OPTIMIZE

MEASURING THE TOTAL VALUE OF MERCURY'S QUALITY MANAGEMENT SOLUTIONS

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

EXECUTIVE OVERVIEW

Companies around the world are looking for ways to improve business results while reducing costs. To this end, IT organizations are under constant pressure to increase the value of delivered applications by improving quality, performance, availability, and time-to-market while raising IT productivity and reducing costs.

In response to these IT challenges, executives are now setting an important new business strategy to improve quality, reduce costs, and align IT with business goals. Business technology optimization (BTO) is the IT initiative to optimize and align technology and business performance. BTO promotes a systematic approach to quality management for IT, with the ultimate goal of delivering and maintaining higher-quality applications at a lower cost. Many IT organizations have turned to Mercury's solutions for BTO as a fundamental IT strategy. Still, IT budgets and spending patterns are being scrutinized, and CIOs demand that IT investments—even for BTO—be justified, and that they align with the success of the business. Many are challenged with the following questions:

- What is the relationship between IT investment and business value?
- How can I translate strong intuitive feelings and great results to quantifiable benefits?
- How can I quantify "managed" business risk vs. alternative "no-action" strategies?
- How can I persuasively communicate the BTO value proposition across the organization?

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To help answer these questions, Mercury initiated a collaborative ROI assessment research program with experienced customers across eight vertical industry segments. Our goal was to develop a customer-centric ROI framework and process to help customers understand, quantify, and communicate the IT and business value of BTO. These concepts are important for not only those looking to justify future BTO investments, but also for those who want to better manage, control, and maximize value delivered with BTO.

For the purposes of this study, we focused on our quality management suite of BTO products—a subset of the full BTO suite, which also includes IT governance and application management. The key takeaways of this study are:

- **Total Benefit Spans Organizations**

  As illustrated in Figures 1 and 2 below, businesses realize value when IT delivers applications that enable important business processes. The total value of these applications is measured by the benefit they bring to the business unit, usually linked to achievement of business goals and measures of improved effectiveness such as productivity, revenue, customer satisfaction, risk, and cost. At the same time, IT incurs costs associated with delivering and managing these applications. By applying Mercury quality management products to the IT process, these organizations realize benefits of improved quality management and quality results, improved application performance and availability, faster time-to-market, and lower delivery and support costs. Improved IT effectiveness leads to delivery of better applications, more quickly, which leads to even greater value to the business.

- **Benefits Are Quantifiable Through Straightforward Approach**

  Understanding BTO value starts with a strong understanding of a company's business context: business imperatives, business applications, IT imperatives, and implementation of Mercury offerings. This approach leverages "ROI Scenarios" (value propositions broken down into small, concise descriptions of value) to help customers quickly identify the most relevant and meaningful areas of value. When these scenarios are interlocked with the customer perspective, customer-specific business value is uncovered. Finally, total benefit is measured by summing the value associated with the most relevant scenarios.

Traditional quality management (Figure 1) methodology entails that IT builds and/or deploys applications for business users. Business value is a measure of the efficiencies derived from their business use; either from increasing productivity, driving incremental revenues, or reducing costs. By applying a Mercury-enabled quality management methodology, IT organizations improve quality management processes and increase productivity, while producing better applications (i.e., increased performance, availability, quality, etc.) more quickly. Therefore, Mercury quality management solutions not only add value to IT; better applications mean the business organizations see even more business value (e.g., increased productivity, revenue protection, and reduced costs). The total value of Mercury BTO-Enabled quality management is the sum of the value achieved by IT, and the increased value achieved by the business (Figure 2).

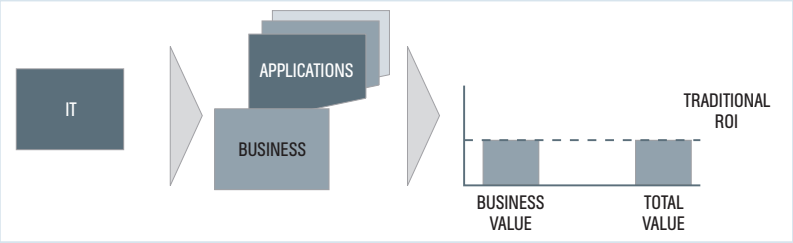

Figure 1: Traditional quality management

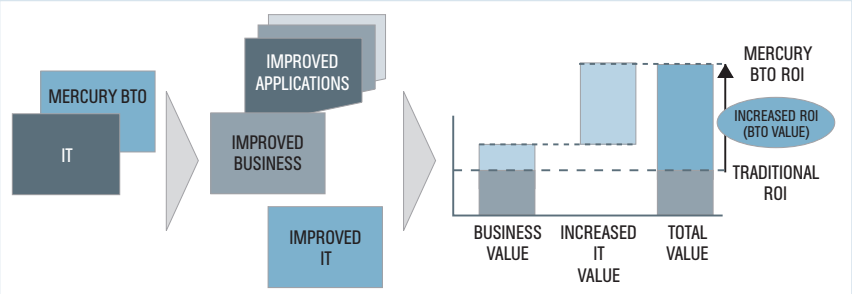

Figure 2: Mercury BTO-enabled quality management

- **Benefits are Significant and Customer-Validated**
  Mercury worked closely with customers to measure value. Results include significant IT productivity gains (greater than 90 percent in some areas), significant business productivity gains, and millions of dollars of protected/maximized revenue.

