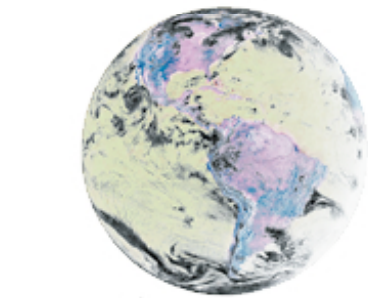


CENTRALIZATION AND OPTIMIZATION OF PERFORMANCE METRICS, DATA SOURCES, AND ANALYSIS ACTIVITIES

2005 COMPUTERWORLD HONORS CASE STUDY

BUSINESS

A NEW EMPLOYEE-BASED SCORECARD APPLICATION GATHERS WORKFORCE SERVICE INFORMATION FROM VARIOUS APPLICATIONS AND DATA SOURCES INTO AN ENTERPRISE DATA WAREHOUSE AND ROLLS THE INFORMATION UP INTO MANAGER-LEVEL KEY PERFORMANCE INDICATORS. [20055240]



A Search for New Stories



SUMMARY

An employee based scorecard application that gathers workforce service information from various applications and data sources into an enterprise data warehouse and rolls the information up into manager-level key performance indicators (KPIs).

APPLICATION

As the leading telecommunications company in Western Canada, TELUS Corporation has over 25,000 employees, coming together from multiple organizations. TELUS needed to centralize and optimize performance metrics to insure a strong productivity foundation could be built and sustained. Requirements included the creation of a Web-based reporting solution that would deliver users with concise information at the employee level to help make operational improvements as well as simplifying analysis activities. As a result, TELUS created a Business Intelligence (BI) solution that tracks, measures, and reports on employee efficiency, accessing information from a variety of back-end applications and data sources.

Implementing a standardized methodology to manage and gauge performance provided a consistent baseline on which to operate. As a result of line-of-sight metrics capabilities, employees could now see a direct correlation between individual contributions and the overall success of the organization. This understanding and capability is driving regional productivity gains of \$1 million to \$2 million per month.

The primary objective was to create a scorecard that was comprehensive and available with line-of-sight linkages at all levels of the organization. The ability to follow the linkages throughout the hierarchy, from front line employee to VP, makes a very powerful tool. Scorecards are used both weekly and monthly to manage employee availability, gather utilization statistics, and encourage optimum performance. Management team are continually on the lookout for ways to improve productivity and effectively balance time spent in the field with administrative and training activities. The application provides consistent feedback on items such as whether the staff can complete jobs within allotted timeframes. In addition, utilization statistics and estimated-versus-actual comparisons help zero in on possible performance or process opportunities.

To pull together the vast quantities of data required to create a cohesive employee level scorecard, integration software works in the background on a nightly basis. Extract, Transformation, and Load (ETL) technology was used to gather information from applications such as Siebel, SAP, and Microsoft Access, and to combine data sources such as DB2, SAP BW, FOCUS, Informix, and various types of flat files into an enterprise data warehouse. Then, developers used Business Intelligence (BI) software to create the self-service reporting and analysis solution that accesses data in the warehouse concurrently with other data marts. By limiting the manual work and adopting ETL technology as well as data integration software, TELUS was able to drastically decrease the time to delivery and increase the reliability of the information.

TELUS elected to create self-service applications that could deliver key functionality without requiring a user to leave their web browser and intranet site. The reporting application was custom built to exist within the intranet and designed with a look and feel consistent with corporate intranet standards. By masking the typical software GUI and creating a familiar environment, user adoption rates increased. Once deployed, users were able to make immediate use of the application with little or no learning curve.

Business managers receive scheduled performance reports by email or can access the reports via a secured intranet site. Through a parameterized webpage, authorized users request specific reports and drill down into the data via the electronic scorecard interface. The reports measure employee performance for common field-service tasks such as the installation and repair of voice and data services. Each employee has a scorecard, and

Robert Carrigan,
Chairman of the Chairmen's Committee

Ron Milton,
Vice-Chairman of the Chairmen's
Committee

Dan Morrow,
Chief Historian

the data is automatically rolled up into manager-level scorecards to gauge overall productivity against corporate and industry benchmarks. Providing individual measures that can be rolled up drives accountability across the organization, improving employee efficiency and lending visibility to contributions.

When accessing scorecard information using a Web browser, users can output reports to Microsoft Excel, Adobe PDF, and HTML formats. The system enables managers to obtain the information they need, in a format that's convenient and meaningful. They can break down reports by day, week, month, and year as well as various other dimensions that are indicative of the business.

