



BUSINESS PROCESS VISIBILITY

Aligning IT with business goals





TABLE OF CONTENTS

> Executive Summary	1
> Introduction	1
> Distributed Application Visibility Today	3
> Business Process Visibility	6
> Service Delivery Optimization	10
> Conclusion	11



EXECUTIVE SUMMARY

As distributed, interconnected applications of all kinds grow in popularity (i.e., in SOA, Web 2.0, cloud computing, messaging, and ESB initiatives), there is a need for line-of-business owners to collaborate more effectively with IT departments to ensure that their implementation is, in fact, aligned with business goals. The problem is the lack of visibility into, and data on, what exactly is going on in the real-time services network from a business point of view. Visibility is essential not only to assure that business transactions process quickly and efficiently, but also to manage the performance of these distributed applications in order to improve business outcomes. This paper discusses this problem and a unique solution from Progress® Actional® that enables organizations to realize the full business potential of distributed, interconnected applications that are essential to critical business operations and lines of revenue.

In particular, the paper examines:

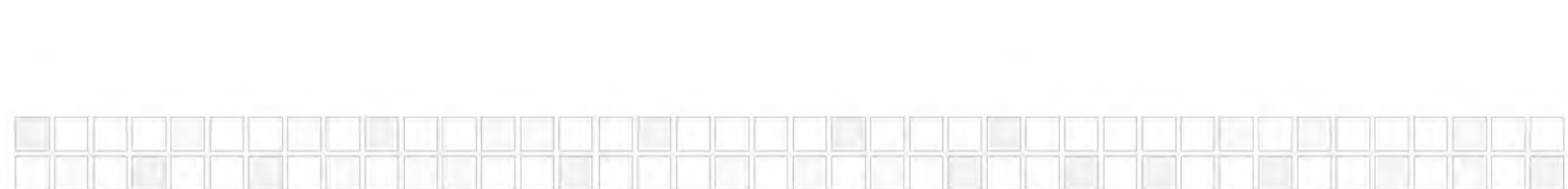
- > Why current IT monitoring solutions and other typical attempts to provide business insight into operations, such as creating synthetic transactions, are inadequate.
- > How the solution offered in Progress® Actional® Enterprise combines IT and business views of transactions to allow organizations to understand and manage loosely coupled services executing in runtime operations as business processes.
- > How, with Actional Enterprise, organizations can use this business process visibility—as well as service-level agreement (SLA) policies and other Actional mechanisms—to optimize service traffic to ensure quality of service and provide priority treatment for key customers.

INTRODUCTION

Business Process Visibility

It's about the Process—Not Boxes, Platforms, or Software

Over the past couple of years, distributed, interconnected, service-based applications have been used in an increasing number of mission-critical, enterprise-wide deployments across a growing number of industry segments. As this movement into the mainstream and away from the days of early adopters continues, within these organizations line-of-business owners and managers are interacting with IT departments and resources in entirely new ways. More accurately, there is a growing need—an unmet need—for business and IT to collaborate more effectively, especially for line-of-business owners to understand the underlying processes and technologies that deliver value to the business.




The problem is that existing tools have never been focused on managing or understanding the process, but are, in fact, infrastructure-centric. If you look at what vendors in the services technology marketplace are producing currently, it is clear that they are still focused on what they've always been focused on: layers and platforms and services and tooling. Traditional management tools are still concerned with stacks and silos and what's going on with hard drives and application servers.

The elephant in the room is that business people don't care and don't want to know about "boxes" and "software" and "silos." Line-of-business managers, operational executives, and marketing teams think in terms of the business processes that provide services and generate revenue, and what is happening to these processes. For instance, when a product manager for a widget vendor sees her online sales cut in half in one day, she doesn't necessarily think, "This must be an IT problem"—a nebulous glitch that the guys down in database administration can fix. No: she wants answers to a number of questions:

- > Has traffic fallen off or is it the same as usual?
- > Are buyers dropping out somewhere in the checkout process?
- > Have orders been placed but not been processed correctly?
- > Can we map the entire process—from site visit or phone-in order to merchandise delivery—in order to pinpoint the exact nature of the problem?

