



CRG PortMaster

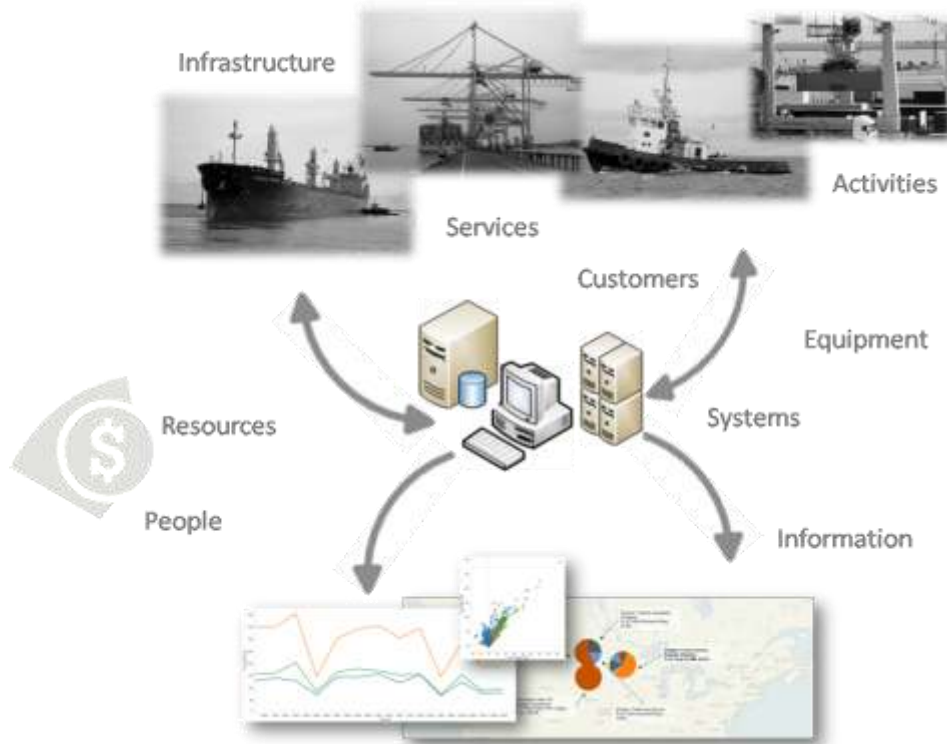
Port Profitability in a Box

Corporate Renaissance Group



CRG PortMaster: Port Profitability in a Box

CRG PortMaster is a dynamic costing and profitability solution for ports that covers both Port Operations and Port Control. PortMaster seamlessly combines the financial and operational data and provides multi-dimensional insight into services, processes, activities and resource utilisation. With PortMaster, senior management can now make fact-based and informed decisions.



The management information provided by PortMaster will enable port managers to:

- Link financial data to operational data thereby providing multidimensional views of the operational efficiencies
- Allocate overhead costs to specific activities and services – providing the true cost of services
- Determine “true” rates
- Identify areas for improvement – value versus non-value work
- Access unit cost information of all outputs being delivered
- Access and influence the profitability of outputs, services and clients
- Determine the efficiencies and effectiveness of assets such as cranes
- Create integrated performance dashboards of all port operations

PortMaster has two integrated components: FlexABM®, a robust, flexible and enterprise scale costing engine, and Tableau™, an exciting world-class multidimensional analysis and visualisation application. PortMaster also contains the FlexWeb™ module to collect data over the web, which is not currently on any system. Performance Management and Supply Chain modules can also be added.

An added benefit is that Tableau is a stand-alone rapid Business Intelligence (BI) development tool that seamlessly integrates with most databases to provide added information without any technical (IT) expertise being required to generate ad-hoc reports. This enables port management to access other data and applications for better reporting and analysis.

PortMaster provides:

- Full tracking of resources to the activities that are being performed by various business units and cost centres
- Attribution of overhead costs to activities thereby providing the true cost of service delivery
- End-to-end cost flow transparency – from resources through activities/services to products and clients
- End-to-end performance transparency