TELUS does not use the system putatively, but rather to promote positive behaviour. If one manager has absence rates of one percent and another manager has absence rates of three percent, the data is reviewed to determine how best to share good behaviour. This solution has brought about significant changes at TELUS. About 100 business managers receive performance reports by e-mail on a regular basis. Business analysts and managers use the scorecard information regularly. Managers are better informed, and employee performance has improved radically.

BENEFITS

When the application was launched, approximately 100 managers began receiving scheduled reports. The reports measure employee performance for common field-service tasks such as the installation and repair of voice and data services. A manager initially sees a summary level report with the entire team's results but is able to easily generate a scorecard for each employee on demand. The data provided helps managers engage employees in meaningful performance reviews as well as providing details for root cause analysis. Ultimately, this helps the organization identify opportunities to make operational improvements. Managers and their teams can now utilize auditable facts and data to discuss issues and opportunities. Prior to the consolidated scorecards, it was difficult for all parties to have access to consistent information. The systems were fragmented and complex in nature. It would take managers enormous amounts of time to find the data and when compiled, was often fraught with inconsistencies. Even between peers, the sources of information may differ as well as the measures themselves. This made it inherently difficult for everyone to manage and drive in a consistent manner. While the incongruence existed, it was nearly impossible to effectively make large productivity gains. The launch of the employee level scorecards gave managers access to a common tool with common measures for which they can use to manager operations. With the metrics and business rules aligned, data integration occurs behind the scenes and the reports are generated. Field managers now have a management tool and no longer have to trouble themselves about where to get the data and how to create a report.

IMPORTANCE

The effective use of Information Technology in this project was instrumental to success. With the appropriate technology in place, the project team was able to focus on rapidly delivering value to the business as opposed to wrestling with the technical challenges. Utilizing Data Integration and Business Intelligence (BI) technologies from Information Builders Inc., a smart and simple solution was created that provided immediate value.

The nature of the project required vast amounts of data integration work. Up to 10 different data sources were required in order to create the scorecards. These sources existed on various platforms and databases. The reports required information from applications such as Siebel, SAP, and Microsoft Access, and to combine data sources such as DB2, SAP BW, FOCUS, Informix, and various types of flat files into an enterprise data warehouse.

Historically, custom code would have been used to create an interface to effectively obtain and process the data. Although technically possible, time and cost constraints ruled out the feasibility of creating the custom code required for each situation. In addition to the time and cost constraints, there was a labour constraint in finding the skills required to code the diverse interfaces.

By leveraging commercially available data integration adapters for the data sources and platforms it was possible to drastically reduce the development time and meet demand. Rather than searching for resources and finding time to build custom interfaces, appropriate adapters were procured so that access to data was almost immediate. Data adapters were connected to ETL software which together, enabled rapid access to data and loading to the warehouse. With this data infrastructure in place, access to data was homogenous for the most part. This meant there was no longer a need to seek proprietary skills in a particular language or application in order to work with the data sources.

Once the data was available, the challenge was to effectively deliver the data in the form of information to those that needed it most. Of utmost importance was the need to create consistent and auditable metrics that users could depend on. Prior to this project, it was common practice for individuals or groups to perform reporting functions independently. This led to sub-optimization of tools and resources as well as inconsistency

of results. Inevitably, business rules would be out of sync and measures would lose value. Also, as users have differing requirements in terms of output and format they would reprocess the initial results to a format that was more meaningful to them. This also resulted in additional rework as well as an increased likelihood of error each time manual intervention occurred.

To deal with challenges associated with delivering the information, Business Intelligence (BI) technology was adopted. BI software was leveraged to create a client/server environment where metrics and rules were held centrally. When approved changes were made to business rules, updates are reflected in downstream metrics immediately. The BI software provided the flexibility to produce the metrics in various ways including Microsoft Excel, Adobe PDF, and HTML formats. Additionally, users could access the reports through an Intranet site or opt to receive the reports via E-mail when out of the office. In all cases, the information is generated using the same data and the same rules which eliminated consistency issues. With the richness of output options as well as parameterized reporting capabilities, the time spent reshaping the output is kept to a minimum. This technology has provided capabilities such as event alerts, conditional styling, and drill downs without the need for traditional programmers which has proven to be invaluable.

ORIGINALITY

The creation of a fully functional self-service scorecard application that is integrated to the existing intranet was the first of its kind at TELUS. Deciding on the use of a self-service application interface as opposed to another 3rd party GUI was a deliberate strategy intended to increase adoption rates. The custom web interface was created in such a way that made it easily scaleable to accommodate future additions as well as being re-usable for other reporting applications. Its modular nature resulted in it being reused as a standard for the next six similar applications following this project. The relevance to the user is it no longer mattered what technology is working in the background, they are continually interacting with an interface that's familiar. The benefit to the project team is the ability to develop in a modular approach. As data integration and reporting work is created in the background, it can be promoted and fitted to the front end. Ultimately it insulates the technical complexities from the front end user and allows managers to concentrate on the business.

