

PORT OPERATIONS

BUSINESS INTELLIGENCE AT WORK

Business Intelligence addresses the challenges faced by ports and terminals by providing comprehensive solutions for real-time planning, management and control of operations

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Ports and terminals around the world face challenges of reducing equipment and labor costs, managing growth without large capital investments in land and berth space, and developing and proving new technologies. On top of the challenges is the added pressure on terminal operations from owners and customers to augment profitability, increase throughput, exceed customer service goals, and prove a return on their information technology investment.

Business Intelligence (BI) addresses all these challenges by providing comprehensive terminal solutions for

real-time planning, management and control of port and terminal operations and inter-modal facilities. These business intelligence terminal solutions also provide immediate visibility to critical data so you can make better strategic decisions.

BI reporting analytics combined with KPIs and Dashboards help executives at marine terminals to achieve continuous improvement, get quality and timely reports, and make strategic decisions faster.

Why is BI?

BI can optimize a terminal's performance by utilizing its port resources more efficiently. It helps executives at terminals to achieve continuous improvement, get quality and timely information, and make strategic decisions faster through alerting, scheduling, reporting, forecasting, auditing, what if analysis, predictive analysis.

The terminal business is highly mission critical and a 24/7 operation, involving very highend and varied applications across the domains of operations, services and engineering. Since each department is inputting data into different systems, consolidation of reports is a huge task and the accuracy is also hard to determine. There are multiple data sources involved as well as text based applications making the "timely" data analysis critical and challenging. BI should be looked at primarily to bridge the time gap between the need for report and the availability of the same. With BI, companies can manage not only to provide standard reports, but also to enable critical data analysis which might not have been attemptable earlier. The savings from the solutions can be myriad from time required to make the reports, the analysis to be made and enabling faster decisions.

Analysis with BI

Yard inventory performance analysis, this interactive visual model allows executives to understand the container movement impact analysis by container size. Executives can further analyze it commodity wise, creator wise, size wise. It will give analysis of blockage analysis that how many containers are not moved in last 7-10

days, analysis of containers entered in yard and exited from the yard by rail or road. It will give the analysis of how many containers has been moved from community, yard as well as vessel.

QC wise (Crains) Analysis allows executives to understand about the QC productivity. It will give the analysis on load, unload and total performance ratio of QC in last one hour, QC wise productivity in last 24 hours, QC wise container movement i.e., particular container has moved which type of containers in last one hour (20 footer, 40 footer, empty, full containers) and QC wise movement analysis (Load, unload and total movement).

In **Truck Turnaround Time Analysis**, visual model allows executives to understand the collective truck turnaround time of trucks by gate, by truck, by container and container size. The executives can further analyze truck wise results by comparing their 12 months truck turnaround time by their container type and size. It will also give analysis of average truck turnaround time of gate to equipment and equipment to gate and gate wise truck turnaround time with in time and out time of truck. So we can identify the root cause problem to delay the movement.

Vessel Productivity Analysis allows executives to understand the vessel productivity analysis including hourly comparison of container movement with load and unload event and analysis on what is container arrival ratio i.e. how many containers have been entered in last one hour. It will also give the hourly comparison analysis on equipment performance analysis of last five hours and analysis on daily productivity of vessels and also it will

Types of dashboards



give the daily analysis of how many vessels arrived and how many vessels discharge in current date and QC productivity of vessels in a one day.

While examining, the point of a marine terminal operations enterprise dashboard is to allow the marine terminal management to monitor yard operations in real time and to alert them of conditions outside of normal boundaries. Marine terminal operations fall into three main areas of focus in terms of production management:

- Crane operations from/to vessel and train/truck
- Yard production of container stacks
- Container parking and rail cars, and gate operations involving entry and departure into the terminal

These dashboards help the operational users to avoid mess at the ports with lines of trucks awaiting access to terminals.

