Performance and new technologies in the Mineral industry: Evolutive solutions are long-term solutions

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The evolutions of our real and virtual worlds are inseparably linked to technical advances. In these very busy times, many companies wonder and gropingly enquire about the selection and the adoption of a data digitalization system. The implementation of a technical and functional strategy integrated into the information system in the long term is paramount.

Each year, nearly 350 million tons of aggregates are used in France, which represents 5.1 tons per capita, administered for the construction of roads, railways, houses… However, behind this number hides a bubbling world of companies specialized in automation, weighing, engineering, electricity, transport, mining, etc. They organize themselves to be productive and competitive.
As technologies and associated functionalities become ever-present, how can businesses make sure they make long-term investments in their production data?

These actors enquire about the various technical solutions to implement with a view to measure their production and performance. They face an arduous path which will hopefully lead to an efficient, evolving and lasting solution!

Techno-centric vs ethno-centric: Considering user experience as a key factor for success

Today, the solutions on the market are limited to offering a technical architecture to meet a specific need at a given time. However, the needs of the customer being prone to fluctuations, there is a risk that those solutions will be insufficient in the long run.

Darwin said « ***it is not the strongest of the species that survives, nor the most intelligent. It is the one that is most adaptable to change*** ».

This is also true for implemented solutions. They must meet the requirement of industrial companies while adapting to their evolutions.
The user constantly needs change, and one only needs to look at the BtoC sector to see it. Our user requirements feed new activities, and we are forcing a technical and functional

convergence. Smartphones are a typical result of that process: before, we had a GPS and a camera… now we have geo-tagged pictures that we can store in the Cloud, print, etc.
Our uses allow functions to merge.

Whether they are on Android or on iOS, BtoC mobile apps are booming and undergo a spectacular development. GAFA and other consumer service platforms have been able to create essential tools which make daily life easier with intuitive, simple and fast interfaces.

But why shouldn't this functional merging also apply to the BtoB sector, including the mineral industry which is a key actor in a country's economy and development? Major industrial groups, now engaged in general digital transformation programs, are starting to undertake large in-company works. It is time to leap into the digital era – 4.0.

Behind each industry employee is first and foremost a consumer. When the latter chooses and buys a solution in a professional context – to solve BtoB problems – why impose a technical solution which cannot evolve or merge functions?

The stakes: Determine and characterize evolution-ready solutions

Today, various solutions focused on the theme of industrial performance in quarries use spreadsheets which display markers at the end of the month, or centralize data from the production sites on the Cloud, which may then be shared on smartphones.

Very often of the "one product solution per theme", these are reports instead of methodologies allowing real-time, continuous activity improvement.
To know one's production and performance is one step, but to act in real time on one's non-performance is the right challenge to tackle.

The French mineral industry thus produces 350 million tons of aggregates per year, but also data which constitute a source for information systems. Yet one still must communicate with these various machines and processes, and then record the data in an organized and lasting manner. To respond to those needs, an evolving and modular strategy needs to be found to capture and centralize process, analyze access data and to allow users to make operational decisions without being burdened with the technical aspects.

Designing a solution to support the customer and meet his needs in the long term

Every industrial company wants an information system, both for industrial performance and for maintenance, or even to centralize sales.
Each of this company's production sites must be therefore equipped to engage in such an approach.

Making activity reports, managing the state of machines, real-time reactivity… these are functions that the solution must centralize on the production site as well as in the group.
At all these technical and functional levels, the tool must help the user in his operations, needs, analyses and ambitions.

To consider, accept and anticipate needs in the various trades of the users, right from the start of the design stage, is crucial to help them with a lasting solution which measures up to their ambitions. Fed daily but designed with a long-term view, the core of the database guarantees the ability to integrate new customer requirements.
It should be possible to associate the performance data with exogenous information (ex: weather) to activate *deep learning* mechanisms and to decide which actions to take in real time according to a schedule and significant external factors. This technology can be accessed through data mining algorithms and the results of these calculations are stored and ultimately form decision aids and recommendations.

To sum up, 4.0 industries now require an information system which evolves with the needs of their actors. The databases must simplify the data and seamlessly absorb new flows to meet the evolving requirements. Furthermore, the long-term solution must process and communicate the new types of data to all the actors of the company for them to make appropriate decisions.