Since IT hasn't been organized around the end-to-end business process, there is no easy way to use the tools at hand to deliver answers to any of these questions. In fact, IT departments have struggled with making decisions about process performance, security, SLAs, and capacity planning because they have lacked visibility and actionable data on what exactly is going on in the services network from a business point of view. History has confirmed that application or infrastructure monitoring does not correlate well to the actual business being performed by the services network.

The alternative has been to cobble together ways of getting visibility into and understanding of what's happening with the business process and, then, applying relevant policies to key process steps. Of course, manually tying together information on IT functions and process responsibilities across several departments and groups—for example, order fulfillment, inventory, customer service, and so forth—is no easy task. In fact, most organizations lack the capability to get information on and control over critical business processes and, if they do, the work is time-consuming and costly.



With Actional Enterprise, organizations with distributed, interconnected applications now have complete business process visibility across the infrastructure by specific business criteria and by individual process. Organizations can now leverage breakthrough technology to:

- > Automatically discover each business process
- > View the infrastructure that supports it in a process “flow map”
- > Access real-time business metrics on an executing process via a console, historical data in management dashboards, and business analytics

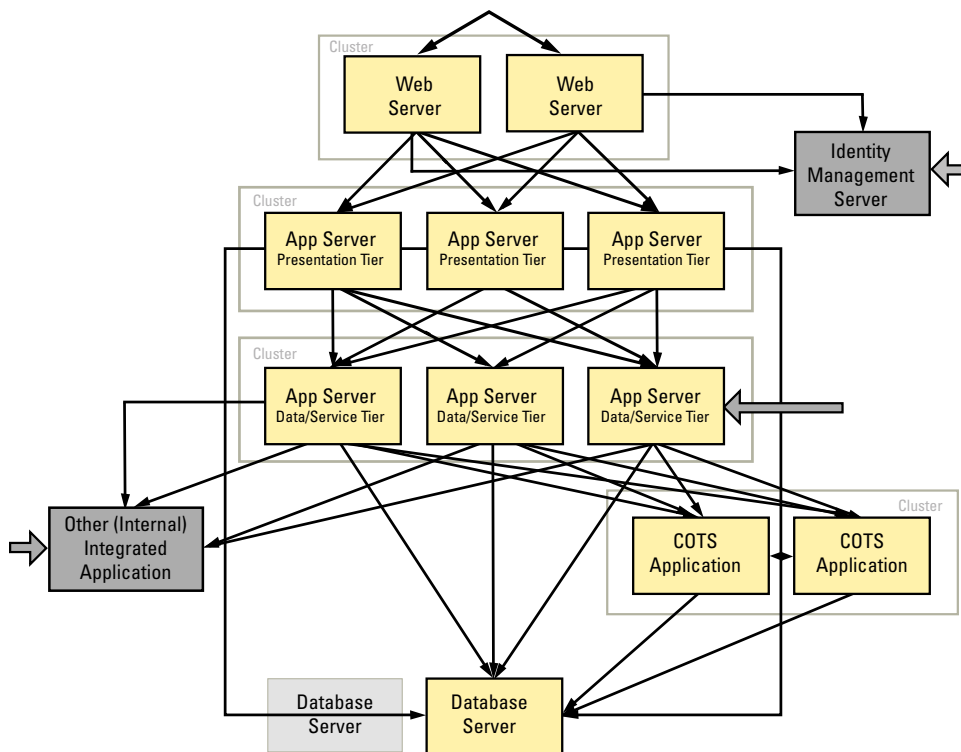
With this knowledge in hand, end users can then simply label (e.g., order fulfillment) the discovered process and begin applying appropriate rules and policies to it for specific service consumers. In this way, they can “push” appropriate instructions to the right infrastructure at the right time and for the right conditions—to optimize service infrastructure performance to meet SLAs and achieve business goals, such as ensuring the best customers get the best service.

