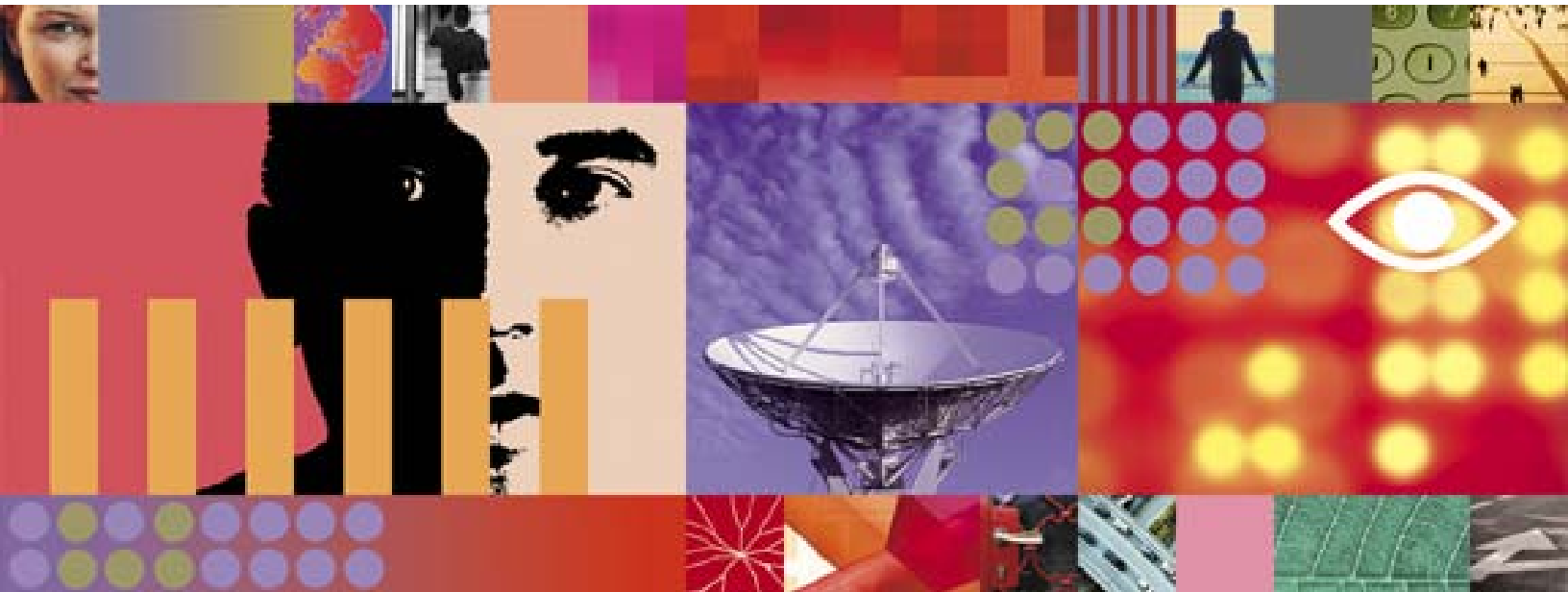




**Tivoli** software



## Tivoli ROI Analyst Methodology

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## Overview - Tivoli ROI Analyst

The primary objective of the Tivoli ROI Analyst tool is to enable Tivoli sales professionals, consultants and channel partners to articulate the economic value of our Tivoli solutions. With our focus on making the case for business impact management; Alinean has developed the Tivoli ROI Analyst tool to align specifically to Tivoli's unique business value. The Tivoli ROI Analyst tool can be used with CIOs and IT executives to make the financial business case for all of Tivoli's solutions, both as individual products and as complete portfolio of products. With most projects requiring higher levels of authority to gain approval, most all projects now require a financial business case. By automating the generation of complete ROI business cases, the ROI Analyst helps to reduce sales cycles, increase sales effectiveness and improve competitive advantage.

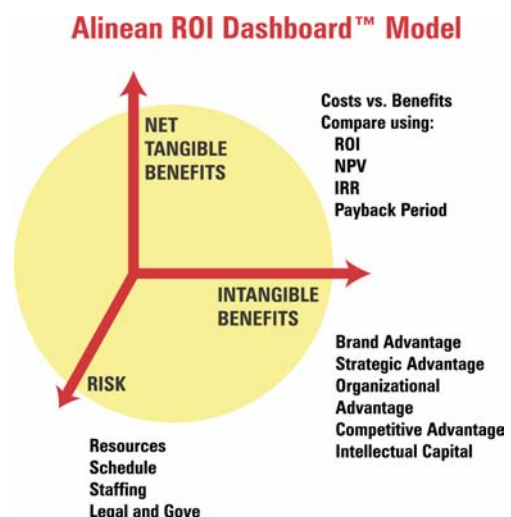
It is important to understand evolving priorities and objectives for CIO's as they transform their organizations to better serve their customers. The following chart indicates that four out the five top priorities for CIO's are focused on demonstrating and measuring IT's contribution to the overall economic value of the company. This typically means shareholder value. No longer can IT be considered simple overhead cost. Its value contribution must now be demonstrated in the context of sustainable economic value to the shareholders.

Ranking		Priority Objectives
1	<input checked="" type="checkbox"/>	Strategizing for IT/business linkage
2	<input checked="" type="checkbox"/>	Providing leadership and guidance for the board/executive
3	<input checked="" type="checkbox"/>	Demonstrating business value of IS
4		Developing the IS senior management team
5	<input checked="" type="checkbox"/>	Reducing total IT costs

Related to IT Investment Strategies  
 SOURCE: GartnerEXP, March 2002

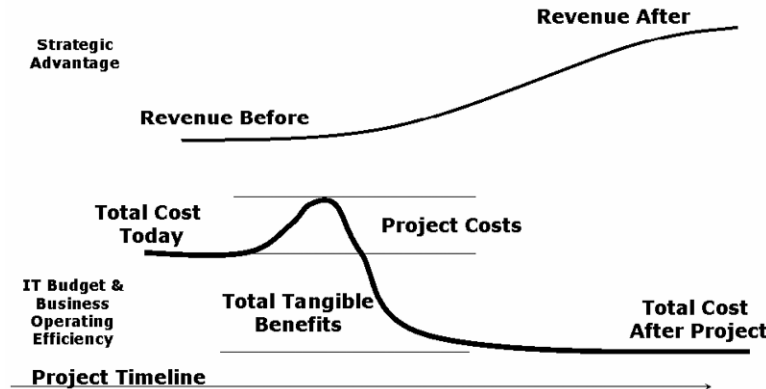
## The Alinean ROI Dashboard™ Model and Methodology

The Alinean ROI model and methodology is used to help focus on the fundamental areas where true value can be realized. The ROI Dashboard includes traditional ROI analysis, measuring and comparing the costs and benefits of a proposed solution, but includes additional measures to help resolve some of the common issues of applying ROI analysis to IT solutions. The Alinean ROI Dashboard combines the quantifiable financial costs and benefits (net tangible benefits analysis), with intangible benefits (strategic value) and project risk analysis.



