed by DMSLOG.Ai in Canada is a benchmark in terms of the use of data for the optimization of truck flows at the terminals and provides permanent, real-time visibility on current and future container flow in the hinterland of the terminal.

However, if innovation will be at the forefront among startups, it is sometimes necessary to support their work on a large group to which the terminal can refer, at least for the integration of the results of the project.

Indeed, engaging a research team carries the risk of the project remaining in the research phase and not being able to utilize the AI-generated results. If the terminal is used to working with a terminal operating systems (TOS) integrator, it will be crucial to involve them in the project from the outset to ensure that the results can seamlessly integrate into the TOS rules.

For instance, when implementing a stacking strategy for import containers, DMSLOG.Ai had to work with the terminal TOS integrator to make its results usable directly "machine to machine". This is precisely why large groups and startups should not be pitted against each other.

PERFORMANCE MEASUREMENT OF AN AI SOLUTION

The major challenge is to be able to measure the performance of your solution before and after deployment. The performance will be measured at the modelization stage often in comparison with history, or by running it live in parallel with the creation of a standard case study, which will be used as a reference. Criteria for operational similarities between working days can also be defined to compare the results of a solution with similar operational days in history.

For example, DMSLOG.Ai will develop a simulator for the deployment of a resource-planning strategy that will make it possible to evaluate productivity improvement in real time the productivity and the realistic use case, until the objectives are achieved and the stability of the model is ensured before live deployment.

Once deployed, there is permanent monitoring carried out by the system directly to avoid data drift, with a tendency towards improvement (by definition, algorithms based on learning are refined and have better performance as they collect more new data). If a force majeure were to profoundly modify the modeling parameters, then retraining the model would not be enough and intervention by data scientists would be necessary.

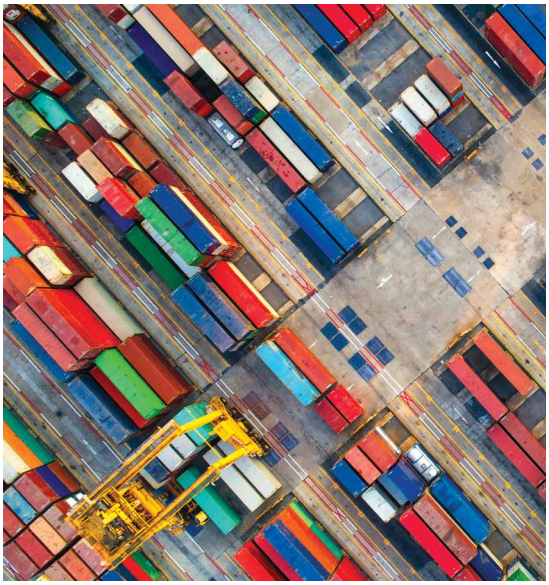
Thus during an AI project, the definition and evaluation of KPIs must be the priority throughout, allowing these projects to be carried out over the long term in good collaboration with the terminal.

CONCLUSION

At the end of the day, everyone thrives by doing what they are good at. Start-ups are at the core of R&D and innovation, while IT majors and TOS providers have a full understanding of each terminal's specific digital environment.

This is where cooperation takes on its full meaning: when they want to launch a data project, terminal operators need not worry about creating a new IT environment but boosting the existing one. While their main IT contractor will keep on running their system, the terminal can supervise dedicated innovation projects. If needed, the complete integration could be implemented by its larger IT partner.

At DMSLOG.Ai, the agility and adaptation capacity made partnerships between startups and large groups easy several times, demonstrating the pattern of a thriving cooperation model, all of that at the advantage of innovation for the terminal industry.



ABOUT THE AUTHOR:
Xavier is an accomplished Operations Manager with a global logistics background (last-mile, trucking, shipping).

He is now CEO of DMSLOG.Ai, a company he founded 4 years ago.

He holds a Master's degree in Supply Chain Management from Politecnico di Milano.

ABOUT THE COMPANY:
DMSLOG.Ai is a startup created 4 years ago operating worldwide to optimize the operations of container terminals.

The company has deployed the most advanced Vehicle Booking System in North America this year, and also other solutions to improve TOS performances.

After a successful first fundraising, DMS opened its first office in the US in 2023.

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www.dmslog.ai contact@dmslog.ai +1 (438) 409-3563