This paper provides insight into these findings, including the scope and nature of a systematic ROI approach, and selected case examples from our research. We hope this information will help you: understand the overall value of Mercury's quality management offerings, measure the total benefit, improve alignment between IT and the business, and establish a benchmark from which you can continuously measure IT process improvement.

MERCURY'S QUALITY MANAGEMENT ROI MODEL

Partnering with customers on the best approach to measure ROI, we found that effectively assessing the total value of Mercury offerings requires discovery in four key areas of business perspective: business imperatives, IT imperatives, business applications, and implementation of Mercury offerings.

Once we understood a customer's business context and identified the relevant ROI Scenarios, we could quickly identify areas of value, as illustrated in Figure 3. We also found that ROI Scenarios helped address the complexity and uncertainty associated with collecting relevant data.

Business Imperatives

Any meaningful ROI discussion must be connected to enterprise business imperatives—or goals and strategic initiatives that guide your business. It is also important to understand how your business is using IT-delivered applications to achieve these business imperatives and maximize its own effectiveness.

Business Applications

Effective IT-enabled business processes are an essential characteristic of today's agile business organization. Understanding the nature and value of these applications to the business is integral to identifying total BTO value. Important questions are:

- Which applications are considered most critical to the business?
- What is the value these applications bring to the business?
- What are the challenges/risks associated with delivery and acceptance of these applications?
- What are the deployment details of business applications (e.g., how many employees use them and how often, are they customer-facing or internal only, etc.)?
- What is the business risk associated with poor quality, performance, or availability?

IT Imperatives

Corporate IT seeks to effectively deliver and manage applications for the business. IT organizations using Mercury quality management offerings focus on improving quality, performance, availability, delivery time, and cost. Understanding the relationship between IT processes, goals, and projects, and how they help achieve business objectives, guides us in understanding where value exists or can be achieved.

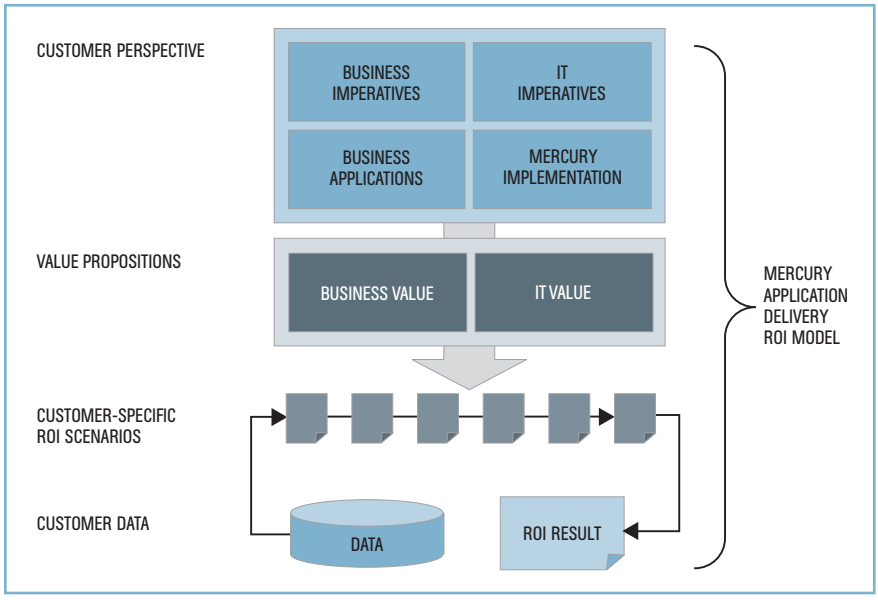

Figure 3: The Mercury Quality Management ROI Model has four key components.

Mercury Implementation

To measure the full benefit of deploying Mercury solutions, you must understand important implementation details, such as:

- Which solutions have been, or will be, deployed?
- Which IT processes are or will be influenced, and how?
- How many employees, businesses, and processes throughout your IT organization are involved in these processes?
- What it would cost to increase your effectiveness without quality management technology?

Value Propositions

IT Value Overview–Total IT Output and Effectiveness

IT effectiveness is most often measured by a combination of: quality, performance, and availability of applications delivered; time to release these applications; and overall cost of delivering and managing them. Our customers say Mercury quality management offerings help them make significant and measurable improvement in all of these areas.