## Net Tangible Benefits

The tangible benefits of a solution are derived by taking into consideration the total cost of the Tivoli project implementation, against possible savings to calculate the quantifiable financial benefits of the solution. To calculate the costs and benefits, the proposed solution is compared against the customer's current environment - the company proceeding with current practices, technology, growth, and strategy. Applying the Tivoli solution to the Customer's current environment determines incremental value of the solution.



In the Net Tangible Benefits analysis, the costs and benefits are quantified as follows:

### Costs

The costs portion of the tangible benefits equation measures all of the up-front, and on-going one-time costs for implementing the project. These include:

- ▶ **Capital Expenses** - the investment in systems, software, networks, peripherals, supplies and equipment to deploy and maintain the Tivoli project.
- ▶ **Implementation Labor** - the staff and contract labor to research, purchase, plan, test and deploy the proposed solution.
- ▶ **On-going Management and Support** - the staff and contract labor to manage and support the solution after it is deployed.
- ▶ **Operations and Contracts** - the recurring fees, professional services, leases, facilities and power costs, and the on-going maintenance and support contracts.

Tivoli Operations costs are taken into consideration in order to fully account for the internal resources necessary to manager and administer the Tivoli environment. This will allow us to properly reflect the ongoing investment in the solution.

### Benefits

The benefits portion of the tangible benefits is typically grouped into four categories:

- ▶ **Labor Savings** - the savings resulting from staff re-alignment or mitigation.
- ▶ **Capital Expense Reductions** - the savings in expenses such as facilities, capital equipment, and additional software associated with the planned project.
- ▶ **Productivity Benefits** - the gains in user productivity from implementing a solution, including reductions in system downtime or efficiency gains in performing specific user tasks. Productivity benefits can be calculated using average burdened salaries, or by using revenue per employee increases or loss avoidance. Often, productivity benefits are discounted, to account for the fact that not all of the productivity gains will yield a gain in productive work time

- ▶ **Business Benefit** - the gains in profit resulting from revenue gains such as those from increased sales, higher availability of critical business systems, and customer retention and conversion.

The measure of the tangible benefits ultimately pits the project's costs against the total benefits, culminating in the derivation of four key financial measures of project viability:

- ▶ **ROI** - the ratio of the net gain from a proposed project, divided by its total costs
- ▶ **NPV** - a measure of the net benefit of a project, in today's dollar terms.
- ▶ **IRR** - the discount rate necessary to drive the NPV to zero; in more practical terms, the value another investment would need to generate in order to be equivalent to the cash flows of the investment being considered.
- ▶ **Payback Period (Breakeven)** - time frame it takes for the project to yield a positive cumulative cash flow

### Intangible Benefits

Identifying a project quantifiable value is one element of value. Another important consideration is the strategic value a project can bring to the organization. Typically referred to as “soft dollar” savings, intangible benefits are difficult to discreetly identify with a measurable metric. Therefore, intangible benefits represent benefits that are difficult, or impossible, to accurately predict and measure in financial terms. Often, however, these intangible benefits can be quantified into Key Performance Indicators such as % market share, or industry ranking. Some intangible benefits that are considered when evaluating and measuring the performance of a project include:

- ▶ **Brand Advantage** - reinforcing, advancing or changing a company's brand.
- ▶ **Strategic Advantage** - enabling the strategic objectives of the organization.
- ▶ **Competitive Advantage** - releasing solutions faster, developing solutions less expensively, better addressing customer needs, meeting changing market demand, scaling easily and more cost effectively, and gaining market share
- ▶ **Intellectual Capital** - enables organizations to institutionalize intellectual capital and incorporate this knowledge in technology.
- ▶ **Organizational Advantage** - enabling an organization effectively align resources and leverage best practices.

### Risk

Risk is a predicted issue that may affect a project, and affect the project's implementation or ongoing costs, or hurt the achievement of the expected tangible and intangible gains. Risk can be measured based on the probability of occurrence, and the likely impact on the costs and benefits, in some instances discounting the value of the project significantly. Project risks can be viewed as critical success factors, those issues which must be mitigated in order to achieve planned success.

The risk measurement may include items such as:

- ▶ **Labor Resources** - the risk that required resources may not be available, not have the proper skill set or training, or rely on a small group of experts that cannot be retained easily
- ▶ **User Acceptance** - users may not accept the solution and rebel, or more likely, they will not adopt all or some of the key features, which reduces the benefits substantially.  
Compatibility - the solution may not be compatible with current or future operating systems, platforms or other applications.
- ▶ **Vendor** - the vendor may not be able to deliver the solution in the promised time frame or to the required specifications. The vendor may be a start-up, or not financially sound, so

they may not be around in several years to support the solution and deliver required updates and upgrades.

- ▶ **Management Commitment and Funding** - the senior management and the stakeholders may not be fully committed to the project with management support, and especially funding.
- ▶ **Market or Strategic** - the market may shift, competitors may change their strategy, or the company may change strategic direction, changing the project requirements, or changing the business benefits equation.  
Schedule - the project requirements may drive a schedule that is unrealistic. The overruns in schedule may cause cost overruns, delays to benefits, and impacts to other dependent projects.
- ▶ **Legal and Governance** - there may be legal and governance risks and exposures in the project, such as not being able to implement the project in time to meet legal regulations, or a failure that may risk legal exposure. The project or issues with the project may also affect compliance with governance issues such as financial reporting requirements.
- ▶ **Organization** - there may be risks to the organization as a whole, such as a risk involving employee morale or organizational dynamics should issues occur.
- ▶ **Dependencies** - there may be risks that can affect a family of dependent projects, such as delays, resources or budgets

The ROI Dashboard model has been applied to the ROI Analyst for Tivoli business impact management. This application of the model to the business case for Tivoli is described in the following section.

## The Base Case

The Tivoli ROI Analyst can be first used to help quantify the company's current cost of ownership, business operating efficiency and strategic performance. This consultative assessment will help the company quantify their current IT operations and clearly understand their operating and business issues. This current cost of ownership, the base case, represents the opportunity for the Tivoli solution.

The quantification of the base case is performed using industry defaults initially, to allow for a quick assessment. With research on the company actual financials, the defaults are replaced with actual data to complete the current state assessment. The analysis includes costs for today, and costs over the next three years, assuming that the company does not implement any additional or competitive management tools or other best practices. This current financial state is called the base case.

## Tangible Benefits

To analyze the business case for Tivoli, the Tivoli solution is applied against the base case and a simulation is run, quantifying the costs to purchase and implement the Tivoli solution and the benefits in reducing IT costs, eliminating risks and helping to create strategic advantages. These tangible benefits, those which can be quantified into absolute monetary terms, include the ability to re-allocate IT resources to more strategic tasks, reducing the need to hire additional staff to meet growth demands, improved service levels, increased availability and increased business capability/scalability.