A cost flow model for a typical port is shown in Figure 1

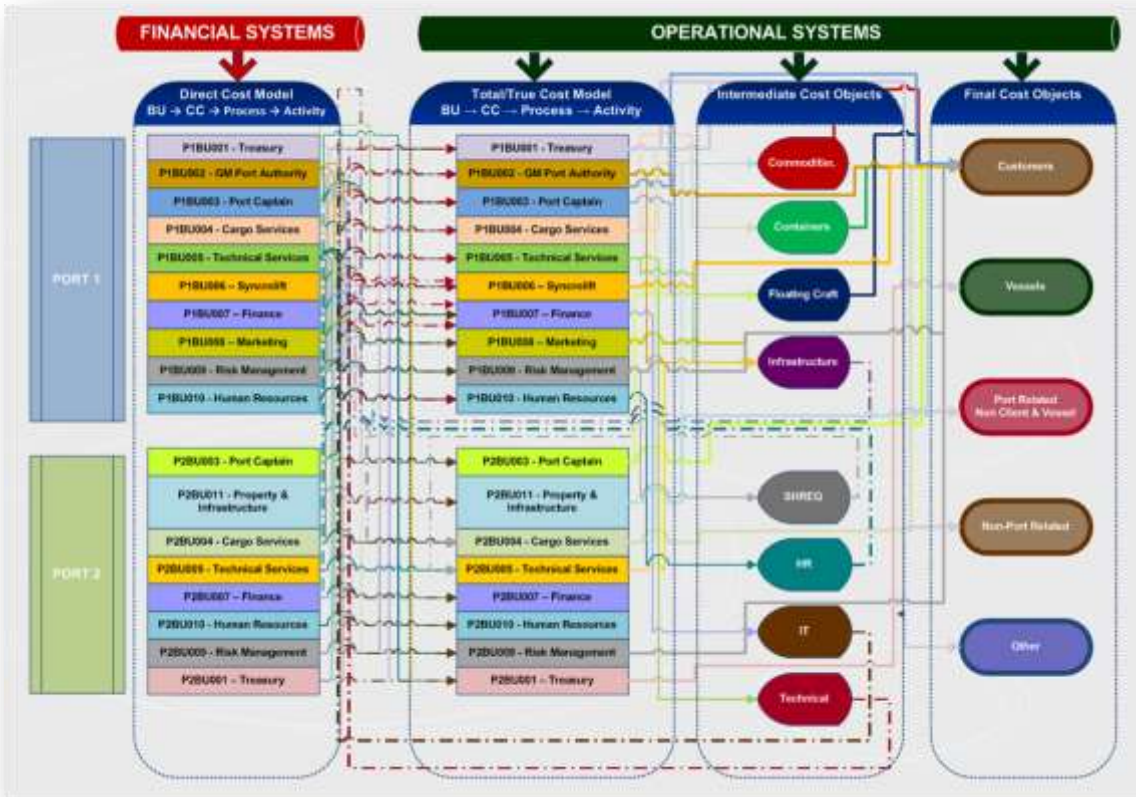


Figure 1: A Typical Port Model

PortMaster can accommodate many levels representing clients, vessels and other port and non-port final outputs and outcomes.

How does PortMaster link Resources to Activities?

Once the financial data has been mapped to the activities, PortMaster, through FlexABM imports the financial data from the financial system. Employee effort is imported from the time management system or captured through the FlexWeb module. The reports generated through Tableau will answers typical questions such as:

- What is the direct cost per process and activity?
- What is the fixed/variable split?
- What resources are being consumed by each activity?
- What are the resources used and what are their associated costs within each business unit, cost centre or work team?
- What are the top 10 most costly activities?
- What are the most expensive resources and where are they being consumed?
- What are the Resource Drivers and their quantities?

The system can also be extended to access the base data and to supply traditional financial reports.