By making it possible to define and understand all the components, events, and systems within a process and to get and analyze current and past metrics on how the process executes, Actional Enterprise enables you to define what is supposed to happen as well as what is not supposed to happen. You know immediately when a process goes wrong or even when a critical event doesn’t happen. In this way, your ability to manage and govern and to monitor SLAs is greatly enhanced. More to the point, Actional Enterprise enables you to view and manage an SOA from the eyes of IT and the eyes of business simultaneously.

DISTRIBUTED APPLICATION VISIBILITY TODAY


The Shortcomings of Synthetic Transactions

A typical multi-tier distributed application in a production environment, such as the one shown below, contains many moving parts. While many products exist that can report on the health of each individual application or machine in these types of environments, there are few effective approaches to determining the overall health of the business processes that flow through a network of connected but distributed and heterogeneous systems. The most common approach to understanding the health of the overall system is via synthetic transactions. Synthetic transactions are essentially “fake” or “test” transactions generated by management products. These test transactions, usually submitted as Web requests, are intended to mimic the typical actions of end-users and to see whether the results are as expected.



Unfortunately, synthetic transactions have two critical limitations. The first is that often the most important transactions to measure are the hardest to fake. For example, in an ordering system, it's easy to test a "check order status" transaction, because doing so has no adverse effect on the system. However, testing a "submit order" transaction is entirely different. This transaction may perform third-party credit card validation, commit data to databases, and send requests to fulfillment systems. To truly test this kind of order submission process the order submission must essentially be real (including real requests to the third parties in order to verify that they are also working correctly). Once the test order is submitted and verified, however, all of the actions that were triggered need to be rolled back so that the fake order is removed from all of the relevant systems. Correctly performing this type of transaction is complicated and error-prone.

The second critical limitation of synthetic transactions is that they can't provide the end user's perspective of whether a business process is functioning correctly. In reality, however, most business processes include background activities the end user never sees. And these background activities are typically a vital part of the overall business process. For example, an end user might successfully submit an order but never be billed because asynchronous messages from the ordering system to the billing system are lost in transit. In short, making sure the background billing activities are being processed correctly is a critical element in determining the health of the overall business process.



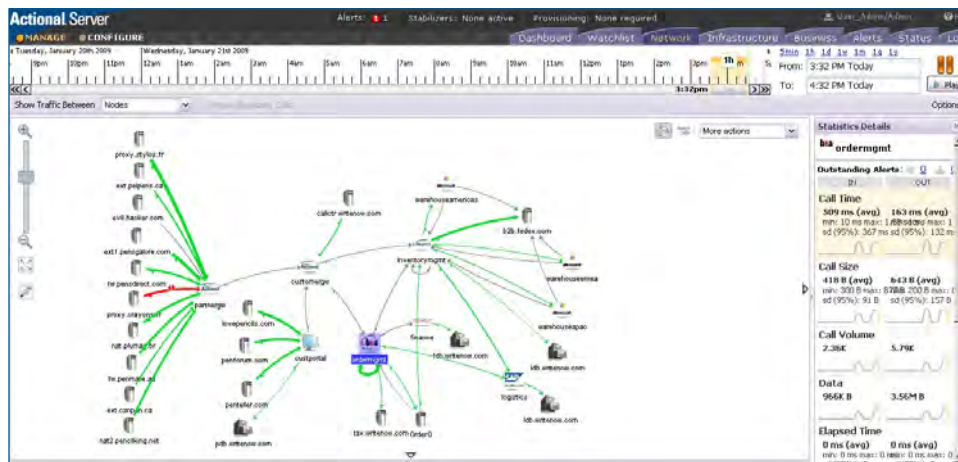
Another example also shows the limitations of current monitoring technologies: imagine being informed that over the last hour 5% of “buy transactions” failed or missed SLAs. This is important information, but tells only part of the story. Consider a few of the real business issues that this kind of reporting does not address:

- > Which real users specifically were affected?
- > How much money was lost because of the failure?
- > Were any of the real users gold customers?
- > Where in the process did the issues occur? What servers exactly were these transactions flowing through?
- > When will the issue be resolved?
- > How do I optimize service delivery so the most important customers get the best service?

