

Increase Business Intelligence Infrastructure Responsiveness and Reliability Using IT Automation



What You Will Learn

- That business intelligence (BI) is at a critical crossroads and attentive Chief Information Officers (CIOs) who increase BI responsiveness are at the forefront of defining a new strategic relationship between IT and their business end users.
- Strategies and technologies are available to help IT leaders make BI more accessible and meet the growing need for these services.
- Automation plays an essential role in accelerating BI service delivery.

Business Intelligence at a Crossroads

Today, businesses measure performance based on how quickly they can increase sales while maintaining profit margins, and how accurately they can forecast sales on a quarter-to-quarter basis. Now more than ever, increasing sales requires identifying and adapting to market trends quickly before they shift. The faster that prospective customers move through the sales cycle, the greater the conversion rate and the better the profit margin.

Accurately forecasting future sales allows businesses to correctly plan and scale resources for delivery, which also affects margins. Successfully increasing pipeline speed and scale requires business leaders to find the fastest and most accurate ways to collect and disseminate business forecasting data, such as business trends, market velocity, and competitive moves.

The promise of BI as an instant answer to all sales and market questions led enterprises to invest heavily in related technology and infrastructure. In many cases, the initial returns on these investments were disappointing because the operational intricacies of the BI systems created complexities that were difficult to overcome. As IT teams continued to improve the systems and operational processes, the quality of data reporting and speed of delivery improved. With this improvement, business users began to see real value in BI reporting and created a new wave of demand for this service.

Today, many business users are building BI into their decision-making processes, because they are striving to make decision making more data supported than ever before. As a result, demands for BI reports are accelerating. Business users are now asking for direct access to BI reporting and analytics through self-service portals, rather than requesting BI services through centralized IT departments. These developments are causing rapid growth in the workload of the BI operations teams.

To take speed of delivery and service innovation for BI to the next level and make its use ubiquitous in the enterprise presents a major challenge as well as an opportunity for CIOs. Success in meeting these operational challenges while improving data quality will result in IT being viewed as a strategic partner to the business end user rather than a process-driven obstacle.

Demand for BI Services Forces Business and IT Managers to Think More Creatively

Helping the business end user to make the best decisions in response to fast-changing market conditions requires instant and accurate information. The demands for self-service BI and the proliferation of mobile computing devices such as smart phones are adding to the complexities of BI delivery.

Conventional, centralized IT groups are unable to keep up with this ever-increasing demand for faster business intelligence service delivery, coupled with the low tolerance for errors that typifies business users. Often, business unit managers end up circumventing centralized IT service delivery to patch together business intelligence from whatever data sources they can find. Although this practice sometimes works well for individual line managers, the proliferation of business units managing their own BI data delivery dilutes the power of enterprise-wide BI management, weakens the strategic profile of the business as a whole, and has the potential to cause confusion as information generated by different business units sometimes do not match because of different data sources.

When multiple BI silos exist throughout a company, the data that is best for the overall enterprise success is not delivered to all the business units. The result is that business unit managers make decisions strictly based on what's best for their business units and ignore or lack access to data that is critical to overall enterprise strategic goals. As a result, critical larger issues that affect the business are not taken into account during the sales cycle. In addition to the lack of a higher-level focus on enterprise-wide issues, multiple independent BI silos create a problematic redundancy throughout the organization. At this point, trust in the data becomes a critical issue.

Barriers to Delivering Timely BI Services through Centralized IT

Today's IT staff manages very complex environments that typically include a wide range of standard and custom BI solutions to manage data collection, data transformation, data warehousing, and the report generation and analysis that business users ultimately need to be successful. Often these tools are from different vendors and they are sometimes managed by different groups within the data center, and the solutions are seldom integrated.