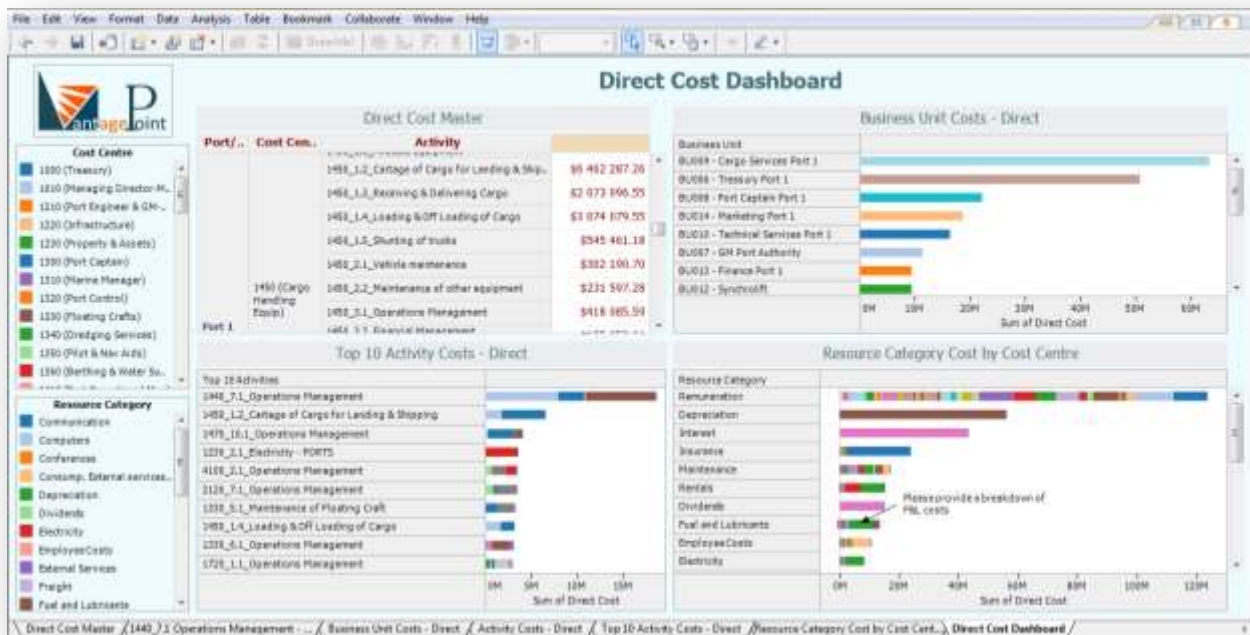


Figure 2: Dashboard Visualising some Answers to These Questions

An unlimited number of multi-dimensional reports and dashboards can be created and presented as single reports or in an executive briefing book. The dashboard depicted

above shows at the top left the overall costs of the organisation by cost centre and activity, in a cross-tab format. To its right the cost per business unit is shown with full drill-down capability to cost centre and activity level. The bottom right report shows the resource costs as extracted from the General Ledger with the distribution by cost centre reflected within each bar. Annotations can be included in the report or dashboard, to enhance the communication and feedback process. The bottom left report shows the Top 10 activities and as can be seen a mouse-over will provide additional information on each component included in the report. The colour legend on the left can also be used as a filter and is linked to all reports in the dashboard that include that specific dimension. No technical support is required to generate these reports or dashboards.

The True Cost of Providing Port Services

The direct cost model only shows how the various resource costs are linked to activities, which is an important first step as it shows management exactly where they are spending their budget. However, what is more important is that managers are made aware of the true cost of providing services to clients. It is here where the true power of PortMaster, made possible by FlexABM's powerful calculation engine, is applied.

True cost information in a port environment is essential due to the very high cost of infrastructure and other overhead costs. The challenge is determining the charges to clients, what are the actual or true rates of these services by service category? PortMaster enables management to determine the true cost of services through accurate attribution of overhead costs to the various services through the activities that are performed by the support and operational entities within the organisation.

This functionality answers the following questions:

- What is the total cost of providing services?
- What is the unit cost of every activity output?
- What proportion of the total cost of a particular service can be attributed to support services?
- What is the cost of operating a particular type of equipment?
- Where does this cost come from?

Figure 3 answers the question “Where does this cost come from?”



Figure 3: Cost Visibility

The dashboard above shows through the top two reports, the true cost broken down by activity (left top) and by cost centre (right top) and immediately shows the manager the areas of high-cost. In this example it is quite clear that activity 1440_7.1 Operations

Management has a very high cost. The bottom two reports indicate where the cost originates from. The bottom left report shows the direct cost component – the direct link to the General Ledger – and it can be seen that in this case the largest proportion of the cost is for rentals and fuel and lubricants. The bottom right report shows what other activities contribute to the high cost of Operations for this particular cost centre. Filtering is possible through the two quick filters installed at the right of the dashboard.

Determining Tariffs

Due to a lack of true cost information, Port Authorities find it challenging to determine the tariffs for the services they provide to their clients. In most cases an inflation factor is applied from year to year based on the previous year's figures. Vessel owners are however placing more pressure on Port Authorities to lower the cost of their services as the cost pressures on them have also increased.

PortMaster provides port owners with the “true” unit costs of providing services due to the accurate way in which it attributes overhead costs to activities.

Figure 4 shows a dashboard consisting of three unit cost reports.

