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INTEGRATED BUSINESS ANALYTICS:

Getting to the Answers for Improved Business Performance



EDGEWATER
RANZAL

The rate of change and complexity in today's business environment grows exponentially by the day.

Today, data is being created at an explosive rate – so much that 90% of the data in the world today was created in the last two years (Science Daily, 2013). To deal with this, the tools and technology that organizations use to transform this data into intelligence is changing as well. How should an organization convert this massive volume of data into intelligent information? What data provides insight into the business, and what data is noise? Will today's noise provide tomorrow's data assets? As if the rising sea of data is not challenging enough, organizations are faced with multiple options on where to run key business processes. What processes should be moved into the Cloud, and which processes should remain in house? Additionally, today's modern workforce is always on the go, so how do you provide critical information via mobile devices, providing management-needed data at their fingertips, no matter their location? Finally, adding even more complexity – how do you integrate, automate and ensure data governance in a world where Cloud and on-premise co-exist? And most important – how do we instill one hundred percent confidence in the data? What are the right answers for today's business problems, while considering the future and accounting for the rapid pace of growth?

For an organization to make decisions that strengthen customer engagement, optimize operations, prevent threats and fraud, and capitalize on new sources of revenue, a new approach to information architecture, tools and practices is necessary - it's called Integrated Business Analytics. Integrated Business Analytics is the convergence of three disciplines: Enterprise Performance Management (EPM), Business Intelligence (BI) and Big Data (BD). Integrated Business Analytics provides the answers to what, when, where, why and how every organization needs in order to succeed and gain a competitive advantage.

This white paper will showcase how one company strategically built an integrated business analytics platform to answer the questions the organization needed to improve performance. Chartered by the company's CFO and named 'Citius' (Latin for faster), the project goals and objectives were to "deliver better information more rapidly to executive management in order to facilitate improved decision making."

Introduction

For more than 80 years, the name Terumo has been synonymous with high-quality, innovative medical devices. From its start in 1921 as a manufacturer of clinical thermometers, Terumo Corporation has grown worldwide to a position of leadership in such areas as hollow-fiber technology, blood-management systems, and endovascular therapy. The high-quality medical products of Terumo Corporation are used in more than 160 countries and generate over \$3 billion in global annual sales.

Today, Terumo Medical Corporation develops, manufactures, exports, imports, markets, distributes, and sells a diverse portfolio of medical devices, supplies, and accessories and generates \$280 million in annual sales. While some of its products and devices are produced in Japan, a growing portion of them are produced in Elkton, Maryland.

In 2013, the CFO of Terumo Medical Corporation launched a project called Citius to improve the delivery of information and decision making. For years, the company suffered from several business challenges, including antiquated IT systems, daunting manual processes, inaccurate or insufficient data, and an inability to efficiently change or improve management processes to meet world-class standards. Project Citius' business objective was to establish a flexible and scalable business analytics platform to deliver improved data to support ongoing growth and expansion. Terumo wanted to know *what* happened to its business through improved financial and operational management reports; *when* it happened by delivering daily metrics to the sales organization to track products quickly and more efficiently; *where* its business needs to go by developing financial and resource budgeting and forecasting plans that align to strategic goals; *why* the company achieved or failed to achieve the financial and operational results required; and, *how* to guide their operational results towards their strategic goals and objectives.

The *What*

Terumo's successful evolution as a leading medical device manufacturer accelerated its growth of data and presented the company with both a business risk and opportunity. Getting to the what, or the financial results, of the business was arduous. Finance executives were utilizing outdated technology to consolidate financial and operating results across eight business units. Intercompany adjustments and eliminations were manual. They relied on general ledger-based approaches that could not pull transactional level detail and custom reports by business unit that did not address global

Oracle® Hyperion Financial Management™ is a financial consolidation and reporting application built with advanced Web technology and designed to be used and maintained by the finance team. It provides financial managers the ability to rapidly consolidate and report financial results, meet global regulatory requirements, reduce the cost of compliance and deliver confidence in the numbers.

requirements. Maintaining and auditing financial data was grueling and brought risk to the overall organization.

The company selected Oracle Hyperion Financial Management (HFM) to improve the quality and consistency of financial data, or 'one version of the truth.' Today, the company is retrieving data from business units across North and South America via Financial Data Management, Enterprise Edition (FDMEE) mappings and automation from Oracle JD Edwards and other Excel and flat files. Intercompany balances are matched and eliminated, foreign currency is properly calculated in accordance with local GAAP or IFRS principles, and cash flow statements are automatically produced. The company has increased the speed and accuracy of its close process and reduced internal control risks previously associated with a non-centralized solution.