Data sources can number in the hundreds, and some may be from outside the enterprise (for example, stock prices or commodity price feeds) or from partners, franchisees, dealers, or original equipment manufacturers (OEMs) over which the IT staff has limited or no control and no means to verify data integrity. To compound the

problem, BI workloads are seldom automated, and the physical and logical environments they run on need constant operational maintenance and configuration monitoring.

Nearly every BI process is complex. Each step may include various data sources such as cubes, distributed databases, data warehouses, and multiple interdependent subprocesses, each run on a different system with its own storage array configuration. In addition, requirements for data privacy and security, complex policies and regulations, and the need for detailed audit trails compound the problem of managing accurate reporting and analysis tools. The run books that define these process steps, if they exist, are often out of date or inconsistently followed. Thus, each process often has to be manually rechecked, and when issues arise, each process needs to be returned to a previous state and repeated, usually with greater supervision to improve processing accuracy.

It is expensive and time-consuming for IT to go into the reactive mode required when BI services are processed incorrectly. This requires manually troubleshooting stalled processes and developing triage run books for major workload crashes, creating an emergency resolution pattern that diverts valuable human resources from mission-critical or business innovation projects to help restore BI services. This manual and reactive data process management style slows IT's ability to deliver BI services and compounds the frustration business unit managers feel when working with centralized IT.

Solving the Problems of BI Service Delivery with IT Automation

The core of the problem is time constraints on IT staff. With unlimited resources, IT may be able to deliver faster BI services, but more staff resources are not enough to solve the bottlenecks and error resolution issues inherent in BI processing.

The best way to free IT staff to be more responsive to business needs is to provide the tools and strategies to automate many of the processes that deliver BI services from the data center. Most constraints on IT staff result from manually managing IT data processes, which involves manually identifying and solving problems when a data process has errors or is interrupted.

Automating IT processes makes the entire IT group much more efficient because it eliminates serious time inefficiencies. The efficiencies obtained through IT automation actually reduce IT capital and operating expenses, through elimination of duplicate and manual data management efforts and the associated expense of redundant solutions that proliferate throughout an enterprise with independent BI solutions. Efficiencies for personnel and hardware usage also improve.

How Data Center Automation Simplifies BI Processing

Cisco offers IT automation solutions that can speed service delivery and optimize all BI data processes. These solutions can manage data and processing connections on an enterprise-wide basis - from enterprise resource planning (ERP) applications to web services to managing FTP processing for data from partners and vendors. With workload automation, as processes finish the next step is automatically loaded, allowing workloads to complete faster because there are no time buffers between job steps. Because BI jobs for the entire data center can be automatically configured and managed, processes and workloads run only when needed, reducing capital requirements and eliminating redundancies. With the Cisco workload automation solution, BI jobs are managed end to end, including subprocesses such as:

- Data collection and cleansing
- Preprocessing
- Extract, transform, load (ETL) and extract, transform, load)load, transform (ELT)

- Report generation

Cisco's workload automation solution can also detect runtime errors, alert the responsible administrator or manager, and take corrective actions to address the error. When workload automation manages BI services smoothly and largely without error, the mean time between failure (MTBF) is increased and the mean time to repair (MTTR) is greatly reduced, creating a much more efficient data center.

The most important benefit to optimizing BI processes is that operational and infrastructure best practices can be consistently enforced, creating a proactive data center that automatically manages the following crucial areas:

- Change management and compliance orchestration
- Preventive maintenance
- Environmental triage and corrective action
- Security access
- Resource optimization, including virtualized and nonvirtualized environments

Integrating Process, Application, Workload, Network, and Cloud Services Automation

The Cisco Intelligent Automation solution helps automate all IT infrastructure components across the entire data center and beyond. For example, it can:

- Create an accurate and responsive workload processing environment that can reach out and manage jobs across the entire enterprise - even job steps that include partners' and suppliers' data
- Create just-in-time service request portals that automatically access, provision, deliver, and manage private cloud-based BI resources
- Use application and system events to trigger infrastructure resource changes for use by other jobs or resources, even within virtualized environments
- Intelligently manage application and infrastructure changes using best practices to comply with regulatory and company policy and auditability requirements
- Improve data center efficiency by coordinating the actions of different IT teams and putting BI capabilities in the hands of the users, while optimizing IT resources and better aligning them to the needs of the business

Intelligent Automation from Cisco

Cisco Intelligent Automation product set provides the components for effective intelligent automation.