For each of the business impact management solution sets (pillars), the following tangible benefits are quantified:

### Performance and Availability

- ▶ **IT Operations Staff Savings** - the reduction in workload for current IT staff managing business system performance and availability, and the ability to scale more effectively

- ▶ **Service Level Penalty Avoidance** - the elimination of service level penalties levied by the business units for failure to meet contracted service level agreements (optional)
- ▶ **Informal Support Savings** - the elimination of issues proactively and the increase in support efficiency and effectiveness, which can lead to a reduction in peer support expenses (users supporting each other in lieu of formal support calls)
- ▶ **Increased Availability** - reduced unplanned downtime for business systems, applications and infrastructure components
- ▶ **Web Effectiveness** - the ability to monitor details of Web servers and optimize transaction performance and marketing effectiveness

### Configuration and Operations

- ▶ **IT Operations Staff Savings** - the reduction in workload for current IT staff managing IT configuration and operations tasks, and the ability for the staff to scale more effectively
- ▶ **Informal Support Savings** - the elimination of issues proactively and the increase in support efficiency and effectiveness, which can lead to a reduction in peer support expenses (users supporting each other in lieu of formal support calls)
- ▶ **Increased Availability** - reduced unplanned downtime for business systems, applications and infrastructure components

### Security Management

- ▶ **Security Management Labor Savings** - the reduction in workload for current IT staff managing IT and business systems security tasks, and the ability for the staff to scale more effectively
- ▶ **Application Security Development Savings** - - the reduction in application security development tasks through the use of security components
- ▶ **Password Reset Savings** - the ability to save service desk staff and lost user productivity (using revenue per employee) by automating password resets
- ▶ **User Access Savings** - the ability to reduce unproductive time wasted waiting for new user access, or user access changes
- ▶ **Security Risk Avoidance** - the elimination of common security risks and the reduction of impact on the business and lost productivity.
- ▶ **Application Security Time to Market Benefits** - the acceleration of application time to market by reducing security application development time

### Storage Management

- ▶ **Storage Management Labor Savings** - the reduction in workload for current IT staff managing IT and business systems security tasks, and the ability for the staff to scale more effectively
- ▶ **Storage Purchase Avoidance** - the reduction in the need for on-line storage through the automatic and intelligent management of data sets to near-line and off-line storage resources
- ▶ **Tape System Purchase Avoidance** - the reduction in the need for tape system and media through more efficient management of backup data sets and compression technology
- ▶ **Network Bandwidth Investment Avoidance** - the elimination of backup window issues, leading to a reduction or elimination of planned network bandwidth improvements to support backup window requirements
- ▶ **Restore Time Benefits** - a reduction in lost business and productivity through faster data restores

- ▶ **Backup Coverage Risk Avoidance** - an increase in backup coverage resulting in reduced risk of data loss

### Core Solution

- ▶ **Integration Savings** - the potential savings on internal IT development in integrating point solutions
- ▶ **Residual Value (Options)** - the value remaining in the investment in Tivoli business impact management beyond the three year period. The investment in Tivoli can provide the company with options in three years that it would not have from a point solution, such as adding additional management tools to the platform, mining the data warehouse and other benefits.
- ▶ **Support Contract Savings** - the potential impact of eliminating or reducing support contract fees such as better tracking of assets, or reduction in pay per support calls through the ability to proactively prevent issues or resolve with internal resources. Often, support contracts are long term commitments that cannot be impacted to generate savings.

### Implementation Cost

The Tivoli solution cost is quantified to capture the full cost of implementing and managing the solution over the three year analysis period. This includes modeling the needed software, maintenance agreements, hardware, professional services, implementation labor, on-going management and training. The costs are derived by developing a price proposal for the client, and estimating implementation labor. The Implementation Cost includes the following:

- ▶ **Software Licensing** - the licensing fee paid to license Tivoli software
- ▶ **Maintenance Agreement** - software updates and technical support
- ▶ **Additional Hardware and Software Systems** - any additional hardware and software needed to implement or support the Tivoli solution, such as dedicated servers or databases
- ▶ **Training** - technical training for Tivoli management staff
- ▶ **Professional Services** - IBM Global Services and/or strategic partner consultants helping with the planning, setup, installation and management of the Tivoli solution
- ▶ **Implementation Labor** - the time spent by internal staff in planning, setup customizing, integrating and installing the Tivoli solution
- ▶ **On-going Management Labor** - the staff time managing and supporting the Tivoli solution

### ROI Analysis

The Tivoli implementation costs are compared against the tangible benefits to derive several key financial measures, calculating the net tangible (quantifiable) benefits, including:

#### ROI

ROI is the ratio of the net gain from a proposed project, divided by its total costs. In a formula, this can be represented as:  $ROI = \text{cumulative net benefit} / \text{total costs}$ . When calculated, ROI is represented as a percentage demonstrating the value of the investment and so in formula's ROI% will represent this value. As an example of how the ROI formula can be used to evaluate a solution, if a project has an ROI of 200%, the total net benefits derived from the project are double those of the expected total costs to implement the project. This means that every one dollar invested in the project returns a net benefit of \$2 in return, plus the original dollar invested. As such, the ROI calculation represents the relative value of the project's cumulative net benefits over the analysis period, divided by the project's cumulative costs, expressed as a percentage. Of importance to note, the ROI calculation does not use net present value terms in its calculations.

## NPV Savings

Net Present Value is the sum that results when the discounted value of the expected costs of an investment are deducted from the discounted value of the expected returns. The Net Present Value (NPV) benefit is a calculation that measures the net benefit of a project, in today's dollar terms. The NPV savings calculation consists of two financial concepts, these are:

- 1) The "net" part of the NPV savings calculation is the difference between all of the costs and all of the benefits (savings and other gains);
- 2) The present value portion of the NPV calculation takes into account the time value of money, to adjust the expenditures and returns as they occur over time so that they can be evaluated equally.

The NPV calculation evaluates a set of costs and benefits over time in order to account for the time value of money. The cash flows are the amounts and times of the various costs and investments, and these are brought into a common term, today's dollars, so that the net benefit can be evaluated. NPV calculation uses the formula:

$$NPV = \text{Initial expense} + \text{discounted Cash Flow (Expected Benefits - Expected Costs) for Year 1} + \dots + \text{discounted Cash Flow (Expected Benefits - Expected Costs) for Year N.}$$

Projects with low initial costs and greater initial savings yield higher NPV savings calculations. The NPV Savings is one of the most popular and accurate methods used to assess IT project viability, using discounted cash flow to accurately quantify the net benefits from a project. Rather than the ROI percentage, a ratio of net benefits to the costs, the NPV savings uses discounted cash flow to quantify in today's dollar terms the projected net gain from the project in net dollar terms.

## Internal Rate of Return

Want to know what a similar investment would need to earn in order to compare with the returns on this project? Internal rate of return (IRR) calculates the interest rate received for an investment consisting of costs and income that occur over the analysis period. By analyzing the costs, and when they occur, compared to the benefits over time, the IRR calculation estimates the return from the project as an interest rate calculation. When comparing project returns it is important to consider that although a project's return may be higher, that there are other factors to consider such as investment required and risk. If a low risk, low investment project returns 100% IRR, but a higher risk, high investment project returns 200% IRR, the lower risk, investment, return project indeed may be a more sound investment.

IRR is the DISCOUNT RATE which makes the NET PRESENT VALUE of a project equal to zero. The NPV formula is defined as: *IRR= rate of return at which NPV is equal to 0*

The IRR calculation is used to derive the value of  $r$ , whereby given a series of net benefits ( $I$ ), the equation yields zero as the NPV. The calculation is performed iteratively, where a computer program guesses at the value of  $r$ , and then continuously refines itself, until the equation yields a result at or near zero.