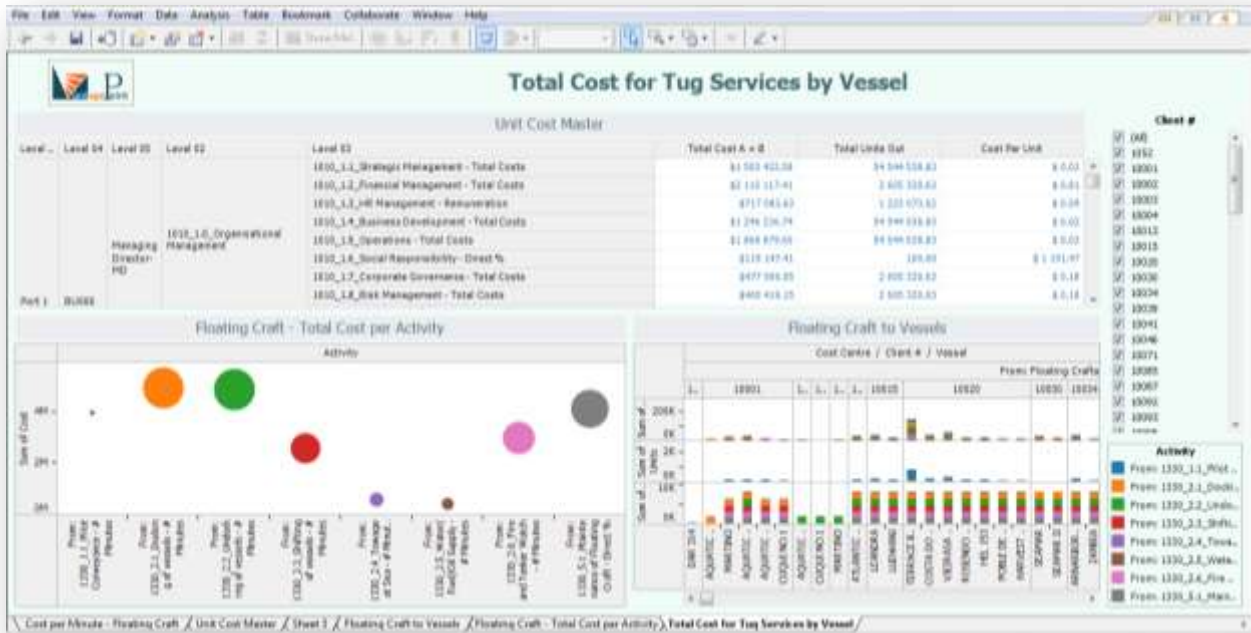


Figure 4: Unit Cost Dashboard

This dashboard shows the unit cost per activity for services rendered by tugs. The Master Report provides a total view of all activities along with their respective cost and output measures. The bottom left report shows the total cost by activity, with the

diameter of the circles indicating the extent of the unit costs for that particular activity. The bottom right report shows the total cost, units and unit cost by vessel. The quick filter on the right of the dashboard gives the user the ability to filter on a particular client account and view all the vessels that are part of its vessel portfolio. The colour legend at the bottom right indicates from which activities the costs originate and can also be used as a filter.

How Profitable are Services & Clients?

PortMaster provides Port Management with information on the profitability of all products, services and clients. With revenue and cost information extracted from the financial system and linked to the operational systems and data, PortMaster's costing engine calculates the profitability of all the services that the port is providing, such as the loading and off-loading of commodities and containers. In addition these services are mapped to the clients and vessels that the port provides these services to and profitability information of these are then supplied.

Figure 5 shows a profitability dashboard that contains examples of profitability reports for commodities, containers, and vessels.