Table 1 provides a high-level outline of the most common benefits achieved by customers using Mercury quality management products. Each row represents a relationship between an important process or measure of effectiveness, the benefit of the product, and a general summary of the solution/benefit.

IT BENEFIT OVERVIEW

IT MEASURES	BENEFIT	VALUE PROPOSITION	PRODUCTS
Quality Management Process Effectiveness	Faster Better	Customers find that automating key quality-management processes (e.g., defect management, testing management, application readiness analysis, QA project management, etc.) results in significant improvements in: time and accuracy of test planning, staging, and execution; time to assess application status and readiness for release; and overall application quality.	Mercury TestDirector™
Testing Process Effectiveness	More Better Faster Cheaper	Customers find that automated test cycles can be executed as much as 95% faster, resulting in significant time/people/cost savings. By testing faster, customers can test significantly more in the same allotted, or test the same amount more quickly. This results in the ability to release more quickly/frequently, with better overall application quality, at the same or reduced costs.	Mercury QuickTest Professional™ Mercury WinRunner™ Mercury TestDirector Mercury LoadRunner™
Application Quality	Better	Customers find that the ability to plan and execute key testing processes in a managed and automated way leads to faster identification of more defects, and better overall understanding of application quality status. This results in significantly improved application quality.	Mercury QuickTest Professional Mercury WinRunner Mercury TestDirector Mercury LoadRunner
Application Performance, Availability	Better Cheaper	Customers find that automating the process of performance and capacity validation leads to much better identification of bottlenecks and other problems that would slow performing applications or cause production down time. By identifying more of these issues more quickly, they release better-performing applications in less time. Additionally, by validating and improving capacity as part of this process, customers can ensure that applications are scaled to meet demand while reducing their total capital expenditure on infrastructure.	Mercury LoadRunner
Quality Management Time	Faster	Quality management and testing are critical components of the quality management process. Additionally, difficulties in understanding the state of application quality and performance capability are often last steps, preventing an application from going from development to production. By implementing BTO solutions that automate these key processes, they are done more quickly and more accurately, resulting in faster release and fewer delays.	Mercury QuickTest Professional Mercury WinRunner Mercury TestDirector Mercury LoadRunner
Application Management and Support Effectiveness	Cheaper More	Customers find that using Mercury BTO solutions leads to significantly less production support demand. There are fewer calls to the help desk, production specialists respond to fewer issues, and developers spend less time doing rework/fixing bugs. This means that staff can be applied to other high-value projects.	Mercury QuickTest Professional Mercury WinRunner Mercury TestDirector Mercury LoadRunner
Business Alignment	More Better Cheaper	With BTO solutions in place to help measure and manage process, customers find that it is easier to set common objectives, SLA, etc. with the business units they support. The result is less time spent on managing requirements, user acceptance testing, and fixing things that didn't meet customer expectations, freeing people to work on other high-value projects.	Mercury QuickTest Professional Mercury WinRunner Mercury TestDirector Mercury LoadRunner

Table 1

Business Value Overview–Maximizing Business Effectiveness

Business effectiveness most often includes measures of revenue, productivity, cost, and risk. Customers say our quality management products lead to significant and measurable improvement in all of these areas.

Table 2 outlines the value relationships and benefit achieved by businesses using optimized applications. These applications take advantage of BTO during the quality management process.

ROI Scenarios–Quantifying BTO/Quality Management Benefits

The most straightforward approach for customers to identify and quantify relevant and high-impact areas of benefit was to break down the overall value proposition into well-defined, concise descriptions of value associated with each Mercury product, called ROI Scenarios. ROI Scenarios represent the most granular building blocks of value. They provide a consistent way to characterize value propositions and incrementally quantify solution benefits. For a given IT and business organization, ROI Scenarios can be assembled into a business-specific "ROI Structure" that clarifies and quantifies the value of a company's investments in Mercury's quality management products. A set of scenarios appears in the appendix.

BUSINESS BENEFIT OVERVIEW

BUSINESS MEASURES	BENEFIT	VALUE PROPOSITION
Business Process and Employee Productivity	Better Faster Cheaper	Better-performing business processes and less application down time means employees can execute more transactions in less time, resulting in business benefits such as reduced personnel costs, improved customer service, and maximized revenue.
Revenue	More Faster Cheaper	Applications supporting automated business processes are often at the core of company revenue. Maximizing quality, performance, and availability has significant business benefits. For customer-facing applications, poor performance and down time leads to customer defection and lost revenue. For internal-facing applications, sales and service personnel process fewer orders. BTO reverses this effect, allowing companies to maximize order throughput, customer retention, and revenue.
Business Risk	Better	Customers express that failure to maximize quality, performance, and availability is associated with significant negative business risk. Every fraction of percent of application and business availability can cost millions of dollars in lost business, employee productivity, and customer attrition. In some cases, these challenges have led to material impact on the overall company top and bottom line, and a resulting drop in market cap. When IT uses Mercury BTO to optimize quality management, customers experience a large reduction in business risk.
Expected Business Value	More	Whenever a business requires technology or business applications, BTO can help maximize those benefits. Applications that are delivered on time lead to faster achieved application value than if the release were delayed.