The line-of-sight connectivity of metrics from the front line employee level to the VP level is a key differentiating feature of the application. A scorecard can be created for every field employee. Each of these individual scorecards can then be summarized into an aggregate scorecard for the next level. Authorized users may create reports using a single dimension or combine multiple dimensions to create a more precise view. The ability to move up and down the organizational hierarchy and derive a scorecard that's consistent creates accountability and identifies individual contributions. The ability to demonstrate the impact of an individual's contribution is fundamental in creating a high performance culture.

SUCCESS

About 100 business managers now receive scheduled performance reports by e-mail. From these, managers have the ability to drill down to create an individual employee scorecard making it possible to generate up to 2500 scorecards. At all levels, the results may be broken down to find individual elements or rolled up to see aggregate impact.

Providing individual measures that can be rolled up drives accountability across the organization, improving employee efficiency and lending visibility to contributions. This knowledge is driving regional productivity gains of \$1 million to \$2 million per month. Additionally, the scorecards give managers the data they need to engage employees in meaningful performance reviews, providing details for root cause analysis and helping the organization identify possible operational improvements. Data is readily available to compare team members to team averages and quality-of-service benchmarks.

The project has been able to substantiate a very quick return on investment (ROI) with project costs totalling just under \$1 million, including outlays for hardware, software, licensing, and labour. Making effective use of the information provided by the application, there has been a marked increase in the efficiency and performance of field service employees. As well, the tool provides superior information to managers and staff, which ultimately helps deliver better service to customers.

“When we started measuring employee performance, my team was completing jobs in less than the estimated amount of time about 3 percent of the time. Now, we're coming in below estimates about 25 percent of the time. It's an excellent management tool. We've seen huge improvements since we starting measuring field-service performance in the first quarter of 2003”

Brian Meadows, Regional Director - Customer Solutions Delivery

DIFFICULTY

The first challenge encountered was not technical in nature but rather education based. Prior to beginning the project all stakeholders needed to understand that by simply creating centralized performance metrics it would not result in productivity and operational improvements. In parallel to the development, work needed to be done from a cultural perspective to ensure the tool is used effectively. The application is intended as a tool to supplement other readily available information to enhance educated decision making. By consolidating the data from various systems, managers have greater visibility into many aspects of the operational environment. The information is integrated and provides a more holistic view of what's occurring in the field.

Often overlooked, one of the most important criteria for success is a clear understand of how the measures and information will be used. Creating metrics alone doesn't necessarily result in improvements – it's what you do with them that makes an impact. The information garnered from the system is not used putatively, but rather to enforce positive behaviour. For instance, if the actuals are higher than the estimates for a particular job, a user can drill down into the details to see if the performance data makes sense. It could mean a need to enforce training for a certain type of field service procedure, or it might simply be a case of travel delays when visiting customers in remote areas.

The second challenge was to find resources that understood BI and Data Integration technology and were willing to move away from traditional mentalities. With the advanced tools and technology integrated tightly together, it greatly reduced the technical challenges but increased the cultural issues. The typical work silos mentality had to be challenged.

The availability of new technology meant that traditional ways of doing things needed to change. Activities that were typically done through custom programming might be better accomplished by leveraging software. Work that was previously done by a database developer might now be done by a report developer. Conversely, a database developer may be able to do something more efficiently at a database level than a report developer working at the report level. Successfully procuring resources with this understanding in mind at the onset was critical to success.

The project team contained architecture, database, reporting, and web skills. All members have a specialty skill but more importantly, were open to looking at new ways to get the job done. In order to be successful the team needed to look beyond what they were accustomed to doing and focus on what was right for the project and ultimately the customer. Since time and labour was at a premium, this put renewed emphasis on seeking better ways to perform a task vs. simply accepting what's been done in the past. The text book assembly line methodology common to these types of projects was not appropriate given the constraints as it reduces communication and ownership of the end product.

Team members were consolidate together into a work center and were required to participate in joint planning. By creating a small team which participated together in planning and problem resolution the result was increased ownership and accountability. Team members were selected based on their skills and predisposition to challenging the norm. With a creative and technically sound team in place, technical problems encountered were rapidly resolved. Since the technologies were well integrated, work was easily moved around which enabled a superior end product and reduced development time. For instance, there are situations where a report developer may struggle for days with a quirk in the data and although possible to overcome, it would consume valuable time and may result in unnecessary processing at runtime. However, that problem was quickly resolved at the ETL level once identified. Also, basic functionality or logic could be incorporated at the web interface level that would save time and energy behind the scenes at the report creation and data levels.