Enterprise Scheduler

Cisco Tidal Enterprise Scheduler simplifies workload scheduling and automates and tracks how jobs are carried out. This Cisco solution provides a single point of control and visibility for managing and performing all job scheduling processes. The enterprise scheduler can also alert users to a wide variety of potential events, often acting in conjunction with the ability to configure autorecovery steps.

Enterprise Orchestrator

Cisco Tidal Enterprise Orchestrator is a foundation for delivering automated, integrated, and orchestrated processes that support service delivery and operations to standardize, unify, and automate best practices for IT processes used in complex, heterogeneous environments.

Intelligent Automation for Networks

Cisco's network automation solution automates best practices for network support and operations. The solution consists of a software platform with a workflow engine, network adapters, and an intuitive user interface. Included with the solution are predefined, standard workflows that encapsulate Cisco expertise for remediation of critical network problems and deployment of Cisco-identified best practices. A workflow editor provides the capability to capture customer-specific best practices and make them repeatable as guided procedures.

Intelligent Automation for Cloud

Cisco Intelligent Automation solution for Cloud is an advanced automation and orchestration software stack for private cloud computing and data center automation. Positioned at the center of a heterogeneous private cloud, this solution works with both virtual and physical infrastructure across computing, network, storage, and application domains. The Cisco solution provides automation across the various elements of Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) cloud environments.

Conclusion

BI solutions require considerable time and involvement from the IT group to be effectively implemented. Scaling BI solutions, increasing services, and improving responsiveness are not reasonably possible without the aid of automation for keeping pace with the complexity. As it is, even with the correct budgeting and resource allocation, BI initiatives can be ineffective because business unit managers - the end users of BI information - are frustrated when they perceive that IT is not equipped to respond to even basic service requests in a timely manner. This response time issue has two unintended consequences: decentralization of BI services into business unit silos and a disconnect between what the business needs and what IT can deliver.

Business units require intelligence at the speed of business. If IT cannot deliver on this mandate, business unit managers will find a way to fulfill their needs even at the expense of business-wide data continuity. That is not healthy or efficient for the organization. Devoting more IT resources to the problem will not solve the response time issue - IT budgets are tight and expanding manual processes may even make the problem worse. The problem can only be resolved with an automation strategy and tools.

Without effective IT automation in place, IT personnel lack the time to fully support new strategic business initiatives because they are continually occupied with day-to-day operations and troubleshooting. Available IT staff time is consumed because staff must manually manage and troubleshoot routine data center processes. This forces the IT group into a constant reactive mode and frustrates business unit managers who are under constant pressure to deliver results. The answer is for centralized IT to become a proactive BI services provider and business value partner to the business unit managers. This is achieved through intelligent data center automation.

Workload automation simplifies BI jobs, reduces processing times, and automates error recovery. Process automation keeps the entire data center BI environment optimized through maintenance and change management routines, security orchestration, error detection and triage programs, and best practices management.

Data center automation also has its own internal reward: both operational and capital resources will be optimized through higher efficiency. Operational personnel are freed to undertake strategic initiatives that align IT with the business units, and capital resource usage is optimized through consolidation of BI services and automated job scheduling. An automated data center lowers both capital and operational expenses by allowing the IT department to operate more efficiently, accomplishing more with fewer resources.

Data center automation solutions from Cisco help IT to align itself with evolving business needs by meeting business unit service demands efficiently and accurately. Cisco's data center automation solutions free valuable human and computing resources to fully support the entire business as it evolves.

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