In practical terms, the IRR calculation examines the positive and negative cash flows from a proposed project, and generates an interest rate. This rate represents the value another investment would need to generate in order to be equivalent to the cash flows of the investment being considered. For example used in the NPV savings calculations, a series of net cash flows is defined as:

The IRR calculation is a valuable calculation in that it generates a projected return that can be directly compared to the company's hurdle rate. The hurdle rate is typically the risk adjusted return a project needs to generate in order to be considered. Risk adjusted returns need to be substantially higher than those generated by safe investments in order to be considered equivalent.

## Payback Period

Payback period is the time period from the start of the project until the cumulative cash flow turns positive. Perhaps the easiest calculation to understand in traditional ROI analysis is the payback period. The payback period is the time frame it takes for the project to yield a positive cumulative cash flow, typically specified in months. The payback period is measured from the start of the project, until the occurrence when the cumulative benefits, exceed the cumulative costs. Payback period is important because it measures how long it takes for the investment to begin generating a positive cash flow. A longer payback period generates risk, especially if the project time line is delayed or benefits occur later than expected. A shorter payback period does not assure substantial returns for the investment, but assures that there will be positive returns and that the benefits occur early in the cycle and quickly offset the initial investment costs.

## Intangible Benefits

To many organizations, the intangible benefits, those which drive improvements but cannot be easily quantified financially, are equally or more important than the tangible benefits. The Intangible Benefits represent important benefits that can be derived from the Tivoli solutions, but which cannot be quantified into absolute monetary terms. The Intangible Benefits include:

- ▶ Stability
- ▶ Time to Value
- ▶ Competitive Differentiation
- ▶ Customer Experience
- ▶ Integration
- ▶ Scalability and Flexibility
- ▶ Global Reach
- ▶ Single Point of Accountability
- ▶ Technology Innovation
- ▶ Strategic Partnership
- ▶ Proven Best Practices
- ▶ Strategic Alignment
- ▶ Strategic Redeployment of Resources
- ▶ IT Staff Attrition Avoidance

Definitions for each of these intangible benefits can be found in the Tivoli ROI Analyst software.

## Critical Success Factors (Project Risk)

Critical Success Factors outline the potential project risks from implementing any business impact management solution, and discusses how Tivoli's solution, best practices and professional services experience can help mitigate these risks and drive project success. These Critical Success Factors include:

- ▶ Schedule
- ▶ Organizational Alignment
- ▶ Labor Resources
- ▶ User Acceptance / Adoption
- ▶ Compatibility and Integration
- ▶ Vendor

Definitions for each of these critical success factors can be found in the Tivoli ROI Analyst software.

## **Tivoli Tangible Benefit Details**

The Tivoli Tangible Benefits are the IT Operational Savings and Strategic Business Impacts which are derived from the solutions, and modeled within the Tivoli ROI Analyst toolset. The ROI Analyst calculates the company's current total cost of ownership for managing the various business solutions, and then simulates the application of the Tivoli solution, deriving IT savings, loss avoidance and strategic advantages derived over the three year analysis period.

For each of the solution sets, savings have been researched and estimated. A savings table was constructed to represent the impact that the solution has on the company's current cost of ownership and business, and to reflect the magnitude of possible savings for each cost or business category. These savings are set by default for a company with little to no best IT management practices, and with high complexity and high dependence on IT for core business functions. Based on the company's technology and management practices, the savings are typically reduced (see section on Technology and Management Practices for additional information).

A large proportion of the savings will be realized by operational task savings. In order to provide some level of commonality for operations definitions across different company and industry segments, we leveraged certain definition established by Global standards groups such as ITIL. The following section details these definitions. Categories are defined as broad operational areas where customer typically aligns staffing. Within these category areas we have task level operations that are performed. Tivoli's value impact for quantifiable savings will be derived primarily by how we impact these operational tasks within the categories.

### **Business / Systems Management BIM Layer**

#### **Business system management**

Task Operations:

- ▶ Business continuance planning
- ▶ Managing configuration
- ▶ Managing access
- ▶ Monitoring performance and throughput
- ▶ Assessing downtime impact on operations (Business Impact Reporting)
- ▶ Transaction response monitoring

#### **Service Level Management**

Task Operations:

- ▶ Establish a standard Service Delivery plan
- ▶ Coordinate Service Plans with LOB's
- ▶ Create Service Delivery Reporting
- ▶ Monitor performance trending
- ▶ Reporting on Service Delivery achievement
- ▶ Predictive modeling

### **Site analytics**

Task Operations:

- ▶ Analyze web site activity
- ▶ report on web site navigation and utilization
- ▶ Monitor performance and response time
- ▶ Campaign impact performance

### **Database Management**

Task Operations:

- ▶ User access administration
- ▶ Security management and access control
- ▶ Batch Operations
- ▶ Capacity Planning
- ▶ Table configuration
- ▶ Failover administration

### **Application/Middleware Management**

Task Operations:

- ▶ Availability monitoring and measurement
- ▶ Software distribution and change control
- ▶ Transaction performance monitoring
- ▶ Application state monitoring
- ▶ Exception analysis
- ▶ Resource performance monitoring
- ▶ Disaster recovery and contingency planning
- ▶ Change management

### **Job Scheduling**

Task Operations:

- ▶ Batch scheduling
- ▶ Batch operation monitoring
- ▶ Workload distribution
- ▶ Batch operation scheduling
- ▶ Batch operation exception handling
- ▶ Contingency planning
- ▶ Batch operation reporting

### **Web Management**

Task Operations:

- ▶ Web server availability monitoring
- ▶ Site transaction analytics
- ▶ Intrusion detection
- ▶ Firewall management and Administration
- ▶ Application response time
- ▶ Server resource monitoring
- ▶ Disaster recovery
- ▶ Capacity planning

## **Messaging Management**

Task Operations:

- ▶ Middleware monitoring
- ▶ Capacity planning
- ▶ Disaster recovery
- ▶ Server resource monitoring
- ▶ Configuration management
- ▶ Policy management

## **Storage Administration**

Task Operations:

- ▶ Data archiving - online & nearline
- ▶ Fault tolerance
- ▶ Disaster recovery
- ▶ Configuration management
- ▶ Backup server monitoring
- ▶ Disk Capacity/Utilization
- ▶ Media management

## **Systems Management**

Task Operations:

- ▶ Server resource monitoring
- ▶ Exception handling
- ▶ Configuration administration
- ▶ Security management
- ▶ Capacity planning

## **Network Management**

Task Operations:

- ▶ Configuration management
- ▶ Monitoring Network management components
- ▶ Security management
- ▶ Topology management
- ▶ Capacity planning

## **Software Distribution & Control**

Task Operations:

- ▶ Software distribution Packaging
- ▶ Prerequisite testing of desktop environment
- ▶ Distribution/control
- ▶ License Management

## **Configuration (Asset) Management**

Task Operations:

- ▶ Inventory control and recording
- ▶ Configuration validation and Audit
- ▶ Maintain Access control lists

## **Change Management**

### Task Operations:

- ▶ Change planning
- ▶ Change validation
- ▶ Change implementation
- ▶ Change exception handling (incident association)
- ▶ Platform validation (Environment testing)

## **Incident and Problem Management**

### Task Operations:

- ▶ Service desk operations
- ▶ Incident management and routing
- ▶ Incident consolidation

