

Valued Customer Monitoring

February 22, 2008

Prepared For:

John Doe, Infrastructure Manager

Valued Customer

123 Success St., Toronto, Canada

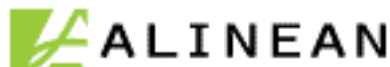
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IBM

Third party model, methodology and data provided by:



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1. Project Overview

This ROI Analysis was created specifically for Valued Customer, with research and analysis completed on February 22, 2008.

The performance and availability of the IT infrastructure can be the difference between business success and failure. Losing a business-critical server, or having performance degradation in your environment, can result in significant financial loss, as well as longer-term damage to your company image. With the increase in enterprise strategic business applications and related resources, not only has the number and type of servers increased, but they are also spread across many locations. Thus, the task of managing multiple types of resources has become increasingly complex for IT professionals.

Several project team members from Valued Customer participated in the analysis, including:

- Jane Smith
- John Doe

The results in this report were created from the Valued Customer's own profile and opportunity metrics (specifically provided by the team) and industry research metrics and financial calculations contained in the Alinean ROI Analyst software, an independent financial modeling tool and model developed by worldwide leading and independent analyst firm IDC (<http://www.idc.com>) and ROI consultancy Alinean, The IT Value Experts (<http://www.alinean.com>).

2. Executive Summary

A risk adjusted analysis of the proposed solution's impact was conducted and it was projected that implementing the proposed solutions resulted in Can\$8,887,936 of 5 year cumulative benefits. Of these projected benefits, Can\$2,575,175 are direct benefits and Can\$6,312,761 are indirect benefits.

Top cumulative benefits for the project include:

- Increased Availability - Automation - Can\$6,150,263
- IT Operations Labor Savings - Automation - Can\$2,416,281
- Software Purchase Avoidance / Overspend - Can\$158,893
- Options (Residual Value) - Automation - Can\$132,200
- Informal Support Savings - Can\$30,298
- Hardware Purchase Avoidance - Can\$0

These benefits can be grouped regarding business impact as:

- Can\$2,707,375 in IT cost reductions
- Can\$30,298 in business operating efficiency improvements
- Can\$6,150,263 in business strategic advantage benefits

The proposed project is expected to help the company meet the following goals and drive the following benefits:

- Improve IT System Availability / Service Levels Can\$6,150,263
- Improve IT Staff Efficiency / Productivity Can\$2,416,281
- Reduce IT Infrastructure Costs Can\$158,894
- Other Can\$132,200
- Improve Employee Productivity and Collaboration Can\$30,298

The proposed project is expected to deliver the following benefits to specified stakeholders:

- Information Technology - IT Can\$8,857,638
- Enterprise-wide Target User Population Can\$30,298

To implement the proposed project will require a 5 year cumulative investment of Can\$1,817,771 including:

- Can\$498,985 in initial expenses
- Can\$921,332 in capital expenditures
- Can\$896,438 in operating expenditures

Comparing the costs and benefits of the proposed project using discounted cash flow analysis and factoring in a risk-adjusted discount rate of 9.5%, the proposed business case predicts:

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- Risk Adjusted Return on Investment (RA ROI) of 336%
- Return on Investment (ROI) of 389%
- Net Present Value (NPV) savings of Can\$5,066,601
- Internal Rate of Return (IRR) of 181%
- Payback period of 12.0 month(s)

Note: The project has been risk-adjusted for an overall deployment schedule of 5 months, realized benefits to include 100.0% of direct benefits and 50.0% of indirect benefits and a deployment schedule (adoption curve) of 100.0%, 100.0%, and 100.0% over each successive year of the analysis.

3. Proposed Solution

Based on your unique opportunities, IBM and representatives from your team determined that the following solutions would help address your goals and opportunities best:

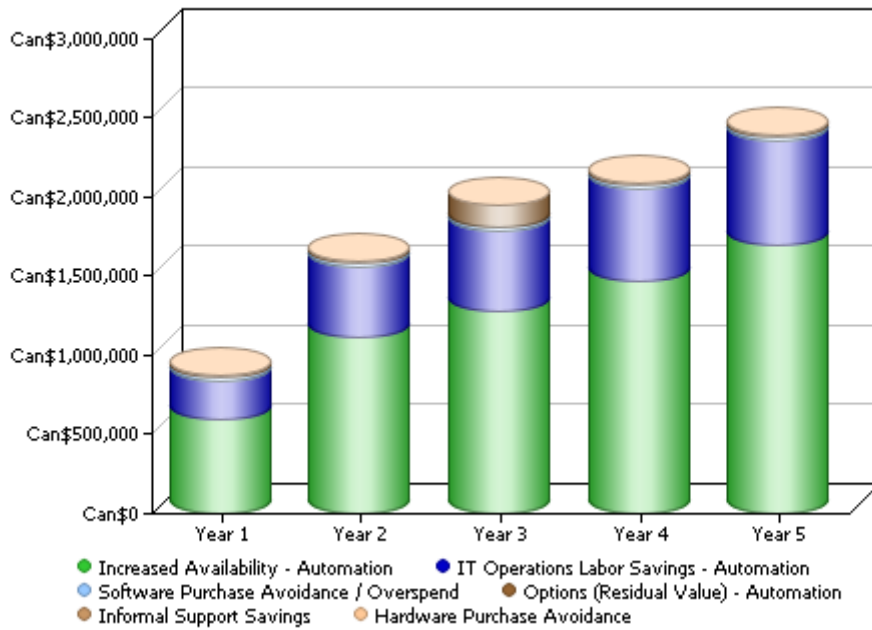
IBM Tivoli Monitoring
 IBM Tivoli Monitoring for Databases
 Netcool/Webtop
 Netcool/Impact
 Netcool/OMNibus
 Netcool/Precision

4. Benefit Summary

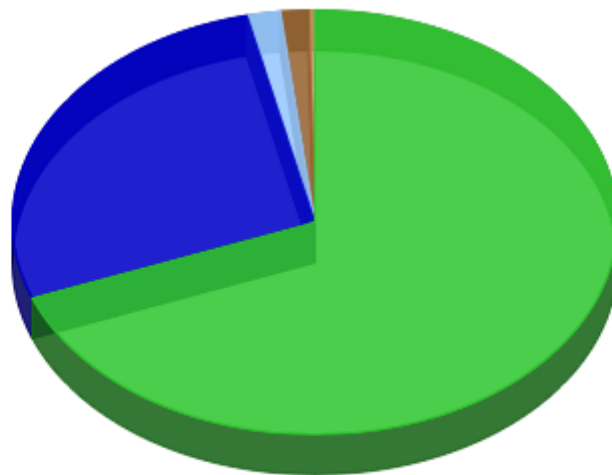
The proposed solution is expected to deliver Can\$8,887,936 over the 5 year analysis period, with Can\$2,575,175 in direct (hard) benefits, and Can\$6,312,761 in indirect (soft) benefits.