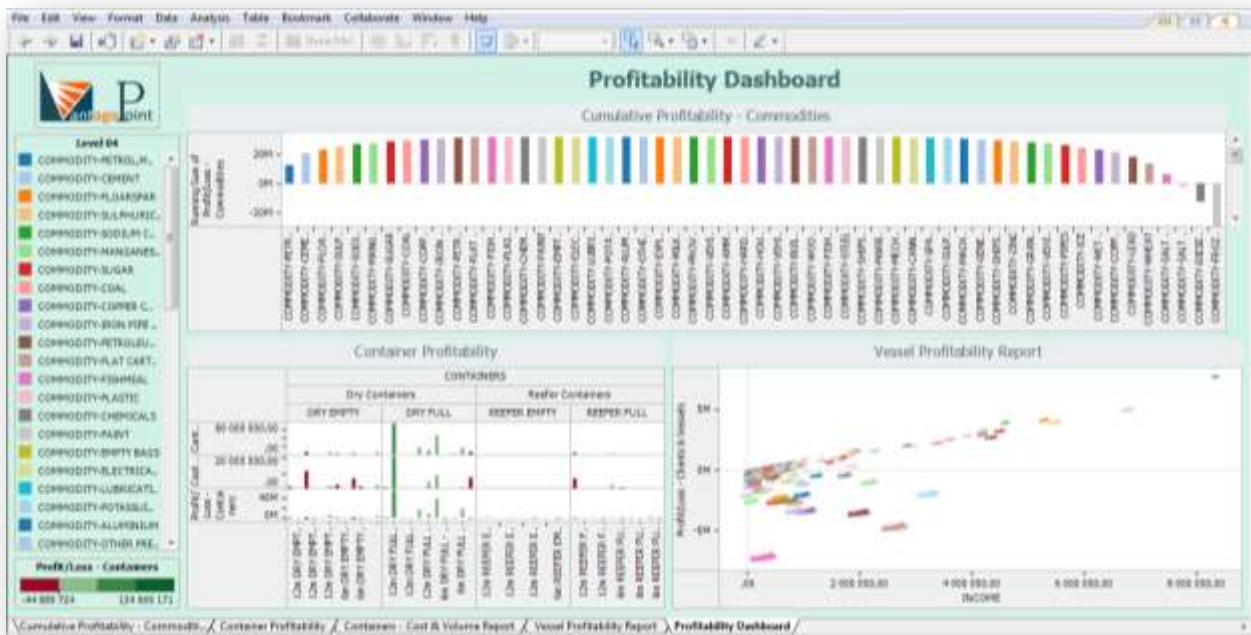


Figure 5: Service and Client Profitability Dashboard

The profitability dashboard shows the profitability of commodities at the top and containers and clients and vessels below. The Commodity report shows the cumulative profitability by commodity. These can be grouped by bulk and break-bulk and by package/container type. The container profitability report shows the profitability by container type and size. The Vessel profitability report shows the profitability against income for each vessel. The size of the rings is an indication of the total cost associated with a particular vessel. Each vessel can be grouped into vessels types, country of origin, vessel by agent or client, etc.

Performance Management – Berth Productivity

PortMaster enables Port Managers to visualise their Key Performance Areas (KPIs) and Key Performance Indicators (KPIs) in an easily recognisable format. Performance Dashboards can be published on the intranet and web or distributed to the various server users who can interact and communicate with each other directly through the web. This will ensure that productivity is optimised as asset utilisation can be actively monitored and reported on in an understandable, responsive and transparent manner.

Figure 6 shows a dashboard visualising wharf crane utilisation, measured as moves/hour.



Figure 6: Performance Management Dashboard - Crane Moves

Figure 6 is an interactive performance dashboard depicting crane utilisation in moves per hour. Starting with the left-hand column the top left colour legend shows the performance criteria applicable to this KPI. This legend is applicable to the main report on crane moves/hour, *Crane Productivity – Moves/Hour*. Below the legend is a small dashboard indicating the aggregated performance of each crane. By selecting a specific crane on this dashboard all the other reports on the dashboard will be updated to show the detailed performance for the crane selected. A text box with a description of the dashboard functionality is shown in the bottom left corner. The three main reports depicted in the dashboard show the performance per wharf crane for each vessel loaded or offloaded. A mouse-over will show the detail per crane as is indicated for WC3. Filtering is also possible by selecting a specific crane – the column – or a specific vessel by double

clicking on the crane image. The size of each crane is an indication of the total number of moves by that crane for a specific vessel. The bottom left report show movement within preselected ranges of moves e.g. *Vessel Moves between 1000 – 2000 moves* and the average rates for a specific range. The bottom right report shows moves for a specific data or date range. The right hand column shows the various filters that can be applied for this specific dashboard. In the bottom right corner is a range selector for moves/hour where the user can select a specific range to be reported on.

Figure 7 depicts a PortMaster customised berth productivity dashboard. Easy access to a library of icons and shapes and the ability to present graphs within graphs enhance the visual feedback and experience of users. PortMaster through Tableau brings data from various systems together through the click of a mouse and therefore enables port managers, planner and customers to view multi-dimensional reports without major IT interventions being necessary.



Figure 7: Berth Productivity Dashboard

The Berth Productivity Dashboard shows reports consisting of shapes and bullet graphs (graphs within graphs). In the left-hand column a text box has been included that describes the measure parameters and below that a report was created that shows the reasons for productivity targets not met. In the second column two shape-driven reports have been included with the first showing the number of ships where targets were achieved and not achieved. The second shape-driven report shows berth performance

on a four-point scale. Below that a bullet graph shows the average productivity rating by berth. The third column shows performance by vessel and below that the performance by mooring team. The fourth column shows a selection of filters. All reports and filters are interlinked.

Linking the World to Your Data!