HFM also provided a business opportunity for Terumo. Due to increased confidence in their numbers, financial managers moved from being a score-keeper to a business partner for all eight business units.

Result: The *What* has been answered via an EPM solution - they know what happened to their business and can now act on quality financial and operational management reports.

The *When*

Companies today cannot afford to take a rear-view mirror approach to understand what incident or opportunity altered their performance. A historical, rear-view mirror narrative of when an incident or opportunity changed the course of performance is of the bygone days. Today, the answer to when for an organization is being able to act on the current incident or opportunity proactively. For Terumo, the answer to when was in the delivery of a sales and customer analysis and reporting solution. Executives needed a way to access detailed sales and marketing information to help them track and improve their planning process and to provide their sales force real-time status of product availability.

Prior to identifying a BI solution for sales and marketing, Terumo used a legacy reporting solution. It was not flexible and did not provide field representatives with the required adhoc analysis and reporting of revenue and volume by product line, client or specified time period. In order to identify availability and optimize pricing, field representatives went to IT, but reports were out of date providing canned and inflexible access to information.

Oracle Business Intelligence Enterprise Edition™ (OBIEE) is an unmatched and comprehensive business intelligence and analytics platform that delivers a full range of capabilities – including interactive dashboards, ad hoc queries, mobile analytics, notifications and alerts, enterprise and financial reporting, scorecard and strategy management, business process invocation, unstructured search and collaboration, integrated systems management and more. OBIEE is built on a proven and modern technological foundation that supports the highest workloads and most complex deployments, while providing timely insights to users across an enterprise at a low overall total cost of ownership.

Terumo implemented an interactive, mobile friendly dashboard with Oracle Business Intelligence Enterprise Edition (OBIEE) and an Essbase data store that pulls detail level data from JD Edwards. With an OBIEE and Essbase solution, the field representatives now have information at their fingertips – on any mobile device. For example, while in an operating room with physicians, a representative can determine if and when a required product can be delivered and optimize the price based on accurate and current data. No longer are they suffering from stagnant reports – instead, orders are filled quickly and at the point of contact. Additionally, the information is available online and offline, from a single set of reports, and critical business data, including orders, backlog, sales, inventory detail by day, product, and customer is retrieved by the entire sales team in a custom format. The solution has improved both sales force and management efficiency.

Result: The *When* has been answered via a mobile BI solution – they can proactively respond to an opportunity when it occurs through interactive dashboards and reports.

The *Where*

Many organizations believe the where of their business is simply the outcome of their year-end or annual financial planning meetings. They leverage historic data to determine the direction of future trends and utilize forecasting to determine how to allocate their budgets or plan for anticipated expenses for an upcoming period of time. However, organizations that can truly answer where are not just working from a simple plan. They are constantly integrating financial and operational results and extrapolating how trends, including labor productivity, product and market demand, and capacity planning, will alter or vary future outcomes. The where for an organization is the ability to predict business performance.

With Terumo's financials and statutory reporting well in hand with HFM, Terumo executed a parallel EPM application with Oracle Hyperion Planning to include a budgeting, forecasting and strategic plan of profit and loss (P&L), balance sheet, and cash flow, including currency translation of the budgeted and forecasted amounts. Terumo configured the solution to include key performance indicators and calculations focused on manufacturing efficiency metrics and implemented the Hyperion Workforce Planning module at the employee level to include manufacturing line shift planning based on integration with its standard costing solution. Reports were also developed to support financial knowledge that workers need for variance analysis of actual

Oracle Hyperion Planning is an agile planning solution that supports enterprise wide planning, budgeting, and forecasting using desktop, mobile and Microsoft Office interfaces. It provides a robust modeling framework that helps develop reliable financial forecasts based on sales and operational assumptions to produce cost effective enterprise alignment. With Oracle Hyperion Planning, you have a solution that is best in class and proven in the market place to provide timely, actionable plans to help make informed business decisions. Oracle Hyperion Planning can be deployed on-site or in the Cloud.

(consolidated actuals from HFM), budget, forecast, and strategic plan by each of Terumo's three major business segments.

The built-in analytics and drill down capability of the new global management planning, forecasting and reporting solution allows Terumo's finance team to provide financial and non-financial evaluation at the plant and sales business unit level to support strategic and operational management decision making.