Benefits Summary	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Total Benefits	Can\$868,963	Can\$1,590,599	Can\$1,953,315	Can\$2,085,666	Can\$2,389,393	Can\$8,887,936
IT Cost Reductions						
IT Operations Labor Savings - Automation	Can\$236,879	Can\$440,162	Can\$503,718	Can\$576,282	Can\$659,240	Can\$2,416,281
Software Purchase Avoidance / Overspend	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779	Can\$158,893
Hardware Purchase Avoidance	Can\$0	Can\$0	Can\$0	Can\$0	Can\$0	Can\$0
Options (Residual Value) - Automation (Indirect)	Can\$0	Can\$0	Can\$132,200	Can\$0	Can\$0	Can\$132,200
Total IT Cost Reductions	Can\$268,657	Can\$471,941	Can\$667,697	Can\$608,061	Can\$691,019	Can\$2,707,375
Business Operating Efficiency						
Informal Support Savings (Indirect)	Can\$3,719	Can\$6,449	Can\$6,578	Can\$6,709	Can\$6,844	Can\$30,298
Total Business Operating Efficiency	Can\$3,719	Can\$6,449	Can\$6,578	Can\$6,709	Can\$6,844	Can\$30,298
Business Strategic Advantage						
Increased Availability - Automation (Indirect)	Can\$596,587	Can\$1,112,209	Can\$1,279,040	Can\$1,470,896	Can\$1,691,531	Can\$6,150,263
Total Business Strategic Advantage	Can\$596,587	Can\$1,112,209	Can\$1,279,040	Can\$1,470,896	Can\$1,691,531	Can\$6,150,263
Direct Benefits	Can\$268,657	Can\$471,941	Can\$535,497	Can\$608,061	Can\$691,019	Can\$2,575,175
Indirect Benefits	Can\$600,306	Can\$1,118,658	Can\$1,417,818	Can\$1,477,606	Can\$1,698,374	Can\$6,312,761

Benefits

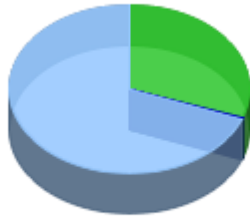


Top Benefits



- Increased Availability - Automation [69.2%]
- IT Operations Labor Savings - Automation [27.2%]
- Software Purchase Avoidance / Overspend [1.8%]
- Options (Residual Value) - Automation [1.5%]
- Informal Support Savings [0.3%]
- Hardware Purchase Avoidance [0.0%]

Benefits By Category



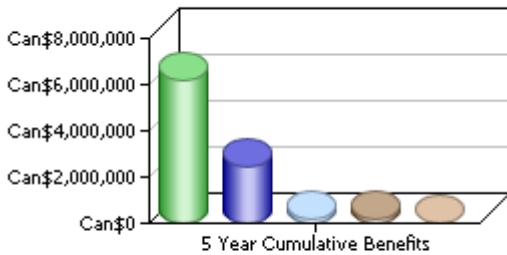
■ IT Cost Reduction [30.5%]
 ■ Business Operating Efficiency [0.3%]
 ■ Business Strategic Advantage [69.2%]

Direct vs Indirect Benefits



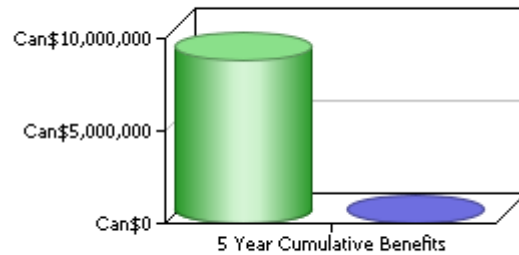
■ Direct [29.0%] ■ Indirect [71.0%]

Benefits By Goal



● Improve IT System Availability / Service Levels
 ● Improve IT Staff Efficiency / Productivity
 ● Reduce IT Infrastructure Costs ● Other
 ● Improve Employee Productivity and Collaboration

Benefits By Stakeholder



● Information Technology - IT
 ● Enterprise-wide Target User Population

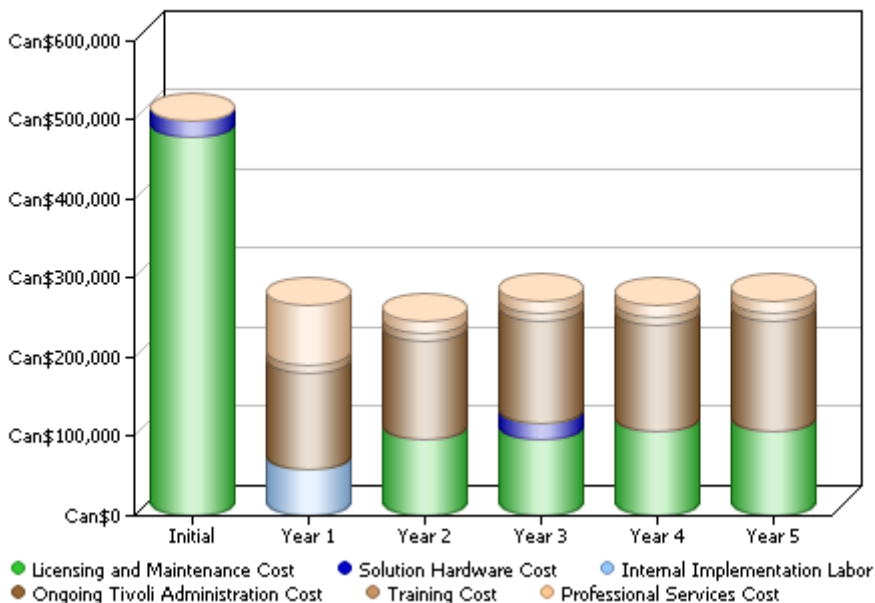
5. Investment Summary

To implement the proposed project will require a 5 year cumulative investment of Can\$1,817,771 including:

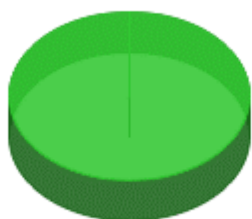
- Can\$498,985 in initial expenses
- Can\$921,332 in capital expenditures
- Can\$896,438 in operating expenditures

Investment Summary	Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Total Investment	Can\$498,985	Can\$266,480	Can\$245,597	Can\$270,589	Can\$265,360	Can\$270,760	Can\$1,817,771
Capital Expenditure							
Licensing and Maintenance Cost (IT)	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377	Can\$881,332
Solution Hardware Cost (IT)	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0	Can\$40,000
Total Capital Expenditure	Can\$498,985	Can\$0	Can\$95,797	Can\$115,797	Can\$105,377	Can\$105,377	Can\$921,332
Operating Expenditure							
Ongoing Tivoli Administration Cost (IT)	Can\$0	Can\$120,000	Can\$124,801	Can\$129,793	Can\$134,983	Can\$140,383	Can\$649,960
Professional Services Cost (IT)	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000	Can\$137,480
Internal Implementation Labor (IT)	Can\$0	Can\$59,000	Can\$0	Can\$0	Can\$0	Can\$0	Can\$59,000
Training Cost (IT)	Can\$0	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$49,998
Total Operating Expenditure	Can\$0	Can\$266,480	Can\$149,800	Can\$154,792	Can\$159,983	Can\$165,383	Can\$896,438

Investment



Investment By Category



■ IT Costs [100.0%] ■ BU Costs [0.0%]

Investment by Expense Type



■ Capital Expenditure [50.7%] ■ Operating Expenditure [49.3%]

6. ROI Analysis

Analyzing the opportunity, and applying the proposed solution, the cash flow and key financial metrics were calculated, resulting in a:

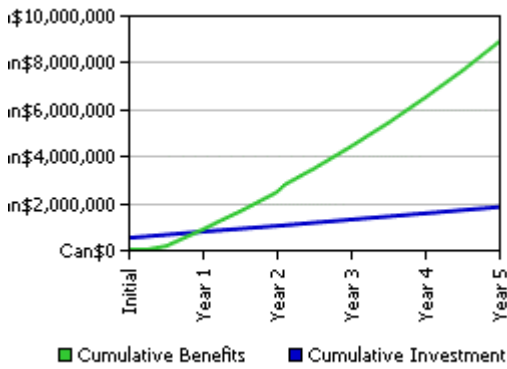
- Risk Adjusted Return on Investment (RA ROI) of 336%
- Return on Investment (ROI) of 389%
- Net Present Value (NPV) savings of Can\$5,066,601
- Internal Rate of Return (IRR) of 181%
- Payback period of 12.0 month(s)

ROI Analysis (Probable Case)	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Benefits	Can\$0	Can\$868,963	Can\$1,590,599	Can\$1,953,315	Can\$2,085,666	Can\$2,389,393
Cumulative Benefits		Can\$868,963	Can\$2,459,562	Can\$4,412,877	Can\$6,498,543	Can\$8,887,936
Investment	Can\$498,985	Can\$266,480	Can\$245,597	Can\$270,589	Can\$265,360	Can\$270,760
Cumulative Investment	Can\$498,985	Can\$765,465	Can\$1,011,062	Can\$1,281,651	Can\$1,547,011	Can\$1,817,771
Cash Flow	(Can\$498,985)	Can\$602,483	Can\$1,345,001	Can\$1,682,725	Can\$1,820,307	Can\$2,118,633
Cumulative Cash Flow	(Can\$498,985)	Can\$103,498	Can\$1,448,500	Can\$3,131,225	Can\$4,951,532	Can\$7,070,165
ROI	389%					
Risk Adjusted ROI	336%					
NPV Savings	Can\$5,066,601					
IRR	181%					
Payback period (including deployment period)	12 month(s)					

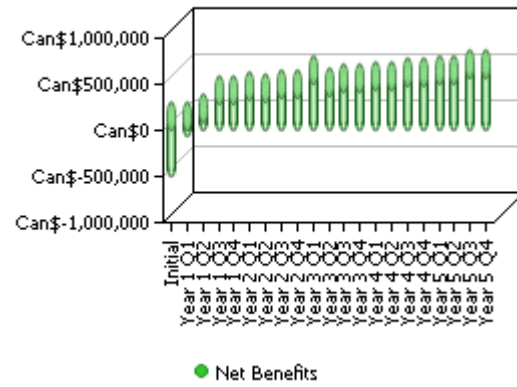
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Risk Adjusted Discount Rate	9.5%					
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Breakeven



Cash Flow



Appendix A: Questionnaire (As Is)

Current Company Profile

Industry organization operates in	Financial Services	n1
Primary geographic location	United States	n2
Primary site location	Metropolitan	n3

Current annual revenue or equivalent (in millions)	Can\$248.0	n4
Average annual expected growth in revenue or equivalent (over analysis period)	0.0%	n5
Net incremental contribution	27.3%	n6

Number of employees for the company or organization (in total)	1,071	n7
Average revenue or equivalent per employee (annual revenue or equivalent / # of employees)	Can\$231,559	
Average annual unburdened salary for employees	Can\$81,903	n8
Average annual growth in the number of employees	0.0%	n9

Salary Adjustment Factors

Average burdened salary rate	26.0%	n10
Average salary increase per year	4.0%	n11
Average hours worked per year	1,880	n12

Current Enterprise Servers

Enterprise Servers	Total Number of Systems	
Web	25	n13
Database	97	n14
Messaging	0	n15
Application and middleware	45	n16
File / print and other	0	n17
Total	167	

Current IT Staff Headcount and Salaries

IT Operations Staff	Number of FTEs	Average Unburdened Salary	
Business systems management	0.50	Can\$139,235	n18
Database management	2.00	Can\$135,140	n19
Application administration	1.00	Can\$135,140	n20
Web management	1.00	Can\$135,140	n21
Messaging management	0.00	Can\$128,588	n22
Systems management	2.00	Can\$122,855	n23
Network management	1.00	Can\$122,855	n24
Software distribution and control	0.50	Can\$114,664	n25
Asset management	1.00	Can\$114,664	n26
Job scheduling	1.00	Can\$114,664	n27
Provisioning management	0.25	Can\$122,855	n28
Capacity and performance management	0.00	CS\$123,714	n29
Incident and problem management (handling problem events)	3.00	Can\$73,713	n30
Non incident event handling	1.00	Can\$73,713	n31
Service level management	0.50	Can\$122,855	n32
Change management	0.50	Can\$122,855	n33
Budgeting and accounting / chargeback	0.00	Can\$122,855	n34
IT compliance management and reporting	0.00	Can\$129,407	n35
IT training and learning	0.00	Can\$98,284	n36
Other (specify)	0.00	Can\$122,855	n37
Total	15.25	Can\$112,382	
Average number of servers managed per staff FTE	11.0		