## **Service Level Management**

### Task Operations:

- ▶ Establishing service level agreements
- ▶ Monitoring service level compliance
- ▶ Predictive analysis
- ▶ Trend analysis
- ▶ Compliance reporting

## **Security Management**

### Task Operations:

- ▶ Risk assessment
- ▶ Risk management
- ▶ Security policy administration
- ▶ Access control monitoring
- ▶ Security Audit

## **Contingency Planning**

### Task Operations:

- ▶ Disaster risk assessment
- ▶ Contingency planning
- ▶ Data archiving policies
- ▶ Archiving resource monitoring
- ▶ Archive catalog administration
- ▶ Off-site storage
- ▶ Redundant site synchronization and administration

Based on the operational task defined above, we've assessed the overall impact to operational task efficiencies by each of our product offerings. The result of this analysis is a value matrix detailing the "time in task" savings that can be achieved with Tivoli's solutions. The following analysis will identify a Tivoli product and assess its impact against the Operational tasks defined above. When a percentage is indicated it merely implies there is a "time in task" saving associated with the task. This will primarily impact full time equivalence (FTE) factors.

**Performance and Availability**

→ **Tivoli Business Systems Manager:**

Manages groups of related applications that enable critical business functions, such as ERP, CRM or e-business environments

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Business Systems Management.....	6%
• Database Management .....	2%
• Application Administration.....	7%
• Web Management.....	5%
• Messaging Management .....	2%
• Systems Management .....	5%
• Network Management .....	5%
• Incident and Problem Management.....	2%
• Service Level Management .....	2%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	5%
---	----

→ **Tivoli Service Level Advisor:**

Simplifies and automates the process of managing service level agreements, enabling IT organizations to proactively manage and report on service levels

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Business Systems Management.....	15%
• Service Level Management .....	20%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	6%
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■ <b>Service Level Penalty Avoidance.....</b>	<b>75%</b>
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→ **Tivoli Web Site Analyzer:**

Captures, analyzes, stores and reports on Web site usage, health, integrity and site content

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Business Systems Management.....	7%
• Web Management .....	10%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	3%
---	----

➔ **Tivoli Enterprise Console:**

Correlates e-business, system and network data, to quickly identify the root cause of business performance issues

■ **IT Operation Savings / Performance and Availability Staff Savings**

- |   |    |
|---|----|
| • Incident and Problem Management ..... | 7% |
|---|----|

■ **Strategic Business Impact**

- |  |    |
|--|----|
| • End User Operation Savings .....                   | 1% |
| • Increased Application / Systems Availability ..... | 7% |

➔ **IBM Tivoli Monitoring**

Automates monitoring of essential system resources, to detect bottlenecks and potential problems, and to automatically recover from critical situations

■ **IT Operation Savings / Performance and Availability Staff Savings**

- |  |    |
|--|----|
| • Business Systems Management.....     | 7% |
| • Application Administration.....      | 4% |
| • Incident and Problem Management..... | 9% |
| • Service Level Management.....        | 5% |

■ **Strategic Business Impact**

- |   |    |
|---|----|
| • End User Operation Savings .....                  | 2% |
| • Increased Application / Systems Availability..... | 4% |

➔ **Tivoli Monitoring for Applications:**

Delivers higher availability and optimized performance of their mySAP.com and Siebel e-business applications

■ **IT Operation Savings / Performance and Availability Staff Savings**

- |  |     |
|--|-----|
| • Application Administration.....      | 18% |
| • Incident and Problem Management..... | 2%  |
| • Service Level Management.....        | 5%  |

■ **Strategic Business Impact**

- |   |    |
|---|----|
| • End User Operation Savings .....                  | 1% |
| • Increased Application / Systems Availability..... | 4% |

➔ **Tivoli Monitoring Active Directory Option:**

Delivers higher availability and management for Active Directory solutions

■ **IT Operation Savings / Performance and Availability Staff Savings**

- |  |    |
|--|----|
| • Systems Management .....             | 9% |
| • Incident and Problem Management..... | 2% |

■ **Strategic Business Impact**

- |   |    |
|---|----|
| • Increased Application / Systems Availability..... | 2% |
|---|----|

→ **Tivoli Monitoring for Databases:**

Ensures the availability and optimal performance of DB2, Oracle, and Informix servers

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Database Management .....	16%
• Incident and Problem Management .....	4%

→ **Tivoli Monitoring for Messaging and Collaboration:**

Deploys best practices resource models to monitor and cure problems that arise in a messaging and collaboration environment

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Messaging Management .....	10%
• Network Management .....	7%
• Incident and Problem Management .....	4%

■ **Strategic Business Impact**

• Informal Support Savings .....	1%
• Increased Application / Systems Availability .....	4%

→ **Tivoli Monitoring for Business Integration:**

Manages IBM's WebSphere MQ and WebSphere MQ Integrator from one central console

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Systems Management .....	8%
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■ **Strategic Business Impact**

• Increased Application / Systems Availability .....	4%
--	----

→ **Tivoli Monitoring for Web Infrastructure:**

Ensures the optimal performance and availability of both application servers and the associated Web servers that feed them

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Web Management .....	10%
• Systems Management .....	5%
• Network Management .....	5%
• Incident and Problem Management .....	2%
• Service Level Management .....	4%

■ **Strategic Business Impact**

• Informal Support Savings .....	1%
• Increased Application / Systems Availability .....	4%

→ **Tivoli Monitoring for Transaction Performance:**

Monitors the performance and availability of e-business and enterprise transactions to ensure a positive customer

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Business Systems Management.....	4%
• Application Administration.....	7%
• Web Management.....	5%
• Messaging Management.....	7%
• Systems Management.....	2%
• Network Management.....	5%
• Incident and Problem Management.....	4%
• Service Level Management.....	4%

■ **Strategic Business Impact**

• End User Operation Savings.....	1%
• Increased Application / Systems Availability.....	7%

→ **Tivoli Manager for Sybase:**

IBM Tivoli Manager for Sybase is a Tivoli-based applications management product uniquely suited for managing and controlling large numbers of distributed, heterogeneous Sybase database environments

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Database Management.....	7%
• Incident and Problem Management.....	1%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	1%
---	----

→ **Tivoli Manager for MS SQL:**

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Database Management.....	7%
• Incident and Problem Management.....	1%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	1%
---	----

→ **Tivoli Management Solution for MS SQL:**

IBM Tivoli Manager for Microsoft SQL allows a DBA to centrally and conveniently control hundreds of Microsoft SQL servers alone or in a heterogeneous environment from the Tivoli desktop.

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Database Management.....	3%
• Incident and Problem Management.....	1%

- Strategic Business Impact

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Increased Application / Systems Availability ..... 1%</li> </ul> |
|---|

➔ Tivoli Business Manager for Exchange:

IBM Tivoli Manager for Exchange is a responsive, centralized system management solution for managing Microsoft® Exchange servers deployed throughout the enterprise. Together with the Tivoli Management Framework, IBM Tivoli Monitoring, and the optional products--IBM Tivoli Enterprise Console®, IBM Tivoli Configuration Manager, and Tivoli Decision Support--the IBM Tivoli Manager for Exchange provides comprehensive management of Exchange 5.5 servers, by monitoring resources, managing events, and automating routine tasks.