Result: The *Where* allows Terumo to better predict business and financial outcomes on a constant basis with accurate, consistent data. An EPM solution has improved the organization's ability to adjust plans to meet strategic and operational objectives.

The Why

Do you know why the company achieved (or maybe did not achieve!) the financial and operational results as reported to stakeholders? Can you define specifically why an area of your business is underperforming? The ability to answer why it occurred and how decisions can be made to improve business performance is critical.

Terumo has embraced its ERP solution allowing the organization to become more efficient in the tracking and execution of business processes associated with the sales and production of 30 product lines. However, its scenario modeling, planning, and analysis functions (such as standard cost rates) were very often found in a series of disconnected spreadsheets across different business areas. Terumo leveraged an Excel-centric approach that required a great deal of manual effort, lacked transparency to assumptions, and was a data quality risk.

Building upon its goal to 'deliver better information more rapidly to executive management in order to facilitate improved decision making,' Terumo implemented a standard costing solution to provide greater insight into the costs required to manufacture its 30 product lines. Hyperion Profitability and Cost Management (HPCM) was selected to identify the drivers of cost and profitability and empower Terumo to improve resource alignment. Leveraging its Hyperion Planning solution for modeling and reporting of sales, inventory and plant/manufacturing line capacity/utilization, HPCM provides the allocation of costs by product line. The EPM solution delivers the following:

- Work center allocations for budget, forecast and actuals using a variety of activity-based cost drivers such as consumption, production quantity, labor hours, and machine hours

Oracle Hyperion Profitability and Cost Management is a performance management application that provides actionable insights into cost and profitability. As part of Oracle's Hyperion performance management applications, Oracle Hyperion Profitability and Cost Management drives organizational performance by discovering drivers of cost and profitability, empowering users with visibility and flexibility to improve resource alignment.

- Standard cost rate development for the direct labor, direct labor overhead, machine time and machine overhead for product routings & direct, indirect and by product cost elements for a typical bill of materials
- Sensitivity analysis due to changes in sales volumes, on hand inventory mandates, and changes in plant capacity
- Impact analysis due to standards changes at the bottom line, and whether the impact is due to material costs & usage variances and/or labor and overhead costs & efficiency variances
- What-if modelling capabilities due to changes in bill of materials (BOM) and routing information
- Self-service reporting and ad hoc analysis

Result: The *Why* for Terumo was answered via an EPM solution that identifies the drivers of cost and profitability of product line by modeling sales, inventory and plant/manufacturing capacity.

The How

Do you know how to exceed operational results and improve shareholder value? Do you know how to adapt faster and be more efficient than your competitors? Organizations that can answer the How are increasing their market share and growing strategic categories.

As a medical device manufacturer, Terumo and its subsidiaries operate in a highly regulated environment (FDA CFR Part 11). Therefore, it must be able to manage large volumes of data - both structured and unstructured. However, it's not about simply managing the data; Terumo wanted to analyze its data across multiple global divisions and produce insights that would lead to better decisions and strategic business moves.

With massive data diversity across key reporting sources, including JD Edwards, legacy quality operations and manufacturing systems, and additional systems acquired through acquisition, the company suffered from several challenges. Terumo needed to have data stores available going back decades with the ability to produce point-in-time reporting that can be validated and approved to strict FDA guidelines. The company did not have a centralized data warehouse platform and the data structure, variety and autonomous data, made traditional modeling unfeasible. Additionally, compliance requirements had inhibited the agility and efficiency of Terumo. These stringent compliance and validation requirements also prevented the company from

Oracle Big Data Discovery is a fundamentally new approach to making sense of Big Data, enabling anyone to find, explore, transform, and analyze big data. Rapidly discover new insights, then easily share results with other tools and resources in the big data ecosystem. Oracle Big Data Discovery leverages Apache Spark to offer tremendous speed at massive scale, streamlining Big Data analytics to unlock new value for everyone.

Hortonworks Data Platform (HDP) 2.5 is the industry's only true secure, enterprise-ready open source Apache™ Hadoop® distribution based on a centralized architecture (YARN). HDP addresses the complete needs of data-at-rest, powers real-time customer applications and delivers robust analytics that accelerate decision making and innovation.

having the capability to complete proactive investigation of quality issues, causing the organization to be constantly playing catch-up on reports, per request basis.