Table 2

CENTERS OF EXCELLENCE–MAXIMIZING BENEFIT THROUGH CONSOLIDATION AND CENTRALIZATION

Many of our customers have grown their success beyond one or a few projects, incorporating Mercury quality management offerings into their overall IT strategy. These customers have experienced the benefits and wish to optimize on a greater scale. Rather than distributing Mercury quality management products throughout the organization and incurring greater incremental costs, many large IT organizations are starting to centralize the key parts of the quality management process. Benefits include reduced costs associated with training, travel, support, licenses, and administration; and increased efficiency and effectiveness through centralization of knowledge and experience. Figure 4 illustrates the effects of the Center of

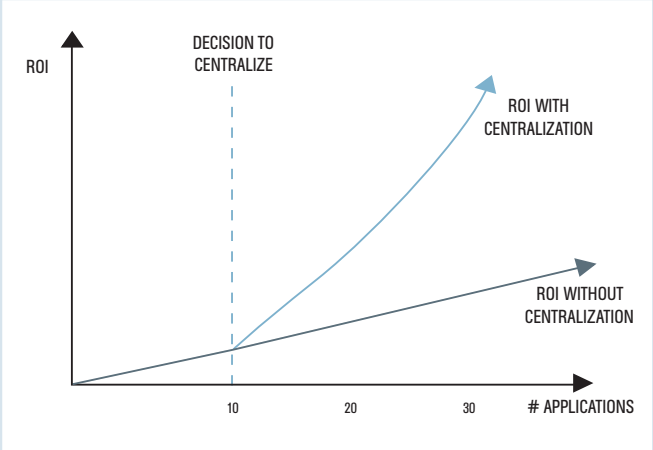

Figure 4: Example of the value of centralization

ROI Scenarios categorize value in two areas: IT and business. IT scenarios outline value achievable within the IT process (e.g., value associated with improvement in quality management, productivity, or process centralization). Business scenarios outline value a business unit can achieve by using optimized applications (e.g., value associated with greater employee productivity or maximized revenue with greater application availability).

Table 3 defines the key components of an ROI Scenario.

CUSTOMER DATA AND RESULTS

The next step is to transform abstract value propositions into quantifiable benefits using the ROI Scenarios. The following examples from real customer engagements–across multiple vertical segments–not only show how to approach this process, but also serve as real examples of value potential.

ROI Scenario Case Examples

As stated earlier, ROI Scenarios represent the most granular building blocks of business value. Scenarios provide a consistent way to characterize value propositions and incrementally quantify BTO benefits. ROI Scenarios can be assembled into a business-specific "ROI Structure" that clarifies and quantifies the value of your current BTO investments–each one a building block to understanding the total value. A summary of ROI Scenarios appears in the appendix.

As described earlier, ROI Scenarios categorize value in two areas: IT and business. Following are examples of these cases:

KEY COMPONENTS	
Hypothesis	A specific statement of value.
Solutions and Benefit Summary	A description of the Mercury BTO solutions leading to the statement of value, and how they contribute to the value achievement.
Applications	Which types of applications best apply to this scenario.
Data, Metrics, and Calculation Example	What are the important measurements to be collected that will lead to quantifying the value of this scenario (e.g., number of testing cycles, frequency of testing cycles, number of tests run per cycle, or number of testers). Detailed example calculations–sometimes before and after–that will demonstrate how to approach translating value statement + customer data into quantified ROI.

Table 3

AUTOMATION RESULTS IN IMPROVED IT PROCESS EFFECTIVENESS				
Hypothesis	Automating the defect management process reduces the time it takes to assess (and report on) application quality and release readiness. This results in improved management productivity and cost savings.			
Solutions and Benefit Summary	Mercury TestDirector, a centralized test management repository and defect management system, provides significant efficiencies over a manual approach.			
Applications	An integrated business system handling full lifecycle for Group Disability (underwriting, claim processing, billing, etc.)			
ROI Example	**Metrics**	**Before**	**After**	**Variance**
	Number of defects found per test cycle	220	220	
	Average assessment (hrs)	0.67	0.25	
	Total assessment time (hrs)	147	55	
	Average reporting time (days)	35	3.5	
	Average reporting time (hrs)	280	28	
	Total assessment + reporting time (hrs)	427	83	
	Average hourly cost	$41	$41	
	Cost per cycle	$17,493	$3,403	
	Savings per cycle			$14,090
	Cycles per year	7	7	
	Cost per year	$122,453	$23,821	
	SAVINGS PER YEAR			**$98,632**

81% reduction in assessment and reporting time

Table 4

IT Scenarios

Example A: Test Management with Mercury TestDirector

Consider a company specializing in disability income protection. The business is particularly sensitive to economic conditions. As a result, it continually seeks ways to achieve lower cost and higher value than its competitors. We constructed an ROI Scenario to show how Mercury TestDirector improves IT productivity by compressing the time it takes to assess and report on application quality and release readiness by 81 percent (Table 4).