- IT Operation Savings / Performance and Availability Staff Savings

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Messaging Management ..... 10%</li> <li>• Network Management ..... 6%</li> <li>• Incident and Problem Management ..... 4%</li> </ul> |
|---|

- Strategic Business Impact

- |  |
|--|
| <ul style="list-style-type: none"> <li>• End User Operation Savings ..... 1%</li> <li>• Increased Application / Systems Availability ..... 4%</li> </ul> |
|--|

➔ Tivoli Management Solution for Exchange:

IBM Tivoli Manager for Exchange is a responsive, centralized system management solution for managing Microsoft® Exchange servers deployed throughout the enterprise.

- IT Operation Savings / Performance and Availability Staff Savings

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Messaging Management ..... 10%</li> <li>• Network Management ..... 6%</li> <li>• Incident and Problem Management ..... 4%</li> </ul> |
|---|

- Strategic Business Impact

- |  |
|--|
| <ul style="list-style-type: none"> <li>• Informal Support Savings ..... 1%</li> <li>• Increased Application / Systems Availability ..... 4%</li> </ul> |
|--|

➔ Tivoli Netview (Distributed Environment):

What is IBM Tivoli NetView? IBM Tivoli NetView discovers TCP/IP networks, displays network topologies, correlates and manages events and SNMP traps, monitors network health, and gathers performance data.

- IT Operation Savings / Performance and Availability Staff Savings

- |  |
|--|
| <ul style="list-style-type: none"> <li>• Network Management ..... 10%</li> <li>• Incident and Problem Management ..... 2%</li> </ul> |
|--|

- Strategic Business Impact

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Increased Application / Systems Availability ..... 4%</li> </ul> |
|---|

➔ **Tivoli Comprehensive Network Address Translator**

Tivoli® Comprehensive Network Address Translator Version 1.2.2 extends the reach of the Network Operations Center beyond traditional IP Domain boundaries. It does it by extending Network Address Translation (NAT) concepts into SNMP and ICMP messages, transparently mapping all IP Addresses into unique addresses for the tools responsible for network management.

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Network Management .....	8%
• Incident and Problem Management .....	2%
• Service Level Management .....	4%

■ **Strategic Business Impact**

• Increased Application / Systems Availability .....	3%
--	----

➔ **Tivoli LAN Switch Analyzer:**

IBM Tivoli® Switch Analyzer is a Layer-2 Switch Network Management root-cause component of a comprehensive Network Management Solution. Tivoli Switch Analyzer enables Network Administrators identify whether a network failure is the problem cause and allows network administrators to focus resources on resolving problems and not symptoms.

■ **IT Operation Savings / Performance and Availability Staff Savings**

• Network Management .....	5%
• Incident and Problem Management .....	1%

■ **Strategic Business Impact**

• Increased Application / Systems Availability .....	1%
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## Configuration and Operations Management

### → Tivoli Workload Scheduler:

IBM Tivoli Workload Scheduler automates, monitors, and controls the flow of work through your enterprise's entire IT infrastructure on both local and remote systems. From a single point of control, the suite analyzes the status of the production work and drives the processing of the workload according to installation business policies.

#### ■ IT Operation Savings

##### • Configuration and Operation Management Labor Savings

▪ Job Scheduling .....	20%
▪ Incident and Problem Management .....	5%

#### ■ Strategic Business Impact

• Increased Application / Systems Availability .....	8%
--	----

### → Tivoli Workload Scheduler for Applications:

IBM Tivoli Workload Scheduler automates, monitors, and controls the flow of work through your enterprise's entire IT infrastructure on both local and remote systems.

#### ■ IT Operation Savings

##### • Configuration and Operation Management Labor Savings

▪ Job Scheduling .....	5%
▪ Incident and Problem Management .....	5%

#### ■ Strategic Business Impact

• Increased Application / Systems Availability .....	4%
--	----

### → Tivoli Configuration Manager:

IBM Tivoli Configuration Manager 4.1 combines Tivoli Software Distribution 4.1 and Tivoli Inventory 4.0 into a single product offering. It delivers an integrated solution for deploying software and for tracking hardware and software configurations across an enterprise.

#### ■ IT Operation Savings

##### • Configuration and Operation Management Labor Savings

▪ Software Distribution and Control .....	20%
▪ Asset Management .....	25%
▪ Incident and Problem Management .....	5%

#### ■ Strategic Business Impact

• Increased Application / Systems Availability .....	2%
--	----

➔ **Tivoli Remote Control:**

IBM Tivoli Remote Control is the industry-leading enterprise-scale remote control solution. Scalable to enterprise desktops and server environments that number in the tens of thousands, Remote Control gives IT quick, secure and reliable control over the critical resources they manage.

- IT Operation Savings
  - Configuration and Operation Management Labor Savings
 

▪ Incident and Problem Management .....	15%
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- Strategic Business Impact
 

• Informal Support Savings .....	5%
• Increased Application / Systems Availability .....	5%

➔ **Tivoli Data Exchange:**

Tivoli® Data Exchange is a software solution that enables aggregation and distribution of business-critical information--of varied content--across all major computer platforms and network protocols.

- IT Operation Savings
  - Configuration and Operation Management Labor Savings
 

▪ Business Systems Management .....	5%
▪ Job Scheduling .....	3%
- Strategic Business Impact
 

• Increased Application / Systems Availability .....	1%
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➔ **Tivoli Point-of-Sale Manager:**

Tivoli® Point-of-Sale Manager V 2.0 enables retailers to maximize revenues and control costs by ensuring the availability of IBM 4690 Point-of-Sale terminals in their store environment.

- IT Operation Savings
  - Configuration and Operation Management Labor Savings
 

▪ Business Systems Management .....	5%
▪ Job Scheduling .....	3%
▪ Software Distribution and Control .....	10%
▪ Asset Management .....	3%
▪ Incident and Problem Management .....	2%
- Strategic Business Impact
 

• Increased Application / Systems Availability .....	2%
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➔ **Tivoli Self - Service Terminal Manager:**

Tivoli Self-Service Terminal Manager reduces the operational and maintenance costs of your ATM, self-service terminal (SST), and kiosk network. It automates deployment of new technologies, features, transactions, services, and technological capabilities that SSTs and ATMs offer.

■ **IT Operation Savings**

• **Configuration and Operation Management Labor Savings**

▪ Business Systems Management.....	5%
▪ Job Scheduling .....	3%
▪ Software Distribution and Control.....	7%
▪ Asset Management .....	3%
▪ Incident and Problem Management .....	2%

■ **Strategic Business Impact**

• Increased Application / Systems Availability.....	2%
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## Security Management

### → Tivoli Risk Manager:

IBM Tivoli Risk Manager simplifies and correlates the vast number of events and alerts generated by numerous security point products into a single console to help organizations determine the severity of attacks.