Terumo chose to design and implement a cutting-edge Cloud-based Big Data solution to both address its immediate needs and answer the How. Terumo developed a Cloud-based Hybrid Data Lake infrastructure powered by Hortonworks Data Platform to provide users with an FDA-validated data platform that both scales quickly and enables fast onboarding of disparate and ever-growing data catalog. Once this was in place and due to their familiarity and satisfaction with its OBIEE solution, Terumo was able to consume this new Big Data platform in its existing BI environments and leverage its own tools and knowledge to deliver needed reports to users. The Big Data solution enables acquisition, transformation and querying across any data source and is scalable to meet a variety of size requirements. Additionally, knowledge workers can access data in multiple ways, including:

- HiveQL and SQL to the EDW for reporting and ad hoc query
- Oracle Big Data Discovery (BDD) and R/SAS for innovators, researchers, data scientists and ad hoc analysis
- Apache Solr for findability and referenceability across multiple systems

Finally, the private Cloud infrastructure running on Oracle technology provides a high-performance, secure platform for running diverse workloads. Terumo now has access to an engineered system of hardware and software optimized to capture and analyze the massive volumes of unstructured data generated in and outside of the organization.

Result: A Big Data solution answers the *How* and more! Terumo is successfully meeting regulatory requirements and turning massive amounts of data into information to increase market share and grow strategic categories.

Conclusion

Deliver better information more rapidly to executive management in order to facilitate improved decision making: sounds simple enough; however, for an organization to make decisions that strengthen customer engagement, optimize operations, prevent threats and fraud, and capitalize on new sources of revenue, a new approach to information architecture, tools and practices is necessary. Terumo developed an Integrated Business Analytics platform by integrating the people, process and technology of EPM, BI and Big Data. It is meeting strategic goals and objectives and gaining a competitive advantage by answering: 1) *What* happened to its business and improving its ability to act on quality financial and operational management reports; 2) *When* events occurred and proactively responding to opportunities and threats; 3) *Where* financial and operational outcomes of today will predict how to adjust plans to meet future performance goals; 4) *Why* an area of its business is under-performing through identifying drivers of cost and profitability; and 5) *How* to successfully meet regulatory requirements and increase market share.

Edgewater Ranzal is proud to be a partner of Terumo through its journey to Integrated Business Analytics. Terumo's solution of integrating EPM, BI and Big Data has been endorsed by Oracle, but more importantly, it is meeting its CFO's goal of improving the delivery of information and decision making.

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Chris Churchill is the Senior Vice President of Operations at Edgewater Ranzal. Mr. Churchill joined Edgewater Ranzal in 1998 as a Consultant, and has since worked in delivery, operations and business development roles within the company. Chris is recognized nationally as an authority in Oracle Enterprise Performance Technology. He is a frequent speaker at Oracle events, an active member of the Partner Advisory Council all adding value to the advisory role he leads across all client implementations.

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Mike Killeen is the Senior Vice President of Technology and Strategy for Edgewater Ranzal. Mike started with Ranzal in 1997 as an implementation consultant and has held a variety of technical and operational roles within the organization. As SVP of Technology and Strategy, he is responsible for the identification & execution of strategic initiatives that establish service offerings and business solutions which incorporate new technologies, products, and intellectual property. Additionally, he plays an important role in assisting strategic clients with multi product solution architecture, organizational design, and process definition in order to help maximize the return on their Oracle investments. Mike is a recognized industry thought leader, Oracle ACE and contributor to presenting at numerous conferences and user groups. He serves as one of the Ranzal primary liaisons to Oracle product management providing feedback and guidance on product direction, enhancements, and features.

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Patrick Rafferty is a Senior Practice Director for the Edgewater Ranzal Big Data practice. Patrick is a proven leader providing business solutions in the area of Big Data for over fifteen years. His expertise and knowledge of emerging best practices are empowering customers to unlock sources of data and rethink traditional approaches to gain new insights across the organization. Patrick's forward-thinking approach has produced superior results and helped to define solutions that have allowed customers to gain strategic value from technology investments.



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Edgewater Ranzal understands the challenges that organizations face today around business analytics. Why? Because Edgewater Ranzal has been on the cutting edge of implementing these solutions for twenty years. We understand that turning data into information and information into action is at the core of why organizations embark on the business analytics journey. While this journey can start and end in different places for each organization, it's important that organizations select a partner that has traveled this road before to help guide the journey and has the experience to know when the beaten path isn't the correct route. While the tools may change – the journey, the business problems we seek to solve, and the nirvana of perfect information at the perfect time – do not change. We provide our clients with insight from data, we solve complex business processes with simple and elegant solutions, and we empower our customers with the skills required to continue the evolution of their integrated business analytics journey.