Example B: Regression Testing with Mercury WinRunner

A travel services company offers technology solutions to corporate travel departments to control corporate travel costs. This is a highly competitive marketplace driven by commoditization and intense price pressure. Consequently, the customer experience, product quality, and cost containment are of paramount importance. An ROI Scenario (Table 5) shows how automated regression testing reduced the test cycle duration by 60 percent and testing level of effort by 20 percent on just one application.

AUTOMATION OF TESTING PROCESSES RESULTS IN IMPROVED IT PRODUCTIVITY			
Hypothesis	Automation of test scripts in regression testing leads to lower testing costs per release.		
Solutions and Benefit Summary	Mercury WinRunner enables automation of functional and regression testing–supporting fast and flexible development. Tests that were run manually before might take hours or days, but when automated take only minutes or hours. This results in the ability to complete the same amount of testing in less time.		
Applications	Application product for corporate travel departments		
ROI Example	**Metrics**	**Before**	**After**
		100% manual test cases = 110	70% manual / 30% automated test cases = 110
	Test cycle duration (days)	25	10
	Number of test cycles per release	3	3
	Total elapsed time (days)	75	30
	Testing level of effort (# FTE)	3	6
	Level of effort (staff days)	225	180
	Staff hours per day	8	6
	Level of effort (staff work hours)	1350	1080
	Hourly rate	$78	$78
	Cost per release	$105,300	$84,240
	Number releases per year	12	12
	Annual cost of testing	$1,263,600	$1,010,880
	Cost of developing test scripts		$30,000
	SAVINGS		**$222,720**

Table 5

Example C: Load and Performance Testing with Mercury LoadRunner

The disability income protection company is challenged with IT complexity and supporting a rapidly expanding portfolio of products and services. Consequently, it is critical that the company release quality, high-performing applications into production—minimizing its production support costs. Using Mercury LoadRunner reduced this company's overall time to diagnose and fix problems by 63 percent (Table 6).

INCREASED QUALITY RESULTS IN IMPROVED IT PRODUCTIVITY				
Hypothesis	Load and performance testing allows system and application problems to be discovered before an application is released to production, where such problems increase the demand for production and help desk support. Finding these problems before releasing to production results in decreased costs to diagnose and resolve problems.			
Solutions and Benefit Summary	Mercury LoadRunner allows problems to be discovered in test, before being released to benefit production for general use. This reduces the number of application failures that occur in production, reducing problem diagnosis and resolution time, thereby saving money.			
Applications	An integrated business system handling full lifecycle for Group Disability (underwriting, claim processing, billing, etc.)			
ROI Example	**Metrics**	**Assumptions**	**Before**	**After**
	Number of production support people	5		
	Average production support hourly cost	$41		
	Percent reduction of defects through more rigorous testing through automation	50%		
	Number defects found in production		162	81
	Percent reduction in time to diagnose and fix production problem	25%		
	Average production support time to diagnose and fix problem (hours)		12	9
	Total time to diagnose and fix problems (hours)	Problems fixed 63% faster	1944	729
	Average number of production support staff working on one problem		2	2
	Production support costs to diagnose and fix problem per person (hours)		$79,704	$59,788
	Total cost to diagnose and fix production problem		$159,408	$59,778
	SAVINGS			**$99,630**

Table 6

Example D: Capital Containment with Mercury LoadRunner

An integrated gas and chemical company fostering a "One Company" culture revised its business model to divest of non-performing business units and align its strategy with growth markets. As part of its strategy, the company made significant investments in technology-enabled work-process improvements, including company-wide implementation of SAP. Using Mercury LoadRunner to simulate 60 percent of the production transactions by volume, the Quality Management organization validated the company's rollout strategy and avoided the costs associated with a second production instance of SAP. The result is an estimated cost savings exceeding $5 million (Table 7).

