

Industry Trends.

COVID-19 &
Digitalisation

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by **EASYFAIRS**

Implementing Digitalisation for Covid Recovery.

Joe Nassif, President, Noon Advisory Group, explores how terminals can implement digitalisation to help them tackle COVID-19 if they haven't already...

The COVID-19 pandemic has had an impact on all areas of business operations and overall performance.

In the oil and chemical storage industry, global lockdowns have forced site and corporate management to rethink their strategy, particularly for functional areas such as environmental, health and safety management, labour deployment; and the use of automation systems in support of these new strategies.

Naturally, environmental, health and safety has expanded across the board with a greater focus on industrial hygiene related to infection prevention. Digitalisation has had to play a key role in constructing and managing workspace strategies and rules for operators, managing testing and contract tracing, all to ensure healthy workers and work environment.

But digitalisation can go further and help with manpower planning. Even with all the precautionary measures taken, there will inevitably be positive tests amongst staff, leading to time off and quarantining for a period of two weeks or more.

In cases where the affected employee is out for extended periods of time, due to illness complications or worse, the workforce at the site experience reduced manpower availability, driving up overtime hours and costs for the terminal company. Of course, hiring and training new operators takes time and money; making the complete availability of replacement manpower unrealistic, at least in the short-term.

To tackle this issue, terminal owners/operators can seize the opportunity to optimise labour through the development and adoption of digitalisation strategies that aim to reduce the strain in both routine and emergency work, while increasing the level of operator training and upskilling.

Why training and upskilling? Well, the greater the level of training for operating and technical employees, the lower the level of reliance on a subset of knowledgeable manpower to effectively and safely operate and respond to unplanned events.

For routine work, terminal operators should develop a list of work activities that consume a greater amount of labour than others; for example, tank gauging and other related tank top activities that require time to climb up/down tanks to perform.

Once you identify these areas, explore the technologies that could eliminate the labour involved. A suitable technology for tank top activities would be the adoption of custody transfer type gauging systems that eliminate the need for a good portion of labour that would be needed for physical gauging. Or, for oil products, you could just adopt devices that automatically readout the interface level between water accumulated in tank bottoms and the oil products sitting on top of it. You can then use the newfound labour hours to offset any higher demand for any lost labour hours as a result of COVID-19 positive testing and/or quarantining, or processes where such automation is not possible.

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For emergency work, it's a simple process of identifying and ranking what unplanned events could occur in the future that will place a huge amount of demand on labour resources, e.g., accidental releases to the air as a result of internal vapour build up inside the storage tank, or the unintended release of liquid or gaseous products to the environment as a result of pipe corrosion. Then develop a digitalisation strategy designed to anticipate and prevent them.

The key to such digitalisation technology is to use actual real time field data read from installed devices that would signal the eventual occurrence of unplanned releases and similar unplanned events. Such a digitalisation strategy would include field devices to read internal tank pressures and transmit them to the control room on a real-time basis, giving operators plenty of time to respond to any anomalies before they become more serious events requiring manpower response at all levels in the organisation.

Accounting for such risks will have the effect of mitigating the surprise events and their significant demand on labour and operating and technical staff, and reduce the need to rely on and cost for the use of third-party contractors to respond to them.

Even before the pandemic, successful digitalisation strategies needed to be dedicated to increasing the wellness of plant personnel, protecting the environment, upskilling the level of training for operations, maintenance and engineering teams, reducing capital asset and resource use, increasing productivity in terms of both labour and capital and increasing the level of services offered to customers.

It's easy to see why adopting a digitalisation strategy of this nature is a great way to streamline operations and help deal with the strain caused by COVID-19. But the bigger benefit is it will also make your operations more robust into the future.

I've often said, as an industry we should be grateful that the pandemic did not occur ten or twenty years ago when field signal technologies, Internet of Things (IoT) enabled devices and other solutions were unavailable.

A Better Way to Handle Data.

Sam Reid, CEO of Dearman Systems, explains why multi-terminal data unification should be a part of your digital transformation strategy.

Founded in 1988, Dearman Systems is a global leader in terminal automation and enterprise management software for the bulk liquid storage industry. From its offices in Tucson, Arizona and Houston, Texas in the US, Dearman serves nearly 200 customers worldwide.