#### ■ IT Operation Savings

##### • Security Management Labor Savings

▪ Policy Management .....	10%
▪ Intrusion Management.....	35%
▪ Repair and Resolution .....	35%
▪ Forensics .....	40%
▪ Counter-Measures .....	30%
▪ Auditing and Reporting.....	35%

#### ■ Strategic Business Impact

##### • Security Risk Avoidance

▪ Denial of Service .....	15%
▪ Data Destruction .....	15%
▪ Theft of Proprietary Information .....	15%
▪ Illegal System Access - Outsider .....	15%

### → Tivoli Identity Manager:

IBM Tivoli Identity Manager provides a single point for managing users, and a consistent access control policy that integrates with existing environments.

#### ■ IT Operation Savings

##### • Security Management Labor Savings

▪ Policy Management .....	10%
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#### ■ Strategic Business Impact

• Password Resets Service Desk Savings.....	40%
• User Access Control .....	30%
• Password Reset Lost Business Avoidance.....	40%

##### • Security Risk Avoidance

▪ Data Destruction .....	10%
▪ Theft of Proprietary Information .....	10%
▪ Illegal System Access - Outsider .....	10%
▪ Unauthorized Insider Access .....	10%

→ **Tivoli Access Manager for e-business:**

IBM Tivoli Access Manager for e-business lets organizations control both wired and wireless access to applications and data; keeping unauthorized users out.

■ **IT Operation Savings**

- Security Management Labor Savings

▪ Policy Management .....	10%
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• Application Security Development Savings .....	20%
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■ **Strategic Business Impact**

• Application Security Time to Market .....	20%
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- Security Risk Avoidance

▪ Data Destruction .....	10%
▪ Theft of Proprietary Information .....	10%
▪ Illegal System Access - Outsider .....	10%
▪ Unauthorized Insider Access .....	10%

→ **Tivoli Privacy Manager:**

Tivoli has introduced a new software product-IBM® Tivoli® Privacy Manager for e-business, version 1.1-that is designed to help organizations build privacy policies and practices directly into their e-business applications and infrastructure.

■ **IT Operation Savings**

- Security Management Labor Savings

▪ Policy Management .....	10%
▪ Intrusion Management.....	12%
▪ Repair and Resolution .....	12%
▪ Forensics .....	17%
▪ Counter-Measures.....	11%
▪ Auditing and Reporting.....	20%

■ **Strategic Business Impact**

- Security Risk Avoidance

▪ Denial of Service .....	10%
▪ Data Destruction .....	10%
▪ Theft of Proprietary Information .....	5%
▪ Illegal System Access - Outsider .....	5%

➔ **Tivoli Intrusion Manager:**

Tivoli Intrusion Manager is designed to address all these concerns through the use of a centralized management console, advanced event correlation, and reporting/analysis. By integrating a variety of sources and combining a Web Intrusion Detection System, Network Intrusion Detection System, and DB2® Universal Database, Tivoli Intrusion Manager secures a customer's environment and brings together data collection, analysis, and problem resolution into a single monitoring system.

■ **IT Operation Savings**

• **Security Management Labor Savings**

▪ Intrusion Management.....	25%
▪ Repair and Resolution .....	5%
▪ Forensics .....	5%
▪ Auditing and Reporting.....	10%

■ **Strategic Business Impact**

• **Security Risk Avoidance**

▪ Denial of Service .....	4%
▪ Data Destruction .....	3%
▪ Theft of Proprietary Information .....	3%
▪ Illegal System Access - Outsider .....	5%

➔ **Tivoli Access Manager for Business Integration:**

IBM Tivoli Access Manager for Business Integration is a comprehensive security solution for IBM WebSphere® MQ, also known as MQSeries. It provides access control services to restrict which applications can open an MQSeries resource and then "put" or "get" messages on specific queues.

■ **IT Operation Savings**

• **Security Management Labor Savings**

▪ Policy Management .....	10%
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• **Application Security Development Savings .....** 20%

■ **Strategic Business Impact**

• **Application Security Time to Market .....** 20%

• **Security Risk Avoidance**

▪ Data Destruction .....	10%
▪ Theft of Proprietary Information .....	10%
▪ Illegal System Access - Outsider .....	10%
▪ Unauthorized Insider Access .....	10%

→ Tivoli Access Manager for Operating Systems:

IBM Tivoli® Access Manager for Operating Systems is a policy-based access control system for UNIX and Linux operating systems. This comprehensive security solution effectively addresses the many system vulnerabilities surrounding UNIX/Linux super user or “root” accounts.

■ IT Operation Savings

- Security Management Labor Savings

▪ Policy Management .....	10%
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• Application Security Development Savings .....	20%
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■ Strategic Business Impact

• Application Security Time to Market .....	20%
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- Security Risk Avoidance

▪ Data Destruction .....	10%
▪ Theft of Proprietary Information .....	10%
▪ Illegal System Access - Outsider .....	10%
▪ Unauthorized Insider Access .....	10%

## Storage Management

### → Tivoli Storage Manager:

IBM Tivoli Storage Manager protects your organization's data from hardware failures and other errors by storing backup and archive copies of data on offline storage. Scaling to protect hundreds of computers running a dozen OS ranging from laptops to mainframes and connected together via the internet, WANs or LANs, Storage Manager's centralized web-based management, smart-data-move and store techniques and comprehensive policy-based automation all work together to minimize data protection administration costs and the impact to both computers and networks.

#### ■ IT Operation Savings

##### • Storage Management Labor Savings

▪ Capacity and Performance Management .....	15%
▪ Disaster / Contingency Planning.....	15%
▪ Backup Administration .....	20%
▪ Data Restore .....	15%
▪ Tape Administration.....	30%

• Tape System Purchase Avoided.....	40%
• Network Bandwidth Savings .....	40%

#### ■ Strategic Business Impact

• Restore Time Benefits .....	20%
• Backup Coverage Risk Avoidance.....	90%

### → Tivoli SANergy:

With Tivoli® SANergy™, customers can efficiently centralize their storage resources for administration overhead, improved performance, and greater ROI. Tivoli SANergy enables users implementing storage area networks (SANs) to transparently share access to common storage, volumes, and files.

#### ■ IT Operation Savings

##### • Storage Management Labor Savings

▪ Capacity and Performance Management .....	11%
▪ Disaster / Contingency Planning.....	15%
▪ Backup Administration .....	10%
▪ Data Restore .....	15%
▪ Tape Administration.....	5%

• Tape System Purchase Avoided.....	5%
• Network Bandwidth Savings .....	10%

#### ■ Strategic Business Impact

• Restore Time Benefits .....	10%
• Backup Coverage Risk Avoidance.....	20%

➔ **Tivoli Storage Network Manager:**

Tivoli Storage Network Manager is a comprehensive solution that discovers, monitors and manages your SAN fabric components and allocates and automates your attached disk storage resources.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	15%
▪ Disaster / Contingency Planning.....	12%
▪ Data Restore .....	10%

• Network Bandwidth Savings .....	10%
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■ **Strategic Business Impact**

• Restore Time Benefits .....	10%
• Backup Coverage Risk Avoidance.....	20%

➔ **Tivoli Storage Manager Enterprise Edition:**

IBM Tivoli Storage Manager Enterprise Edition protects data from hardware failures, errors, and unforeseen disasters by storing backup and archive copies on offline and offsite storage.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	30%
▪ Disaster / Contingency Planning.....	30%
▪ Backup Administration .....	40%
▪ Data Restore .....	30%
▪ Tape Administration .....	40%
▪ Archiving .....	40%