IMPROVED APPLICATION PERFORMANCE RESULTS IN REDUCED COSTS	
Hypothesis	Proactively improving the performance of applications during testing and performance optimization stage (prior to application release to production) reduces the requirement to add infrastructure capacity.
Solutions and Benefit Summary	Mercury LoadRunner helps predict, validate, and optimize system performance to optimize use of infrastructure resources leading to containment of capital costs and associated operating expenses. Specifically, load testing for the SAP ERP Release 2/3 projects validated single-instance design and proved that customer did not need to create a second instance of SAP in Europe. This also allowed the company to maintain its "One Company" vision and ensure consistency of business processes across the organization.
Applications	SAP
ROI Example	• Load and performance testing validated single instance design–eliminating need for a second instance of SAP in Europe. • Cost of second instance of SAP = $3-5 million (assumes cost of second instance would be at least as much as cost of current SAP disaster recovery environment) • Bottom line: cost avoidance = $5 million (given that a second instance would need higher capacity to support the business processes)

$5 million saved

Table 7

Example E: Mercury TestDirector–The Economics of Consolidation and Centralization

A wireless communications carrier's BTO goals were to align technology with business goals, control costs, and maximize the value of its IT-delivered business processes. Its Enterprise Testing Services organization uses our quality management products to provide a common quality framework for its IT project teams. As a result, the company reduced its costs through centralized, standardized testing services, processes, and technology that support multiple groups in various geographical locations. It has created a distributed architecture and centralized testing approach for predicting system performance and behavior. An ROI Scenario quantifies the business benefit of this approach. The result: Over a three-year period, the company estimates cost savings greater than $2.3 million.

Similarly, the integrated gas and chemical company quantifies its infrastructure costs savings in an ROI Scenario. By eliminating 19 servers, a centralized approach saved over $900,000–in net discounted present value terms (Table 8).

CENTRALIZATION AND DEMAND AGGREGATION RESULTS IN IMPROVED IT EFFECTIVENESS				
Hypothesis	Centralized QA maximizes value of investment in licenses and hardware infrastructure, resulting in significant cost savings.			
Solutions and Benefit Summary	Mercury TestDirector empowers QA to centrally manage testing assets. Centralization of QA resources achieves economies of scale by eliminating the need to purchase and deploy additional servers.			
Applications	All			
ROI Example	**Metrics**	**Year 1**	**Year 2**	**Year 3**
	Annual discount rate	3%	3%	3%
	Number servers eliminated as result of centralized QA approach	19	19	19
	Annual cost of ownership of single NT server (based on 2001 Gartner EOC Benchmark data)	$15,946	$15,946	$15,946
	Total annual cost of ownership of NT server	$302,974	$302,974	$302,974

$900,000 saved

Table 8

Business Scenarios

Example A: Revenue Protection

Over $2 billion of revenue passes through the chemical manufacturer's SAP system each year. The company and IT invested in rigorous BTO practices and technology to minimize the potential revenue impact of critical defects inadvertently leaking into production. An ROI Scenario describes the impact of using Mercury products as a critical insurance policy against revenue loss. The bottom line: over $400,000 in revenue protection each year (Table 9).

AUTOMATED TESTING RESULTS IN PROTECTS REVENUE				
Hypothesis	The disruption of business processes from failed revenue generation or revenue management applications results in material revenue loss and opportunity costs. Reducing the defects in these applications protects substantial revenues.			
Solutions and Benefit Summary	Effective testing practices during quality management led to a reduction in critical production defects that adversely affect revenue. Mercury WinRunner, Mercury LoadRunner, and Mercury TestDirector solutions help improve business process quality. This is achieved by automating test management processes, which allows: better "application readiness" decision making and better measurement of test coverage. Mercury WinRunner automates functional and regression tests–significantly reducing the time required to run tests, and improving test effectiveness. Mercury LoadRunner helps predict, validate, and optimize system performance to ensure the stability and capacity of applications before they are released into production. This results in greater validation of key business processes–safeguarding business revenue.			
Applications	SAP			
ROI Example	**Metrics**	**Assumptions**	**Before**	**After**
	Annual revenue managed by SAP applications	$2,200,000,000		
	Days per year	360		
	Hours per day	16		
	Revenue per hour	$381,944		
	Average duration of outage (hours)	1		
	Expected percent reduction in incidents based on automated testing capabilities	50%		
	Expected number of critical outages per month		2	1
	Revenue at risk per month		$763,889	$ 381,944
	Revenue at risk per year		$9,166,667	$4,583,333
	Percent lost revenue	10%		
	Revenue safeguarded			$458,333

Table 9

$458,000 saved

Example B: Minimizing the Risk of Customer Abandonment

In its ongoing struggle for market share, cost avoidance is not enough for a travel services company. It must also protect against loss of customers caused by failure to provide functionality and content in a flagship application product. To ensure timely delivery of this functionality, testing automation empowered the company to move to monthly as opposed to quarterly releases of its product. In this ROI Scenario (Table 10), the company projects the impact of varying customer abandonment rates and the associated revenue effect. This kind of sensitivity analysis is another form of risk assessment.

Completing the ROI Approach

The final step in the process is to add the benefit measured by all relevant scenarios together.

Using this information to establish a benchmark for future improvement is an integral part of a complete BTO implementation. Total expected value across more applications can typically be extrapolated by multiplying the initial results. An example called out on page 13 illustrates a successful approach to consolidating and reporting results.