Using the dashboard, one can

define lots of marine terminal KPIs like:

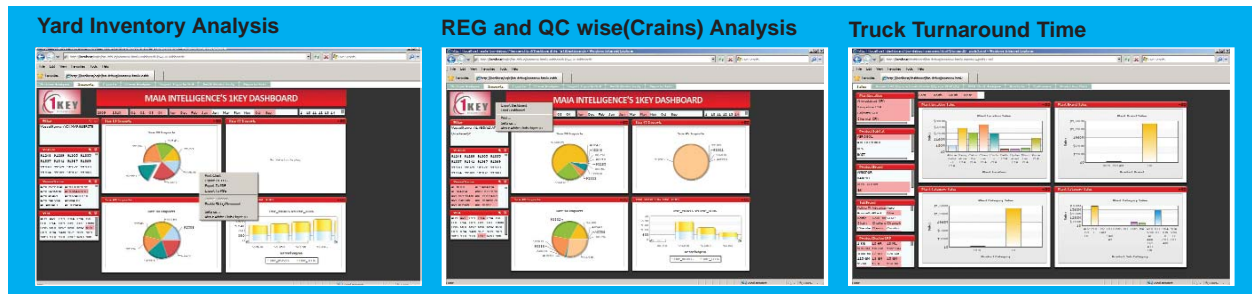
- Container Gate Moves
- Average Turn Time
- Yard Inventory of Containers
- Outbound Trucks Still on Terminal Over 1 Hour

With BI, connect multiple database and multiple applications to give single unified view of enterprise-wide data and get benefits like saving Time, accuracy, authenticity of report, manpower saving and much more. BI turns our enterprise-wide data into actionable information. It helps to monitor, measure and analyze the health and performance of the terminal's operations.

The important point, obviously, is that time equal's money.

BI users

- Shift managers
- Gate manager
- Maintenance heads
- Finance users





BI allows executives to understand the vessel productivity analysis, including hourly comparison of box movements

- Commercial managers
- and heads of the department

There are a variety of functional areas you could target with BI, like the following:

Operations

- Railway movement
- internal & outside truck movement
- RTG movement
- QC (Quac Crane) movement
- berth productivity
- ship production
- shift production

Commercial

- Service (route on which the vessel has to move) -wise revenue,
- Service-wise, line-wise, voyage-wise productivity

Claims & Contracts

- Vendor Data Analysis and comparison
- claims for accidents and near misses
- 3rd party as well as own claim tracking

Finance

- P&L analysis
- Outstanding receivables / payables
- customer / vendor ageing
- B/S comparisons and analysis
- budget v/s actuals and monitoring

- HR - Head count reports
- attrition rate
- blue / white collar analysis

Cranes are the bread and butter in the port terminal freight service industry. So reports like gross/net crane rate, crane idle hours, avoidable / unavoidable delays, and scheduled / un-scheduled crane maintenance give companies more value in operational efficiency and save cost, increase productivity. Even if the data required for all such analysis is scattered across and they use different database like MS Access, Oracle, Sparks, Intranet, MS Excel, Text, or any other database from vendors, etc.

Disparate data sources, local excel files and the need to consolidate and provide a single version is the primary justification for a BI tool. Analysis of the enterprise-wide data is always critical and most of the time challenging for such companies.

This can be solved with the help data warehousing, and transforming this warehouse data in the management reports thereby providing actionable data to the business users. Even critical analysis of live operational data is possible which is not feasible without a BI/DW solution. BI helps the commercial operations. It helps eliminate the

Excel-based report creation for analysis, which is prone to manual errors. With BI tool, connect directly to OLTP and get real-time and accurate reports. The companies no longer need to rely on vendor data for making payments; they can use the reports from a BI solution.

BI could also be used to monitor business operations and the analytics that helps you to compile reports and make good use of the data. In short, the goal of BI is to turn your data into actionable intelligence.

BI enables your management and staff to gain visibility into real-time operations, analyze historical performance, institutionalize best practices and track performance metrics specific to your operations.

Standard features of BI reporting analytics software:

- Cross functional reporting
- Ad hoc reporting
- Drill down for detail Informantion
- Forecasting and what-if analysis
- Scheduling, mailing and alerting
- Desktop ticker for live reports
- Intelligent data search capabilities
- Integration with any application
- Export to any format like PDF, Flash, Excel, PPT, Word etc.

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(Mr Gala is manager, operations with New Mumbai-based MAIA Intelligence)