Average annual IT staff growth	0.0%	n38
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Current Informal Support Costs (Shadow Support)

Informal support (hours per user per month)	1.1	n40
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Current Server Hardware Upgrade and Replacement Investments

Planned server hardware investment (next 12 months)	Can\$500,000	n41
Planned server investment annual growth	0.0%	n42

Current Annual Software Licensing Costs

Current annual software licensing expenditures	Can\$500,000	n43
Average annual overspend on software licenses	8.0%	n44
Planned software investment annual growth	0.0%	n45

Current Service Level Management

Current annual service level penalties from business units
Annual trend (increase/decrease) in penalties and fees

Can\$0	n46
15.0%	n47

Current Business System Availability

Business System Name	Business System Type	Availability	Annual Operating Hours	Business Loss per Hour	
Overall	Custom	99.500%	8,736.0	Can\$33,007	n48
	e-Commerce	99.500%	8,736.0	Can\$477,501	n49
	None	99.500%	8,736.0	Can\$0	n50
	None	99.500%	8,736.0	Can\$0	n51
	None	99.500%	8,736.0	Can\$0	n52
	None	99.500%	8,736.0	Can\$0	n53
	None	99.500%	8,736.0	Can\$0	n54
	None	99.500%	8,736.0	Can\$0	n55

Notes:

1. The industry the organization operates in represents the main industry classification for the company. This, along with the primary location of the organization help scale key metrics in the tool, particular relating to salary and revenue per employee figures.
2. The primary geographic location where the organization operates.
3. The primary location of the organization's headquarters site, main site, or the majority of the organization's staff.

Metropolitan should be defined as a central city with densely populated surrounding areas with combined population of 250,000 or greater and density greater than 1000 people per square mile.

Urban should be defined as a central city populated in a wide-reaching surrounding area with combined population of 250,000 or greater but density less than 1000 people per square mile.

Suburban should be defined as having a population of 2500 to 249,999 and adjacent to a metro or urban area.

Rural should be defined as having a population of 2500 - 249,999 and not adjacent to a metro area.

The figure is used to help scale key metrics in the tool, particularly relating to default salary figures as salaries are normally higher in urban vs. rural settings.

4. The average annual revenue or equivalent for the organization, entered in millions.
5. The average annual expected growth in revenue or equivalent over the analysis period. This percentage is often used to determine annual increase in expected benefits for ongoing years under the proposed solutions.
6. The net incremental contribution is based on gross margin on revenue or equivalent less any sales or delivery costs associated with generation of incremental revenue or equivalent. Incremental contribution is calculated as the gross margin less the sum of incremental sales and delivery costs. Incremental contribution is expressed as a percentage of revenues or equivalents. This number is a measure of the contribution of incremental revenue or equivalent to profitability.
7. The number of employees represents the total number of computer employees in the company which are internal. The number of employees is an important factor in the determination of the size of the server environment and the IT staff supporting the organization, as larger organizations tend to stretch resources further than do smaller organizations.
8. The average annual salary for internal end users. Used when calculating productivity benefits in the analysis.
9. The expected annual growth in users represents the predicted compound annual growth rate for user headcount over successive years of the analysis. This growth rate is used for the current year (year 1), as well as successive years of the analysis.
10. The incremental burden rate on employee salaries for benefits and taxes. The burdened rate includes taxes, health benefits, retirement benefits, and vacation. All salaries are calculated as burdened, meaning that they are increased by $(1 + \text{burdened rate}) * \text{salary}$ to reflect the true cost of the staff member to the organization.
11. The average annual increase in salaries over the analysis period.
12. The average annual number of hours worked by an employee each year.
13. The total number of web servers and the total number of processors on the web servers in the organization. The server census information is used to help establish key IT staff FTE headcount figures. It affects the estimated cost of ownership and the opportunity for the Tivoli value proposition. Default assumes 1 web server for every 500 internal users, and is scaled by the overall size of the organization.
14. The total number of database servers and the total number of processors on the database servers in the organization. The server census information is used to help establish key IT staff FTE headcount figures. It affects the estimated cost of ownership and the opportunity for the Tivoli value proposition. Default assumes 1 database server for every 200 internal users, and is scaled by the overall size of the organization.
15. The total number of messaging servers and the total number of processors on the messaging servers in the organization. The server census information is used to help establish key IT staff FTE headcount figures. It affects the estimated cost of ownership and the opportunity for the Tivoli value proposition. Default assumes 1 messaging server for every 150 internal users, and is scaled by the overall size of the organization.
16. The total number of application and middleware servers and the total number of processors on the application and middleware servers in the organization. The server census information is used to help establish key IT staff FTE headcount figures. It affects the estimated cost of ownership and the opportunity for the Tivoli value proposition. Default assumes 1 application / middleware server for every 300 internal users, and is scaled by the overall size of the organization.
17. The total number of file/print and other servers and the total number of processors on the file/print and other servers in the organization. The server census information is used to help establish key IT staff FTE headcount figures. It affects the estimated cost of ownership and the opportunity for the Tivoli value proposition. Default assumes 1 file/print and other server for every 70 internal users, and is scaled by the overall size of the organization.
18. Business system management: This staff manages business continuance planning, configuration, and access; monitors performance and throughput; assesses downtime impact on operations; and performs transaction response monitoring. A typical company, with technology and management practices at medium (5), has one FTE for every 4400 users or one FTE for every 78 servers.
19. Database management: This staff manages database applications and systems including database administration, availability, capacity planning, performance and maintenance. A typical company, with technology and management practices at medium (5), has one FTE for every 5900 users or one FTE for every 15 database servers.
20. Application administration: This staff manages the performance and availability of packaged business software and custom business applications. A typical company, with technology and management practices at medium (5), has one FTE for every 2800 users or one FTE for every 47 servers.
21. Web management: This staff manages the web server and applications including traffic and pattern analysis, transaction analysis, performance tuning, load balancing, availability management and capacity planning. These tasks include establishing tags, managing monitoring tools, and developing reports for sales and marketing on traffic and patterns. A typical company, with technology and management practices at medium (5), has one FTE for every 12,500 users or one FTE for every 15 web servers.
22. Messaging management: This staff manages messaging applications for performance, availability, capacity, configurations and policies. A typical company, with technology and management practices at medium (5), has one FTE for every 4000 users or one FTE for every 15 messaging servers.
23. Systems management: This staff is responsible for managing the setup and configuration, deployment, administration, monitoring and management of computer system hardware including infrastructure servers and middleware. A typical company, with technology and management practices at medium (5), has one FTE for every 2300 users or one FTE for every 15 file/print and middleware servers.
24. Network management: This staff is responsible for managing the setup and configuration, deployment, administration, monitoring and management of networking hardware. A typical company, with technology and management practices at medium (5), has one FTE for every 2700 users or one FTE for every 47 servers.
25. Software distribution and control: This staff is responsible for managing the packaging, distribution and control of software. A typical company, with technology and management practices at medium (5), has one FTE for every 4200 users or one FTE for every 75 servers.
26. Asset management: This staff is responsible for managing the asset inventory, database and control. A typical company, with technology and management practices at medium (5), has one FTE for every 5500 users or one FTE for every 93 servers.