• Storage Purchase Avoided (HSM-Near Line/Off Line) .....	100%
• Tape System Purchase Avoided.....	40%
• Network Bandwidth Savings .....	40%

■ **Strategic Business Impact**

• Restore Time Benefits .....	20%
• Backup Coverage Risk Avoidance.....	90%

→ **Tivoli Storage Manager for Mail:**

IBM Tivoli Storage Manager for Mail is a software module for IBM Tivoli Storage Manager that automates the data protection of email servers running either Lotus Domino or Microsoft Exchange.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	5%
▪ Disaster / Contingency Planning.....	5%
▪ Backup Administration .....	5%
▪ Data Restore .....	5%
▪ Tape Administration .....	2%
▪ Archiving .....	5%

■ **Strategic Business Impact**

• Backup Coverage Risk Avoidance.....	90%
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→ **Tivoli Storage Manager for Application Servers:**

IBM Tivoli Storage Manager for Application Servers is a software module that works with IBM Tivoli Storage Manager to better protect the infrastructure and application data and improve the availability of WebSphere Application Servers.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	5%
▪ Disaster / Contingency Planning.....	5%
▪ Backup Administration .....	5%
▪ Data Restore .....	5%
▪ Tape Administration .....	2%
▪ Archiving .....	5%

■ **Strategic Business Impact**

• Backup Coverage Risk Avoidance.....	90%
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➔ **Tivoli Storage Manager for Databases:**

IBM Tivoli Storage Manager for Databases is a software module that works with IBM Tivoli Storage Manager to protect a wide range of application data via the protection of the underlying databases management systems holding that data. Storage Manager for Databases, exploits the backup-certified utilities and interfaces provided for Oracle, Microsoft SQL Server, and Informix.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	5%
▪ Disaster / Contingency Planning.....	5%
▪ Backup Administration .....	5%
▪ Data Restore .....	5%
▪ Tape Administration.....	2%
▪ Archiving .....	5%

■ **Strategic Business Impact**

• Backup Coverage Risk Avoidance.....	90%
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➔ **Tivoli Storage Manager for Enterprise Resource Planning:**

IBM Tivoli Storage Manager for Enterprise Resource Planning (ERP) is a software module that works with IBM Tivoli Storage Manager to better protect the infrastructure and application data and improve the availability of SAP R/3 Servers. Specifically designed and optimized for the SAP R/3 environment, IBM Tivoli Storage Manager for ERP provides automated data protection, reduces the CPU performance impact of data backups and restores on the R/3 server, and greatly reduces the administrator workload necessary to meet data protection requirements.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	5%
▪ Disaster / Contingency Planning.....	5%
▪ Backup Administration .....	5%
▪ Data Restore .....	5%
▪ Tape Administration.....	2%
▪ Archiving .....	5%

■ **Strategic Business Impact**

• Backup Coverage Risk Avoidance.....	90%
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➔ **Tivoli Storage Manager for Hardware:**

IBM Tivoli Storage Manager for Hardware improves the data protection of your business-critical databases and ERP applications that require 24x365 availability. This software module helps IBM Tivoli Storage Manager and its other data protection modules to perform high-efficiency data backups and archives of your most business-critical applications while eliminating nearly all performance impact on database or ERP servers.

■ **IT Operation Savings**

• **Storage Management Labor Savings**

▪ Capacity and Performance Management .....	5%
▪ Disaster / Contingency Planning .....	5%
▪ Backup Administration .....	5%
▪ Data Restore .....	5%
▪ Tape Administration .....	2%
▪ Archiving .....	5%

■ **Strategic Business Impact**

• Backup Coverage Risk Avoidance .....	90%
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## Technology and Management Practices

Each of the Tivoli solution's potential savings figures is scaled by the company's Management Practices to account for additional savings opportunities for the Tivoli solution when the company has not implemented many best practices and is complex, and less savings opportunity when the company is already using some significant best practices.

The Technology and Management Practices subjectively rates the company's current computing environment and management practices compared to the Typical Company. The measurement is made using two factors, Best Practices and Environment.

The Best Practices represent the current state of the company's IT management people, processes and technology. These practices are rated from one, the lowest, to ten, the best, with five being average, two being below average, and eight being above average. The categories include:

- ▶ **Technology / Tools** - the business impact instrumentation currently in place to help manage security, manage storage, proactively and reactively manage performance and availability, and proactively and reactively optimize configurations and operations.
- ▶ **Integration Effectiveness** - the integration of various toolsets into a common management framework for more efficient and effective IT management of policies, process, correlation and reporting.
- ▶ **Process Maturity** - the capability and maturity of policies, processes, procedures, documentation, training and people skills.

The Environment section is used to determine how the environment can influence current cost of ownership calculations, and savings potential. The Environment section is rated from ten the lowest, to one, the highest with five being average, two being more dependent or complex on average, and eight being less dependent or complex on average. The categories include:

- ▶ **Business Impact Dependency** - a measure of how dependent the business is on IT, including the severity of impact due to availability, security or data issues.
- ▶ **Complexity** - how complex the computing environment is perceived to be based on the number of locations, remote and mobile users, unique geographies and languages to support and number and types of platforms, operating systems and applications.

Based on the average score of Best Practices and Environment, the savings are scaled. This scaling is performed using the following formula and table:

$$\text{Net Savings} = \text{Tivoli Ideal Savings} + (\text{Tivoli Ideal Savings} * \text{Practices Scaling Factor})$$

Practices Score	Practices Scaling Factor
1	20%
2	15%
3	10%
4	5%
4.5	2.5%
5	0%
5.5	-1.5%
6	-3%
7	-5%
8	-10%
9	-15%
10	-20%

Based on the average score of Best Practices and Environment, the staff FTEs are scaled. This scaling is performed using the following formula and table:

$$FTEs = \text{Calculated FTEs} + (\text{Calculated FTEs} * \text{Practices Scaling Factor})$$

Practices Score	Practices Scaling Factor
1	40%
2	20%
3	10%
4	5%
4.5	2.5
5	0%
5.5	-2.5%
6	-5%
7	-10%
8	-20%
9	-30%
10	-40%

Additionally, staff FTE numbers are scaled based upon company size. For companies with fewer than 2,500 users, numbers are scaled up by 20%; for companies with more than 8,000 users, numbers are scaled down by 20%.

## Data Sources

The Tivoli ROI Analyst software tool and metrics were developed by Alinean, the leading developer of research, methodologies and software tools to measure and quantify the value and return on investment from Information Technology solutions.

Since 1994, the Alinean team has been researching the ROI and TCO of IT, and building tools to help quantify and improve the value in IT investments. With a database of over 27,000 worldwide businesses and IT organizations, Alinean has the unique capabilities to analyze and compare costs, and predict the impact of best practices and projects on corporate financial performance and budget savings.

Within the tool, the default questionnaire metrics were developed from statistical analysis of all companies in the database, and survey analysis of a portion of the companies. These metrics are scaled based on company size and management practices. The default savings metrics were developed by modeling the products impact on improving best practices, and then verifying these model assumptions with existing installations to verify results. Based on the company's current management practices, these savings estimates are automatically scaled down, if the company already has implemented best practices, or upwards if the company ranks low on the management practices, capability and maturity.