AUTOMATION OF TESTING AND QUALITY PROCESSES MAXIMIZES REVENUE					
Hypothesis	Testing automation empowers delivery of releases on a monthly (as opposed to quarterly basis)				
Solutions and Benefit Summary	Mercury BTO offerings support fast, flexible development of applications by streamlining the testing and development of these applications, allowing organizations to reduce the attrition rate of their customers.				
Applications	Application product for corporate travel departments				
ROI Example	**Metrics**	**Assumption**	**Revenue Protection Scenarios**		
	Revenue per month	$360,000			
	Number of active customers	140			
	Attrition rate if quarterly releases vs. monthly releases		5%	10%	20%
	Lost revenue per month		$18,000	$36,000	$72,000
	Lost revenue (annual)		$216,000	$432,000	$864,000

Table 10

$864,000 protected

SUMMARY

In this paper you have read about the dramatic improvements in cost, quality, and productivity that are possible by using Mercury's quality management offerings. In addition, you have seen examples that demonstrate significant benefit achievement in both IT and business value. These results are applicable across any industry that depends on IT-delivered applications to meet business objectives.

There are four key lessons that should be remembered when considering total value and ROI for Mercury's quality management offerings:

- **Optimized quality management benefits both business units and IT organizations.**
  The benefits of optimizing quality management processes may be intuitive from an IT perspective, but the end goal is to support business units by helping them increase productivity, maximize revenue, and achieve business objectives. Mercury BTO offerings enable improvement for both.

- **BTO benefits can be quantified using our customer-validated approach.**
  Business discovery feeds selection of relevant ROI Scenarios (granular, concise descriptions of value). These scenarios guide appropriate data collection and benefit calculation. Total benefit is measured by adding together all scenarios. Mercury customers have validated this approach across eight vertical industries.

- **Real people at real companies have realized these benefits.**
  This document has highlighted the significant benefits realized by companies across eight market segments. Mercury has relevant case studies available and you can feel confident you'll realize comparable results.

- **Companies can maximize the benefits of BTO by centralizing quality management using Mercury Quality Center™ and Mercury Performance Center™.**
  Companies are maximizing benefit of Mercury quality management products by centralizing key quality management processes. Doing so helps companies more effectively apply the concepts in this paper to more applications at a lower overall cost by consolidating knowledge, experience, and technology.

- **This framework is a powerful tool for increasing your domain expertise and credibility.**
  You are the domain expert for understanding how technology enables your company to perform more efficiently. This model is a business-oriented approach that helps you articulate and quantify that understanding. This is important not only in terms of making you and your organization more effective, but increasing your credibility with your peers and CEO.

This paper is intended to give you a strong sense of the mechanics for considering ROI associated with Mercury's quality management products, and the benefits already being achieved by thousands of large and small IT organizations. Mercury sales representatives are available to help you further understand the value BTO has to offer. If you have questions, contact Mercury at +1 800-837-8911.

ROI ANALYSIS SUMMARY FOR TRAVEL SERVICES COMPANY

Business Imperatives: Competition for market share drives company objectives to (a) be cost competitive and (b) maintain customer loyalty. Accomplishing these objectives requires improvement in company cost structure, and company differentiation by offering high-quality, fast, content-rich solutions that exceed competitive solutions, thereby reducing the risk of customer abandonment and protecting revenue.

IT Imperatives: Meeting these objectives required that IT provide world-class reliability and speed, while establishing an quality management process capable of responding to customer demands for a wide range of new application features and content. Given the complexity of technology in this environment, managing quality and reducing ongoing support costs was a significant challenge.

Applications: For purposes of its ROI analysis, the company elected to examine the ROI effects on two of its flagship applications.

IT Value Achieved = $1 Million

- Test Management Using Mercury TestDirector
  - Reduced Documentation Time–43% reduction
  - Reduced Analysis Time–50% reduction
- Regression Testing Using Mercury WinRunner
  - Reduced Test Cycle Duration–60% reduction
  - Reduced Testing Level of Effort–20% reduction
- Application Monitoring Using Mercury System Availability Management™ and Mercury SiteScope™
  - Reduced Problem Diagnosis Time–75% reduction