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27. Job scheduling: This staff is responsible for application workload analysis and job scheduling. A typical company, with technology and management practices at medium (5), has one FTE for every 5500 users or one FTE for every 93 servers.
28. Provisioning management: This staff is responsible for configuring and deploying systems. A typical company, has one FTE for every 5500 users.
29. Capacity and performance management: This staff is responsible for monitoring capacity usage and performance installing additional capacity, and tuning for performance and availability. A typical company, with technology and management practices at medium (5), has one security FTE for every 3200 GB of storage who devotes 25% of his/her time to capacity and performance management.
30. Incident and problem management: This staff are responsible for the following help desk roles in an organization: service desk level 1, service desk level 2, dispatched support and break-fix management. These individuals identify and solve immediate issues, perform root cause analysis, perform proactive problem prevention, problem issue logging and reporting, and trend analysis. A typical company, with technology and management practices at medium (5), has one FTE for every 360 users.
31. Not all of the unplanned tasks that must be performed by IT are associated with problem incidents. Non-incident requests such as audit, compliance verification, or business system planning can entail large amounts of time gathering information on the state of current systems and the interrelationships between them. IBM solutions can help reduce this time by providing information on the current state and interrelationships of IT components. A typical company, with technology and management practices at medium (5), has one FTE for every 750 users.
32. Service level management: This staff is responsible for setting service levels, assessment and compliance reporting. A typical company, with technology and management practices at medium (5), has one FTE for every 4200 users or one FTE for every 75 servers.
33. Change management: This staff is responsible for change management within the IT organization. A typical company, with technology and management practices at medium (5), has one FTE for every 4200 users or one FTE for every 75 servers.
34. Budgeting and accounting/chargeback: This staff is responsible for the management of IT capital and operational budgets, and the assignment and accounting of appropriate chargeback systems. A typical company, with technology and management practices at medium (5), has one FTE for every 8000 users.
35. IT compliance management and reporting: staff responsible for creating, documenting, and demonstrating compliance with policies and standards including (but not limited to) understanding regulatory mandates - update of corresponding security policies, controls and documentation to ensure continued compliance; determining specific requirements; creating a control architecture; documenting the audit approach; and collecting audit evidence. A typical company, with technology and management practices at medium (5) has one FTE in general, plus an additional half an FTE for every 100 million in revenue or equivalent.
36. IT training and learning: This staff IS training is responsible for performing IT training course development, coordination, and instruction. A typical company, with technology and management practices at medium (5), has one FTE for every 5000 users.
37. Other is used to collect the number of FTEs devoted to other on demand tasks in the organization not previously specified or accounted for and the salary costs for those staff.
38. The annual staff growth is applied to years beyond year 1 in the analysis only. Year 1 uses the current staff metrics.
39. Current external support services contracts outlines the investment made by the company in supporting users and the infrastructure through means other than an in-house service desk and technical support staff. This includes the service desk, incident and problem management that is outsourced, and the end user operations burden of self and peer support in lieu of formal support.
40. Informal support (hours per user per month) quantifies the business unit IT spending by users for peer support, in lieu of seeking support through formal channels. Peer support can be caused by cultural and service level issues. On average peer support is four time less effective / efficient than formal support.
41. The current on demand server investment section quantifies the planned server hardware investments in order to assess the opportunity to pool servers for dynamic use, which increases hardware utilization, and can reduce the need for future purchases.
42. The average annual growth in planned server investments
43. The current software licensing section quantifies the planned server software investments in order to assess the opportunity to pool servers for dynamic use, which increases hardware utilization, and can reduce the need for future purchases. Default assumes 1000 per user in annual spending and is scaled by the size of the company or organization.
44. Typically, 8% of an organization's total budget for software licensing expenditures is wasted on licenses that are not used. This overspend maybe recovered through better software licensing management utilizing Tivoli software products.
45. The average annual growth in planned software investments. The default is set equal to the expected annual growth in number of users.
46. Penalties are incurred when service level agreements (SLAs) for responding to and resolving issues are not met according to contract with business units. These penalties are typically assessed as chargebacks from business units.
47. The annual increase or decrease in service level penalties from business units. A decreasing trend should be indicated by a negative percentage.
48. Name of the business system is the name used to best describe the business function performed by this collection of applications, processes and systems.

Type of business system type is the type of business process or application, which is used to determine the default business loss per hour

The availability is the total availability during operational hours, excluding planned outages.

The operational hours designates the typical requirements of the business system in performing business applications. By default calculated as 24 hours per day x 7 days per week x 52 weeks per year.

The business loss per hour is set by default based on the business system type and downtime impact industry standard defaults from Alinean and are documented in the white paper that accompanies this tool. This downtime impact can be further customized to reflect actual value of the business system and risks.

49. Specifies the name, type, availability, annual operating hours, and business loss per hour for one system in the organization.
50. Specifies the name, type, availability, annual operating hours, and business loss per hour for a second system in the organization.
51. Specifies the name, type, availability, annual operating hours, and business loss per hour for a third system in the organization.
52. Specifies the name, type, availability, annual operating hours, and business loss per hour for a fourth system in the organization.
53. Specifies the name, type, availability, annual operating hours, and business loss per hour for a fifth system in the organization.
54. Specifies the name, type, availability, annual operating hours, and business loss per hour for a sixth system in the organization.
55. Specifies the name, type, availability, annual operating hours, and business loss per hour for a seventh system in the organization.