Ports link a country to the rest of the world. Port authorities are “drowned” in geographic data with regards to vessel identification, countries of origin or destination, current geographic position, etc. PortMaster, through Tableau, provides “seekers” of geographic intelligence with mapping visualisation solutions that are easy to use and complete. No speciality map files, plug-ins, fees or third party tools are required.

Figure 8 shows an integrated web-based visual dashboard containing geographical information linked to vessel points of origin and destination.

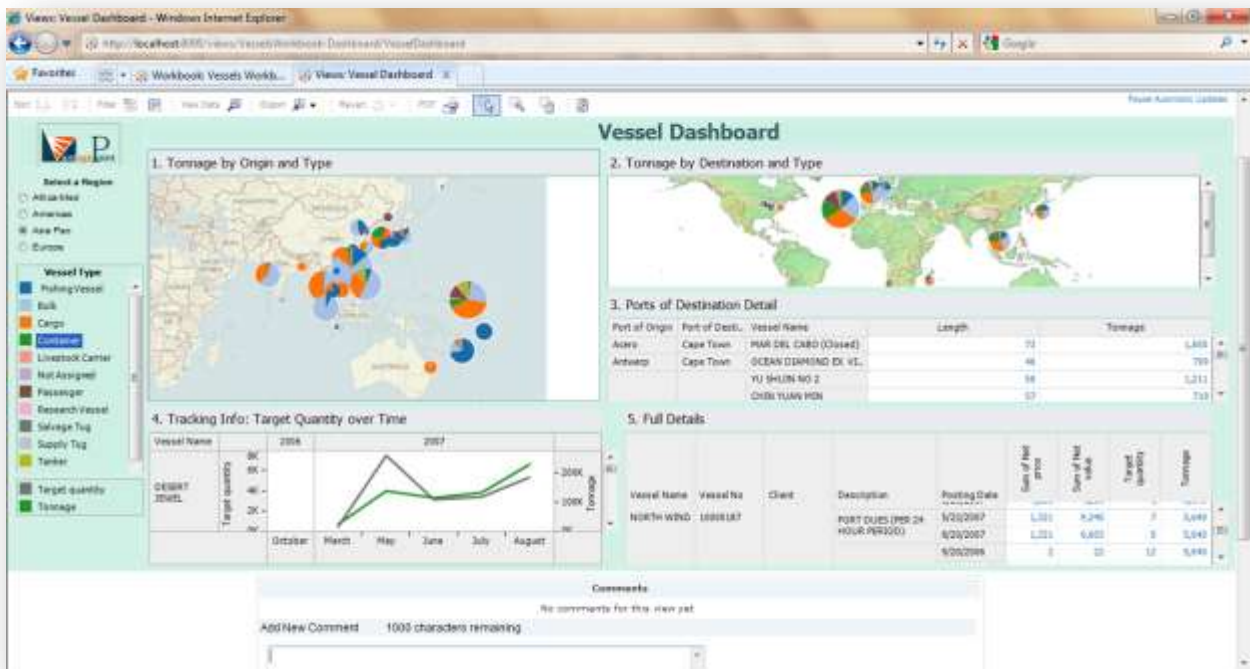


Figure 8: Linking Data to the World

This integrated Web dashboard created with Tableau Server, is an excellent example of what PortMaster can provide in terms of geographic intelligence combined with other operational data that normally resides on the servers of port authorities, on the Web. Starting at the top left, a quick filter has been incorporated that gives the user the ability to filter by region and vessel type. Report 1 shows a map with the tonnage moved by port of

origin and type of vessel. Direct filtering and drill-down functionality is also possible by clicking on the pie chart on the map image, which will automatically filter the other four reports as well, if they apply. Report 2 shows a different style map with tonnage and port of destination, full filtering capability has also been built into this report. When filtering on any pie chart in Report 2, Report 3 will reflect the associated destination detail with regards to vessel name, length and tonnage. Report 4 shows the tracking detail of a vessel over time with cost and tonnage information reported on, whilst Report 5 will provide the full details of the vessel. In addition to the dashboard a mouse-over the vessel will provide a link to any web-based tracking programme to see the current position, photo and other details of a specific vessel. A comment box is also provided giving the recipient of the report the ability to comment or give feedback on performance or the report in general.

Rapid-Fire Business Intelligence

PortMaster not only links the world to your data, it also seamlessly integrates with sixteen different data sources without any programming being required. This is called, "Rapid-Fire Business Intelligence (BI)"!