Terminal Automation Systems and a Data-Focussed Product Strategy

Dearman's software handles a wide variety of terminal types including bulk petroleum, chemical, renewable fuels, aviation, liquified natural gas (LNG) and liquified petroleum gas (LPG) terminals. The company offers two implementations of its terminal automation software depending on the size and scope of the operation: RTG (Ready-To-Go Terminal Automation) for small/medium sized sites and TAS.net for larger sites.

Both offerings are flexible and open to integration with other siloed systems and hardware, including meter skids, weight scales, tank gauging systems, and secure access control systems. Dearman's highly qualified technical sales staff helps customers choose the ideal system for their terminal, based on the number of devices that need to be integrated.

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Through its Terminal Graphics Builder module, Dearman enables customers to take complete control of their terminal's process management functions and monitor product movement in real time. Users can see terminal overview graphics, specific loading or unloading bay activity, and current product storage location information.

Knowing that terminal configurations and their level of existing automation can widely vary, Dearman is committed to offering adaptable terminal automation systems that do not impose any hardware requirements. Dearman has pre-built connectors to more than 25 popular field devices and has built its core software with a modular design so it can be efficiently customised and tailored to customer needs. Once field devices are integrated, Dearman's software ensures secure access to the terminal, accurate product movement and measurement, and the appropriate documentation and reporting is available for all entities involved in the transaction.

Additionally, dedicated, hands-on support is a critical component of the Dearman customer experience. The company employs a well-trained customer support staff and offers 24/7 support to ensure operations go uninterrupted allowing product and its related data to keep flowing.

Multi-Terminal Data Unification

Aside from helping customers automate processes such as load authorisation, product movement (via multiple transportation methods), product measurement, documentation, and reporting at the individual terminal level, Dearman also enables its customers to continuously push their terminal data to a centralised location.

Dearman's UNITY product is a complete multi-terminal data unification platform that enables companies to share data between a central office and any number of terminals. UNITY can accept data feeds from a wide variety of open systems and protocols.

UNITY securely unifies data into a central hub and provides a reliable backup of on-site servers running RTG and TAS.net terminal automation systems. Dearman's philosophy is that it is generally beneficial to run terminal automation systems on-site, near the origination point of field device data, to ensure all communications are captured and utilised by the terminal automation process control. This distributes edge compute resources to each terminal and ensures operations are not interrupted by an internet outage. At the same time, all terminal data is passed to UNITY and UNITY has write access to individual terminals that are connected to the system.

A Centralised Data Source Means More Powerful Business Applications

UNITY knocks down data silos between terminals and serves as a platform for running business applications that draw on near real-time data from all your terminals. Instead of having to manually share data with the corporate office, data is automatically passed to a central system which saves time and improves accuracy. UNITY can effectively eliminate the tedious task of sharing stale spreadsheets from siloed data sources.

Accounting and reporting: Accounting and reporting is primarily an accountant interface that provides access to, and reporting functions from, the UNITY database transactions records.

Contracts and pricing: The contracts and pricing component of UNITY allows for the management of complex and diverse contracts and pricing mechanisms including buy side, sell side, throughput, fee based, hourly based, and non-monetary price items. It establishes contract governance policies in accordance with an organisation's established business rules ensuring consistency, accountability, and improved visibility to authorised personnel.

Invoicing: The invoicing component of UNITY allows users to generate invoices for monetary and time value of products and services. Invoicing can take place automatically or can be presented to managers for final approval before billing action occurs.

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Inventory management: Inventory management is a fully functional dual entry system that provides a full audit trail for complex bulk liquids distribution inventory and reporting requirements. Immediately know which position holders have what products across all terminals.

Scheduling and customer orders: Batch, block, and single orders for any type of transport provide your customers with the ability to pre-determine the shipment or transfer of products. Simple authorisation workflows, self-service scheduling, and real time status listings improve transparency in the supply chain and reduce the need for manual communication.

Enterprise reporting: Dearman has recently built a simplified data structure for accessing all your terminal data in the business intelligence solution of your choice.

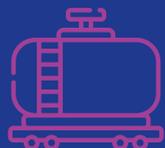
Transport Methods



Truck



Barge/Vessel



Rail



Order by order, real-time status listing



Scheduling and customer orders app view

Why UNIFY?