Appendix B: Solution Selection (To Be)

Business Value Analyst for Tivoli Automation

The Business Value Analyst for Tivoli Automation was developed independently by leading IT analyst firm IDC and ROI tool developer and consultancy Alinean, Inc. This analysis tool and model examines current IT capability and maturity, costs and service level opportunities and quantifies potential advantages for Tivoli Automation Solutions to reduce current IT costs, improve IT operations and administration productivity, reduce business risks improve availability and service levels and drive business alignment and opportunities. The tool collects information about current IT costs and opportunities for improvement (defaulting to IDC | Alinean industry research when actual data is not available), then uses research from IDC customer case studies to project potential savings and business benefits using proposed solution sets. This research reflects typical benefits for similar company type, size, location, capability and maturity and is refined via opportunity and savings assessments by all stakeholders to estimate and quantify the benefits that could be achieved.

Tivoli Automation Solution Portfolio

Select one or more solutions which help the company meet their strategic business initiatives. Specify additional details about the selected solution and configuration.

Business Service Management (select all products to include in analysis)

IBM Tivoli Business Systems Manager	n1
IBM Tivoli Service Level Advisor	n2
Netcool/Realtime Active Dashboard	n3

Availability - Monitoring (select all products to include in analysis)

IBM Tivoli Enterprise Console	n4
IBM Tivoli NetView (Distributed Environment)	n5
IBM Tivoli Switch Analyzer	n6
IBM Tivoli Systems Automation for Multiplatforms	n7
X IBM Tivoli Monitoring	n8
IBM Tivoli Monitoring Active Directory Option	n9
IBM Tivoli Monitoring for Applications	n10
X IBM Tivoli Monitoring for Databases	n11
IBM Tivoli Monitoring for Microsoft .Net	n12
IBM Tivoli Monitoring for Virtual Servers	n13
IBM Tivoli OMEGAMON XE for Messaging	n14
IBM Tivoli Monitoring for Messaging & Collaboration	n15
IBM Tivoli Intellivatch	n16
IBM Tivoli OMEGAMON XE for Linux	n17
X Netcool/Webtop	n18
X Netcool/Impact	n19
X Netcool/OMNibus	n20
Netcool/Precision	n21
Netcool/Proviso	n22

Composite Application Management (select all products to include in analysis)

IBM Tivoli Composite Application Manager for Response Time	n23
IBM Tivoli Composite Application Manager for WebSphere	n24
IBM Tivoli Composite Application Manager for SOA	n25
IBM Tivoli Composite Application Manager for J2EE	n26

zSeries (select all products to include in analysis)

IBM Tivoli NetView for TCP/IP Performance	n27
IBM Tivoli NetView Performance Monitor	n28
IBM Tivoli Decision Support for z/OS	n29
IBM Tivoli Output Manager for z/OS	n30
IBM Tivoli System Automation for z/OS	n31
IBM Tivoli OMEGAMON XE on z/OS	n32
IBM Tivoli OMEGAMON XE for z/Linux	n33
IBM Tivoli OMEGAMON DE on z/OS	n34
IBM Tivoli OMEGAMON XE for CICS	n35
IBM Tivoli OMEGAMON XE for z/VM and Linux	n36
OMEGAMON XE for DB2 Performance Monitor	n37
OMEGAMON XE for DB2 Performance Expert	n38
IBM Tivoli OMEGAMON XE for IMS	n39
IBM Tivoli OMEGAMON XE for Mainframe Networks	n40
IBM Tivoli OMEGAMON XE for Messaging on z/OS	n41
IBM Tivoli Performance Modeler for z/OS	n42
IBM Tivoli Workload Scheduler for z/OS	n43
IBM Tivoli AF/OPERATOR	n44
IBM Tivoli AF/Remote	n45

Optimization (select all products to include in analysis)

IBM Tivoli Workload Scheduler	n46
IBM Tivoli Workload Scheduler for Applications	n47
IBM Tivoli Workload Scheduler for Virtual Data Centers	n48
IBM Tivoli Remote Control	n49

IT Financial Management / Software Asset Management (select all products to include in analysis)

IBM Tivoli License Compliance Manager for z/OS	n50
IBM Tivoli License Compliance Manager	n51
IBM Tivoli Usage and Accounting Manager	n52

Provisioning & Orchestration (select all products to include in analysis)

IBM Tivoli Provisioning Manager	n53
IBM Tivoli Intelligent Orchestrator	n54

Notes:

1. IBM Tivoli Business Systems Manager is a true end-to-end solution, which allows customers to integrate availability information from all domains (servers, mainframes, operating systems, networks, middleware, and applications) into line of business (LOB) views that clearly align these resources to the major business functions, which they support. It allows you to utilize the concept of end-to-end business systems management to organize related components and give business context to management decisions.
2. IBM Tivoli Service Level Advisor simplifies defining service offerings according to the terms of service level agreements (SLAs), and associating these services with customers. It then automates validating SLAs, correlating any monitoring metrics stored in a built-in data warehouse. It provides immediate alerts, and historical reports of SLA violations and predicts future breaches.
3. Netcool/Realtime Active Dashboards incorporates data from a broad array of IT resources and business support systems that contribute to defining a service. It gives organizations advanced, real-time visualization of services and processes in a comprehensive service dependency model.
4. IBM Tivoli Enterprise Console is an event management system designed to help maintain peak system performance and availability while reducing support costs. It receives events from hardware, applications and network devices, consolidates these events on a single, customizable console and analyzes the events while responding automatically wherever possible or efficiently guiding staff to the appropriate response.
5. IBM Tivoli NetView discovers TCP/IP networks, displays network topologies, correlates and manages events and SNMP traps, monitors network health, and gathers performance data. Tivoli NetView meets the needs of managers of large networks by providing the scalability and flexibility to manage mission-critical environments.
6. IBM Tivoli(R) Switch Analyzer is a Layer-2 Switch Network Management root-cause component of a comprehensive Network Management Solution. Tivoli Switch Analyzer enables Network Administrators to identify whether a network failure is the problem cause, and allows network administrators to focus resources on resolving problems and not symptoms.
7. IBM Tivoli System Automation for Multiplatforms manages availability of business applications, running in single Linux systems or clusters on zSeries and xSeries, according to customer defined goals.
8. IBM Tivoli Monitoring provides self-healing for essential distributed system resources, to network overloads and potential problems, and to automatically recover from critical situations. Tivoli Monitoring saves system administrators from having to manually scan through extensive performance data in order to determine the problem resolution. Using industry best practices, Tivoli Monitoring can provide immediate value to the enterprise.
9. IBM Tivoli Monitoring Active Directory Option provides an invaluable set of pre-configured, out-of-the-box automated best practices that proactively manage the directory by monitoring essential resources and detecting potential problems. IBM Tivoli Monitoring Active Directory Option also provides seamless integration with other Tivoli Performance and Availability solutions, including the Tivoli Business System Manager and the Tivoli Enterprise Console, providing a true end-to-end solution.
10. IBM Tivoli Monitoring for Applications is a proactive solution to manage your mySAP and Siebel eBusiness applications. It complements the SAP and Siebel Monitoring Architectures and provides in-depth capabilities to monitor and manage your mySAP and Siebel landscapes. Resource models deliver best practices and root-cause analysis around common SAP and Siebel problem situations.
11. IBM Tivoli Monitoring for Databases product includes features that help ensure the availability and optimal performance of IBM DB2, IBM Informix, and Oracle servers and that eliminates the typical database administrator (DBA) dilemma of determining what to monitor, when to monitor and how to interpret and act upon monitored results.
12. IBM Tivoli Monitoring for Microsoft .NET monitors essential resources and detects potential problems to help you proactively manage your Microsoft .NET environment. By leveraging extensive research to identify common problems and weaknesses in the applications being monitored, IBM Tivoli has created a set of "problem signatures," a combination of metrics, and thresholds that trigger the identify, notify and cure problem prevention mechanism in the Tivoli solution. IBM Tivoli Monitoring for Microsoft .NET is a flexible solution designed to provide rapid time to value and ease of use with advanced technology as the foundation for a superior group of monitoring products for Microsoft environments.
13. IBM Tivoli Monitoring for Virtual Servers centrally monitors server virtualization and consolidation resource performance and availability at the enterprise level for efficient and cost-effective IT operations. IBM Tivoli Monitoring for Virtual Servers (VMware and Citrix) allows for quick problem identification, notification and correction, and provides tasks to automate and perform routine operations. This extension of the Tivoli Monitoring family allows you to measure the performance of critical virtual server resources, detect persistent problem indications, identify root cause, correlate events across the business, and understand business impact when problems occur along with baseline service levels of system resources.
14. IBM Tivoli OMEGAMON XE for Messaging (previously named IBM Tivoli OMEGAMON XE for WebSphere Business Integration) monitors and manages the WebSphere MQ and MQI environments. The out-of-the box capabilities of this product provide auto-discovery and monitoring of this complex environment. Additionally, it identifies common problems and automates corrective actions by monitoring key WMQ and WMQI metrics, sends event notification, and provides data collection for real-time and historical data analysis.
15. IBM Tivoli Monitoring for Messaging and Collaboration provides self-healing for IBM Lotus Domino server and Microsoft Exchange resources, to detect network overloads and potential problems, and to automatically recover from critical situations. Tivoli Monitoring for Messaging and Collaboration saves administrators from having to manually scan through extensive performance data in order to determine the problem resolution. Using industry best practices, Tivoli Monitoring for Messaging and Collaboration can provide immediate value to the enterprise.
16. IBM Tivoli Intellivatch (previously named IBM Tivoli Intellivatch for Unix and Windows) provides a performance analysis and activity trends assessment solution that runs seamlessly with IBM Lotus Domino. It provides improved capacity planning, dynamic workload balancing and greater system availability.
17. IBM Tivoli OMEGAMON® XE for Linux manages the performance and availability of the Linux operating system on zSeries, S/390® and Intel platforms. IBM Tivoli OMEGAMON XE for Linux supports the SuSE and Red Hat Linux distributions, 31- and 64-bit support for zSeries platforms, as well as 32-bit support for Intel platforms.
18. Netcool®/Webtop delivers graphical maps, tables and event lists to the remote operator via HTML and Java. It provides operations staff and executives with "anytime, anywhere" access to service status and actionable information.
19. Netcool®/Impact™ manages data across your organization by providing a common platform for ubiquitous data access that easily circumvents traditional organizational boundaries. Armed with data from virtually any data source, administrators can correlate, calculate, enrich, deliver, notify, escalate, visualize and perform a wide range of automated actions.
20. Netcool®/OMNibus™ software delivers real-time, centralized monitoring of complex networks and IT domains. With scalability that exceeds millions of events per day; Netcool/OMNibus offers around-the-clock management and automation to help you deliver continuous uptime of business services and applications; optimize operations costs and efficiency; and improve time to market.
21. Netcool®/Precision for IP Networks™ or Netcool®/PrecisionTransmission Networks™ is designed to help organizations improve network visibility and drive reliability and performance.
22. Netcool®/Proviso® provides a complete view of service quality and usage for both operations and customers, enabling them to proactively avoid, detect and rapidly resolve problems.
23. IBM Tivoli Composite Application Manager for Response Time (previously named IBM Tivoli Monitoring for Web Infrastructure) is part of comprehensive Tivoli application management environment that leverages the benefits of common interfaces, data storage and reporting capabilities. It helps improve availability and optimizes the performance of critical Web server and Web application server resources.
24. IBM Tivoli Composite Application Manager for WebSphere provides an end-to-end view of applications across subsystems. It provides a correlated view of critical transactions that span J2EE, MQ, and legacy environments (CICS, IMS). It saves time through the use of extensive drilldown capabilities to enable real-time problem determination. IBM Tivoli Composite Application Manager for WebSphere uses non-intrusive deployment eliminating the need to modify applications for monitoring. Rapid deployment means faster ROI.
25. IBM Tivoli Composite Application Manager for SOA can monitor, manage and control the Web services layer of IT architectures while drilling down to the application or resource layer to identify the source of bottlenecks or failures and to pinpoint services that take the most time or use the most resources.
26. IBM Tivoli Composite Application Manager for J2EE provides an end-to-end view of applications across web servers, web application servers and subsystems. It provides a correlated view of critical transactions that span J2EE (Including Apache, IIS, SunJava, BEA WebLogic, JBoss, Oracle Application Server, SAP NetWeaver, and Tomcat.), MQ, and legacy environments (CICS, IMS). It saves time through the use of extensive drilldown capabilities to enable real-time problem determination. IBM Tivoli Composite Application Manager for J2EE uses non-intrusive deployment eliminating the need to modify applications for monitoring. Rapid deployment means faster ROI.
27. IBM Tivoli NetView for TCP/IP Performance is an IBM z/OS application that monitors, records, and interactively reports communications network performance and utilization for TCP/IP in a z/OS environment. It provides timely analysis of traffic flow, transit times, and component use needed for network tuning, problem determination, and service level management validation.
28. IBM Tivoli NetView Performance Monitor is a virtual telecommunications access method (VTAM) system application that monitors, records, and interactively reports communications network performance and utilization. It provides the timely analysis of traffic flow, transit times, and component use needed for network tuning and problem determination. It can both send alerts to Tivoli NetView and receive commands from Tivoli NetView for most operations.
29. IBM Tivoli Decision Support for z/OS is a flexible reporting tool that can correlate systems performance data to help improve the economic performance of the IT investment. With its centralized data-store for host and distributed system performance data, it provides easy access to enterprise-wide IT information to help gain valuable