Rapid-fire BI is a self-service business intelligence approach that provides true business intelligence to information users. It is much easier to deploy, administer and scale. It also allows users at all levels to ask and answer questions themselves – in a matter of seconds. Rapid-fire business intelligence lets business users explore and analyze their data independently, while reducing the burden that heavy BI platforms place on IT.

Rapid-fire BI has the following attributes:

- ***It is User-Driven*** – The user creates the reports without IT intervention
- ***Easy Visual Interfaces*** – Results are visual and interactive. If people don't find the software easy to use, they won't use the software. End of story.
- ***Flexible Configurations*** – Single user, single data source or multiple users with multiple sources, the software handles it all.
- ***High Performance*** - BI needs to run fast.
- ***Easy Administration*** - IT can support the new BI application with existing staff and infrastructure. No professional services (or fees) are required.

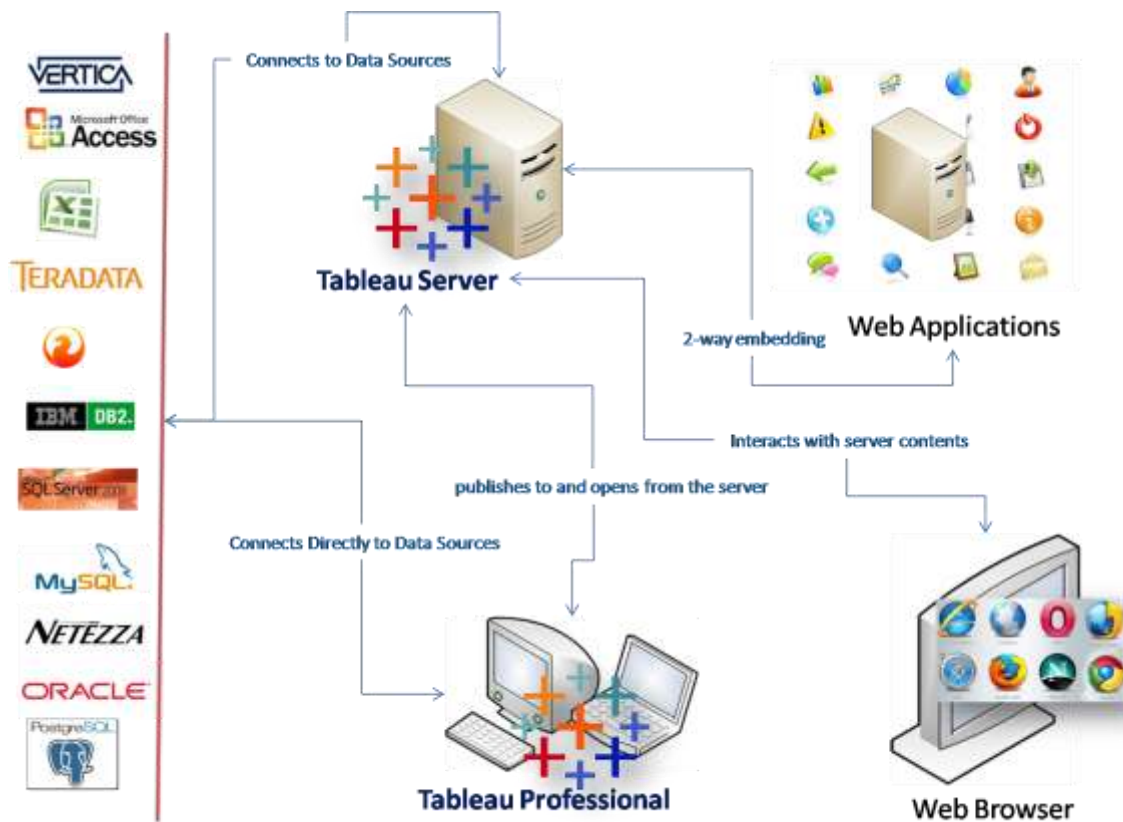


Figure 9: The Rapid-Fire BI Platform - From Data to Information on a Click

Summary

PortMaster is an integrated solution for Port Authorities with its core module providing profitability and operational intelligence to business users. Further modules can be added that provide both organisational and employee performance management and information, electronic Service Level Agreements (SLAs), e-billing and Supply Chain Management (SCM) functionality.

However the power and uniqueness of PortMaster lies in the robust calculation strength provided by FlexABM and the flexible and easy to use reporting, analysis and visualisation capability of Tableau, which provides the “WOW” factor.



FlexABM is a proven, easy-to-use, enterprise-wide cost and profitability solution that identifies the true cost of all activities and provides decision-makers with the analytical tools, models and methodologies to effectively evaluate business processes.