Aggregating terminal data into a single system might sound like an excellent digital transformation move, but is there a catch? What are the actual business benefits for setting up a centralised platform?

Central data source to draw on: Whether you use Dearman-built business applications or third party applications, you have a single database to pull from.

Data resiliency: If a server goes down at a terminal, you can fire up a new server and restore the data from the central system.

Powerful insights: When you can slice and dice all your operational data in one place, you can unlock insights. At the very least, business reporting will be much less time consuming.

Security: Dearman has deep expertise in securely transmitting and storing aggregated field device data. UNITY's architecture makes it a safe place to keep all your data.

After considering the benefits of multiterminal unification, it is clear that bulk liquid storage companies can enhance their operations by having all data in one place. Ultimately, companies that make multiterminal data unification a key part of their digital transformation strategy will have a leg up in the years and decades to come.

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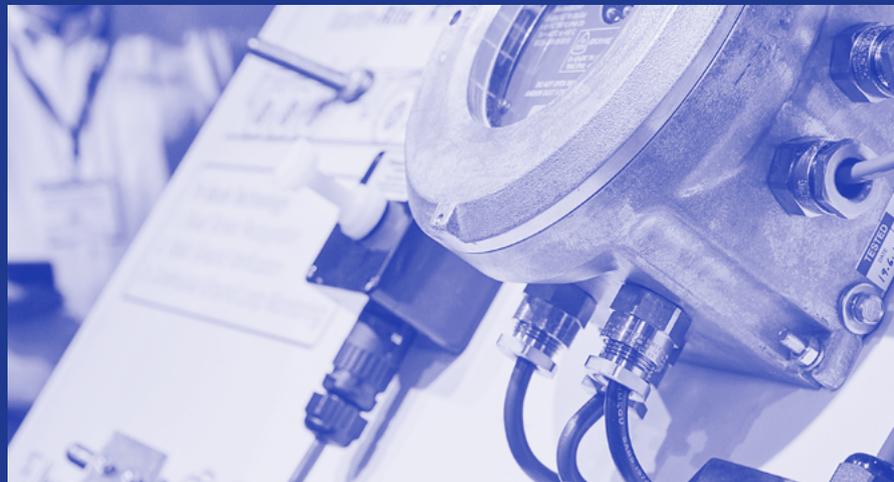
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Embracing the Digital Future of Tank Terminals With the Newest Cloud Services.

The disruptive nature of today's downstream industry presents oil and gas companies with big challenges: market volatility, oil price fluctuation, value chain fragmentation and energy transition. To stay ahead of the curve in this hard-to-predict environment, oil and gas companies must constantly turn the knobs, e.g. by adapting business models in a highly flexible manner, automating work steps, minimising operational costs and increasing customer experiences.

Implico sees cloud-based micro services as a key means for oil and gas companies to achieve this. These smart, digitised auxiliaries are lean, flexible and readily available. They neither require a huge investment nor a long implementation upfront. They build upon shared best practices and common industry standards. They are designed to make an immediate yet lasting impact. And they are part of a broad, open framework called the Supply Chain United.

Thomas Fahland, Head of Product Management, Implico



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Cea Systems Helps Terminals Manage Asset Data Remotely During COVID-19 Isolation.

Netherlands-based CEA Systems offers a software solution with a data-centric approach for asset data management.

Last year the pandemic struck and the tank storage industry, like many others, succumbed to social distancing. Even though physical assets are the most important items, supporting data grew in importance with global lockdowns. Conducting field checks to prepare for maintenance, inspection or engineering work would take hours taking social distancing into consideration.

CEA Systems' Plant4D software makes it unnecessary to go outside. It digitises assets in such a way that users have point cloud scans, 3D-models, P&IDs and flat data from any secure environment at home.

This makes the need for physical field checks unnecessary and saves users a lot of time. Having the correct specifications in a system is of great importance. Organisations often store asset data in various places in their offices and in different software systems resulting in departmental silos. Research and customer interviews showed that collecting simple as-built data is the most time-consuming and frustrating thing.

With Plant4D this is a thing of the past. You enter everything into the software once, and that is the place where you make all your updates, wherever you are. From now on you can get a clear insight into your asset data at any time, from any location, trusting that this information is 100% up-to-date, validated and complete. Whether this is related to Piping & Processes or Instrumentation & Electricity, Plant4D provides an overview.

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