Getting clear answers to these kinds of questions is the only way for both the business and IT sides of the organization to address the impact of a failure and provide the information for a speedy fix. Actional Enterprise is designed to address the shortcomings of traditional approaches, to provide true business process visibility, with:

- > **Visibility into each occurrence of an actual business process**, not just into synthetically created transactions. This visibility, including business metrics and analytics, provided by the Actional Management Server enables you to measure and report on actual service levels, broken down either by business process or by configurable business criteria, such as individual customer, customer group, region, business unit, or other custom-defined dimension.
- > **Visibility into every activity that is part of the business process**, not just the “foreground” transactions. This capability enables the Actional Management Server to determine if the entire business process, end to end, is operating as expected. If not, it can automatically perform triage to determine exactly where the process is failing in its flow across the many connected tiers and applications within the architecture.
- > **Visibility when something doesn’t happen is becoming a key concern**, but traditional monitoring can only report when something does happen. Only when you understand the business process can you know and predict what should happen. For example, the inventory system should respond within X seconds. If not, the purchase transaction is hung, waiting for it.

> **Visibility into shared, dynamic, and loosely coupled services**, which will become more and more commonly used as distributed, service-based applications become widely adopted. This drives the need to automatically map out the exact set of application-level infrastructure that supports a given business process, especially when multiple business processes overlap and share some of the same systems, services, or applications. In these cases, in which there is a potential for system overload at peak times, this visibility is the key to optimizing service-network behavior for key customers—for example, by prioritizing traffic for their transactions.




Actional's Flow Mapping™ technology automatically discovers services and maps their dependencies for the entire distributed, interconnected infrastructure.

BUSINESS PROCESS VISIBILITY

In Actional Enterprise, unique Actional Flow Mapping™ technology gives IT teams a real-time view into the actual path taken by business transactions and business processes within a distributed services network. This ability to dynamically map transactions and processes to the actual infrastructure allows teams to measure availability and reliability and SLAs relevant to actual transactions, triage problems more rapidly, and accurately manage services and applications based on process, not just a series of independent services with rules applied in a point-by-point fashion.

This Actional technology provides visibility from transaction origination, through services, through Web and application servers, and into packaged applications, databases, and legacy systems. This visibility is represented in an intuitive graphical layout as a flow map with drill-down functionality that is granular enough to distinguish within a cluster exactly which machine and application instance a particular unique transaction went through. In other words, the infrastructure view that IT people are familiar with is tied into business



process metrics and data that line-of-business managers will understand intuitively, for example, order-to-fulfillment time or other user-defined business metrics. Through this dashboard, all stakeholders get the information they need to answer critical questions about service and service-network performance:

Business

- > How is my business doing?
- > Are customers—including individual customers, customer groups, regions, business units, or other custom-defined group—experiencing problems?
- > Am I keeping up with demand?
- > Am I meeting my commitments?