Business Value Achieved = $1.8 Million

- Improved Quality, Performance, Reliability Protects Revenue

TOTAL BTO BENEFIT = $2.8 Million

APPENDIX

Appendix A.1

IT Process-Effectiveness Scenarios

SCENARIO	RATIONALE
Automation of Defect Management Processes Improves Application Quality	Automating the defect-management process improves knowledge and decision-making around application quality and release readiness, resulting in higher-quality applications.
Automation of Test Management Processes Improves Application Quality	Automating the test management processes (e.g., plan, document, stage, execute tests; analyze results) results in improved testing effectiveness, resulting in higher-quality applications.
Performance Optimization (During Application Delivery Stage) ==> Reduce Capital Expenses	Proactively improving the performance of applications during testing and performance optimization stage (prior to application release to production) reduces the requirement to add infrastructure capacity.
Performance Optimization (During Application Management Stage) ==> Reduce Capital Expenses	Optimizing performance and capacity of an application in production may result in ability to remove excess infrastructure capacity from the system.
Centralized / Remote Performance Testing Effect on Travel Expenses	Centralized performance testing reduces travel time and expense by allowing testers to initiate and monitor tests remotely.
Centralized Performance Testing Economies of Scale	Centralized performance testing maximizes value of investment in licenses and hardware infrastructure, resulting in significant cost savings if remote groups were to do load testing on their own.
Centralized Test Management Economies of Scale	Centralized test management maximizes value of investment in licenses and hardware infrastructure, resulting in significant cost savings over a project-by-project approach.
Automation of Functional Testing Effect on Testing Team Costs	Automation of functional testing allows fewer testers to achieve greater results, resulting in lower testing resource costs.
Automation of Functional Testing Effect on Testing Team Productivity	Automation of functional testing processes improves overall time to execute tests and complete testing cycles, resulting in improved productivity of the testing team, and faster completion of testing process, leading to faster "time to release." The testing team can complete more test cycles in the same timeframe as a manual approach–at lower cost.
Automation of Test Management Planning and Execution Processes Improves IT Productivity	Automating the test management processes reduces the time it takes to plan, document, stage, and execute tests.
Automation of Test Management Analysis and Reporting Processes Improves IT Productivity	Automating the test management processes reduces the time it takes to analyze (and report on) results of executed tests and test cycles, resulting in improved management productivity and faster "time to release."
Automation of Defect-Management Collaboration Processes Improves IT Productivity	Automating the defect management processes reduces the time it takes to compile, document, and communicate defect information with others, resulting in improved employee productivity.
Automation of Defect-Management Analysis and Reporting Processes Improves IT Productivity	Automating the defect management processes reduces the time it takes to assess (and report on) application quality and release readiness, resulting in improved management productivity and faster "time to release."
Effect of Poor Quality on Developer Productivity	When IT developers are troubleshooting and fixing defects or performance problems of production applications, this negatively impacts their productivity and takes away from their ability to develop new solutions. Conversely, quality applications lead to improved developer productivity and faster "time to release."
Effect of Poor Quality on Production Support and Help Desk Costs	When defects or performance problems are found in production applications, it increases the demand for production and help desk support; resulting in increased costs or reduced effectiveness (e.g., time to resolution).
Poor Responsiveness to Production Problems ==> Lost IT Productivity	Inability to respond and repair application production problems quickly negatively affects IT productivity.

Appendix A.2

Business Process-Effectiveness Scenarios

SCENARIO	RATIONALE
Time-to-Market Effect on Revenue	IT delivery of a business application more quickly results in earlier business achievement of value from that business application.
Application Downtime ==> Lost Employee Productivity	Application downtime reduces productivity of employees who use business applications to execute important business processes.
Defective Automated Business Processes ==> Lost Employee Productivity	Broken business processes lead to lost productivity.
Slow Application Response ==> Lost Employee Productivity	Slow application response time reduces productivity of employees who use business applications to execute important business processes.
Application Downtime ==> Lost Revenue	Application downtime reduces availability of customer-facing sales employees, resulting in lost revenue.
Defective Automated Business Processes ==> Lost Revenue	Failed transactions due to application defects on sales applications decreases sales productivity and leads to lost revenue.
Defective Automated Back Office Business Processes ==> Lost Revenue	Failed business processes on back-office applications results in failed transactions (e.g., supply chain, order fulfillment) and lost revenue.
Defective Automated Customer Facing Business Processes ==> Lost Revenue	Failed business processes due to application defects on sales-facing applications results in fewer transactions per employee and lost revenue.
Slow Employee-Facing Sales Application Response ==> Fewer Transactions and Lost Revenue	Slow application response times reduce availability of customer-facing sales employees who use business applications to execute important sales processes. This causes fewer transactions per employee and increased abandonment rates, resulting in lost revenue.
Slow Application Response ==> Customer Abandonment and Lost Revenue	Slow application response time on customer-facing applications increases customer abandonment and lost revenue.
Poor Infrastructure Performance ==> Lost Employee Productivity	Poor performance of infrastructure components adversely affects business process performance and reduces the productivity of LOB staff that relies on these processes to do their jobs. Conversely, effective infrastructure empowers staff to execute more business transactions with the same number of human resources or to process the same workload with fewer resources.
Poor Responsiveness to Production Customer Facing Application Problems ==> Lost Revenue	Inability to respond to and repair application production problems quickly negatively affects LOB employee productivity and may lead to lost revenue.

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