FlexABM provides intuitive costing of activities and processes, and is ideally suited to the port environment. By utilizing a familiar ‘drag and drop’ tree structure, grouping and tagging, and roll up functionality, data modelling is uncomplicated, yet extremely advanced. FlexABM provides:

- Unlimited modelling elements
- Group and tag activities with multiple roll-ups
- Multi-level activity assignments and cost objects

Tableau Desktop is a software application that enables anyone to analyze any kind of data quickly and easily. It creates brilliant charts, graphs and other visualizations with a few clicks of your mouse.

Tableau enables you to:

- Extract actionable insights from raw data in a matter of minutes.
- Create visual tables of data to reveal relationships, find patterns, and identify outliers.
- Look at one factor a time or any number of factors simultaneously.
- Filters and zoom into data.
- Create Dashboards
- Export vivid and beautifully annotated presentations to other applications, including Microsoft Office

Publish interactive reports on the Web to view and interact with data using **Tableau Server**.

Tableau Server’s functionality

- Automatic attributions and activity driver weighting
- Detailed models that accurately express expenditures and use of resources across the port
- Models that incorporate revenue and profitability
- Multi-dimensional reporting with any combination of products, customers, or other dimensions
- What-if Scenarios

With one of the most sophisticated, yet straightforward, 'import wizards', FlexABM effortlessly allows you to import the financial and operational data that is so vital to the rapid and cost-effective implementation of any cost and profitability system. Additional functionality includes:

- Automatic data validation
- Integrated view of cost/quality/cycle time
- Incorporates costs as well as performance measures
- Populates models with data from a variety of existing operational sources, such as ERP systems

includes:

- Intuitive filtering and sorting tools
- Links that users can follow through a recommended analysis path of related views. Links can also invoke other web applications to display related information
- All Tableau Server visualizations can be exported as images
- Smart Search™ capabilities
- Control access and minimize IT management

Tableau Server is a complete solution—no other prerequisite software is required. The only infrastructure requirements are a Microsoft Windows environment, at least one publisher using Tableau Desktop, and a web browser. Users can be served analytical views using Microsoft Internet Explorer 6+ or Firefox 2.x.

About Corporate Renaissance Group

At Corporate Renaissance Group (CRG), we have a single focus: *driving better management and performance through innovative solutions*. And, we have been delivering results to public- and private-sector clients, both large and small, around the world since 1989.

Our experience is wide and deep. Our consulting services team is renowned for its expertise and experience in: strategy design and execution; value creation; executive compensation; and costing and profitability analytics. We design all-encompassing enterprise-level dashboards; business intelligence solutions; shared services strategies; and employee performance management programs. Our implementations also leverage our own solutions – FlexABM, Cost Allocator, Shared Services Manager, and emPerform – all deliver the best value for money in their class.



We pride ourselves on being go-to Microsoft experts for business solutions. We use Microsoft technologies to help companies improve financial and operational performance and increase efficiency: Microsoft Dynamics GP, SharePoint, PerformancePoint Services, Microsoft Dynamics CRM, and the Microsoft Business Intelligence Suite of products. We also serve the Microsoft Dynamics GP community through our products: Changer, AA Tools, QuickCubes, Re-Formatter, Reverser, and Merger Series.

We have world-class software development capabilities and we have developed many customized solutions to our clients. We are very proud of our software development centre, located in India. We customize business applications to help our clients become world class performers; our over 3,000 satisfied clients are a testament to our skill as software developers.

We are truly a global company with offices in Canada (Ottawa, ON; Toronto, ON; St. Andrew, NB, Kelowna, BC), South Africa (Cape Town and Port Elizabeth), India (Pune), and the United States (Tulsa, OK) and affiliates in the Caribbean and Europe.

Contact Us

www.crgroup.com

<u>Canada</u>	<u>South Africa</u>	<u>India</u>	<u>United States</u>
6 Antares Drive, Phase 1, Suite 200 Ottawa, ON K2E 8A9 Canada t: 613.232.4295 f: 613.232.7276 e: crg@crgroup.com	9 Dolphin Drive Blauwbergrant Cape Town 7441 t: +27 21 557 5847 fax: +27 21 557 4180 e: rkeet@crgroup.com	5 Ramagovind, Sahawas Society Karvenagar Pune 411 052 India t: +91 202 5457100 e: crg@crgroup.com	7712 S. 232 nd E. Avenue Broken Arrow, OK 74014 USA t: 918.357.9304 f: 918.357.5374 e: crg@crgroup.com