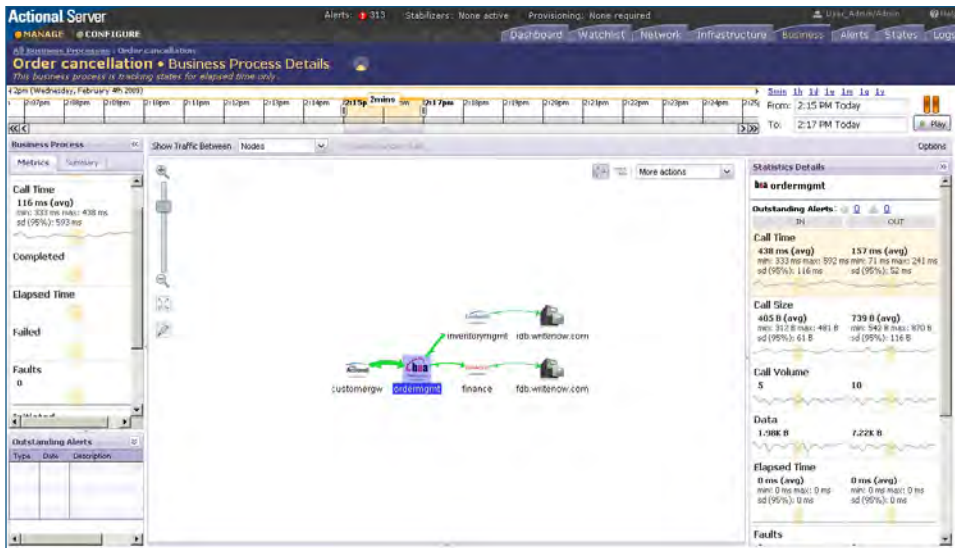
Process

- > What really occurs in ordering?
- > How many orders are in production?
- > How long from order to delivery?
- > Why has purchasing stalled?

Infrastructure

- > Which services are where?
- > Who uses what services?
- > Where are the bottlenecks?
- > What's the impact of change?

Even in cases where the organization has lots of infrastructure shared across multiple business processes, Actional Enterprise makes it possible to understand the underlying interdependencies that support a particular business process. For instance, a customer information system might support 5, 10, 20, or 30 business processes. With Actional Enterprise you can look at each individual business process separately, so you understand how it ties into the IT infrastructure, in order to understand the service being delivered to specific service consumers. Actional Enterprise does this by observing real business transactions, not synthetic transactions.



This view has isolated a single business process and the exact infrastructure that supports it. Notice the correlated data: from deep IT operational information ((right column displays) to process-level metrics (left column).

Actional also makes it possible to automatically discover the business processes themselves—for any customer, customer group, partner, division, business unit, region, or user-defined segment. The result is that each process can be viewed through the business perspective or the IT perspective, but the two views are directly connected. The business owners may be concerned only about the dashboards and metrics that drill down into their line of business. (See Service Delivery Optimization below.) The IT staff may be more concerned about the IT-level metrics under their direct control. No matter. The user has the flexibility to start in either direction, for example, to start with business metrics, drill down to the business-process-level view, and see the IT infrastructure supporting it, or vice versa.

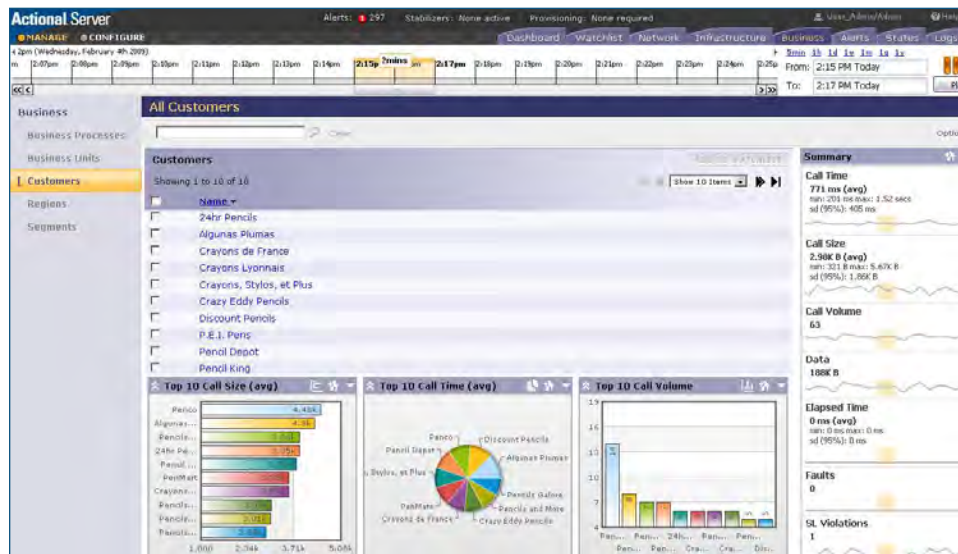
Regardless of the underlying databases, reporting applications, or messaging middleware, the correlation between the IT view and business view of the same process is seamless every step of the way because the Actional interface offers distinct configurations for different users:

- > Business perspective with key performance indicators (KPIs) for the business process
- > Process view with process-wide metrics and status
- > IT view with details of underlying services, applications, and infrastructure

In fact, unique to Actional, IT and business managers have a context within which to discuss issues based on mutual understanding. So when business concerns conflict with or are impacted by IT functions, they can quickly determine the nature of the problem and optimize IT to resolve the problem and improve business performance. IT teams can drill down from a process view to find the source of issues. Problems are resolved faster. Business efficiency improves overall. Not only does it become possible to apply policy and rules at a process level, but you can also:

- > Cut out the noise of unrelated activities
- > See and manage only the infrastructure supporting the selected process
- > See only the process' usage of shared services

With Actional, you gain unparalleled visibility and insight into how your IT infrastructure is serving your business. Actional's configurable dashboard showing expanded data for this process including service levels broken down by customers and classes in this view.



Actional's configurable dashboard showing expanded data for this process.



SERVICE DELIVERY OPTIMIZATION

This business process visibility provides the basis for managing service delivery to meet business goals. Actional Enterprise allows service and application usage to be captured and analyzed from the perspective of individual customers, customer groups, partners, channels, business units, regions, or other user-defined group. It also allows KPIs—custom business metrics related to specific business processes—to be monitored, tracked, and acted upon.

In addition to receiving this information in near real time, line-of-business managers can access historical data through an Actional dashboard, both in user-friendly graphical formats and in reports. This information enables them to understand how customers, for example, the most important customers, are being serviced by the SOA and to deal with any potential issues.

Based on this information, business managers can then alter service and application behavior to meet business goals, either manually or automatically, to optimize key customers' service and enhance their experience. Actional Enterprise provides multiple control mechanisms to modify application behavior. For example, it can:

- > Re-reroute traffic to optimize service for key customers based on service-level agreement (SLA) policies, alerting (based on those policies), and content-based routing
- > Provide automatic responses to violations of policy, such as re-routing processing during heavy load conditions or outages to maintain quality of service
- > Send service requests to the correct version of a service—to reduce disruption during service or policy upgrades by incrementally migrating users to the latest version

In short, through a combination of business insight, policy-based management and alerting, and controls for altering runtime operations, Actional Enterprise enables organizations to prioritize and optimize services traffic to serve business goals.



CONCLUSION

For many organizations, the promises of distributed, interconnected applications—cost savings through service reuse, easier testing, higher availability, and better scalability—have been difficult to fully realize because of poor visibility into distributed, service-based processes. This lack of visibility has had negative ramifications for the ability of IT staff and business managers to find common ground in understanding each others' needs and priorities. Actional Enterprise provides a comprehensive solution to these problems and enables the enterprise to realize the full potential of distributed, interconnected systems by:

- > Ensuring IT is aligned with the business
- > Improving business efficiency
- > Optimizing IT to deliver more business
- > Enabling quick determination if business issues are IT-related
- > Allowing users to gather business information to improve non-IT-related issues
- > Providing control mechanisms to modify services-network behavior dynamically

The Actional Web site, www.actional.com, hosts a library of material, providing insight into the full capabilities of Actional. Suggested material includes the Actional FLASH demo at www.actional.com/demo/actional.html, and a buyers' guide, "Managing Business-Critical Application: A Guide to Finding the Right Solution" at www.actional.com/resources/whitepapers/critical-applications-buyers-guide/



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