insights for systems management.

30. IBM Output Manager for z/OS transforms data into customized, accessible formats, thus enhancing your ability to respond to current business trends and to make effective strategic decisions. With IBM Output Manager for z/OS, you can specify report attributes, collect report data, split system output into individual reports, perform both online and batch printing jobs for efficient printing and delivery to end users.
31. IBM Tivoli System Automation for z/OS (previously named IBM Tivoli System Automation for OS/390) plays an important role in building the end-to-end autonomic computing solution. The unique functions of Tivoli System Automation for z/OS help customers with single z/OS systems and Parallel Sysplex® clusters to increase availability, ease management and reduce costs.
32. IBM Tivoli OMEGAMON XE on z/OS is a leading real-time performance monitor for the core operating system of z/OS. It gives a coherent overview of all elements of z/OS performance, as well as detailed views of important underlying resources from CPU to DASD. It includes complete support for Workload Manager Goal Mode and built-in capabilities to proactively resolve potentially dangerous performance conditions in z/OS. It extends management to the Parallel Sysplex® environment.

OMEGAMON XE on z/OS also includes detailed views of analysis of Unix System Services running as a key workload on z/OS that enables TCP/IP for z/OS as well as the enabling component for other z/OS workloads such as WebSphere Application Server, SAP on z/OS and more. Analysis of the Crypto-graphic Co-Processor is also included.

33. IBM Tivoli OMEGAMON XE for z/Linux (previously named IBM Tivoli OMEGAMON XE for Linux on z/OS) lets you manage consolidated servers from a single point of control to increase availability and control costs. You can view Linux applications – and their interaction with mainframe and distributed systems – on a single screen. Detailed metrics and side-by-side comparisons of applications provide the insight you need to tune for higher availability. The solution also boosts staff productivity by letting you quickly and intuitively drill down to the source of the poor performance.
34. IBM Tivoli OMEGAMON DE provides a common user interface for all OMEGAMON products and has the ability to integrate information from other management data sources into a portal interface and provides the ability for users to create management dashboards for all aspects of systems and application monitoring.
35. IBM Tivoli OMEGAMON XE for CICS is the next evolution in IBM Tivoli OMEGAMON performance and availability solutions. With a flexible, easy-to-use browser interface, it helps you clearly see and understand application and system events. You can monitor and manage CICS transactions at the big picture and granular levels, as well as interaction with other applications, within a single interface. It enables you to detect problems quickly and take action in real time to speed problem resolution in a single or Parallel Sysplex environment.
36. IBM Tivoli OMEGAMON XE for z/VM and Linux lets you manage both Linux running on z/VM and z/VM itself in an integrated fashion. Views of multiple z/VM Virtual Machines (whether or not running Linux) and the z/VM operating system provide a single point of control to increase availability and control costs. You can view Linux applications – and their interaction with mainframe and distributed systems – on a single screen. Detailed metrics and side-by-side comparisons of applications provide the insight you need to tune for higher availability. The solution also boosts staff productivity by letting you quickly and intuitively drill down to the source of the poor performance.
37. OMEGAMON XE for DB2 Performance Monitor (previously named IBM Tivoli OMEGAMON XE for DB2 on z/OS) is the next evolution in OMEGAMON performance and availability solutions to help you proactively manage your DB2 mainframe environment and tune for optimal performance. Its Web interface provides a single interface at the big picture and granular levels, including interaction between DB2 and other applications. OMEGAMON XE for DB2 Performance Monitor adds additional buffer pool analysis help you identify performance spikes and anomalies that might otherwise go unseen, take action in real time and automate repetitive DB2 operations.
38. OMEGAMON XE for DB2 for Performance Expert is the next evolution in OMEGAMON performance and availability solutions to help you proactively manage your DB2 mainframe environment and tune for optimal performance. Its Web interface provides a single interface at the big picture and granular levels, including interaction between DB2 and other applications. OMEGAMON XE for DB2 for Performance Expert adds additional buffer pool analysis help you identify performance spikes and anomalies that might otherwise go unseen, take action in real time and automate repetitive DB2 operations.
39. IBM Tivoli OMEGAMON XE for IMS provides a flexible, customizable, easy-to-use browser interface to help you clearly see and understand application and system events within IBM's premier transaction and hierarchical database management system. It provides a single point of control to leverage detailed metrics of CPU, I/O, and storage resource use to maximize performance and minimize downtime of your vital IMS systems. It extends IMS management to the Parallel Sysplex environment.
40. IBM Tivoli OMEGAMON XE for Mainframe Networks is designed to analyze TCP/IP performance among CICS®, DB2®, IMS and other key systems to identify resource loss and unstable connections. The power to monitor the end-user experience lets you fine-tune TCP/IP performance before application stakeholders and customers complain. And users migrating from VTAM to TCP/IP can easily manage both protocols from a single browser interface.
41. IBM Tivoli OMEGAMON® XE for Messaging on z/OS® is a powerful systems management tool set for monitoring and configuring IBM WebSphere MQ. It delivers a clear view of your messaging environment, empowering you to respond to performance and availability problems before they affect end users. It allows you to quickly resolve performance bottlenecks by directly configuring queue managers and resources, customize predefined situations to your business objectives, easily create prototypes for WebSphere MQ objects.

With integrated support for WebSphere Message Broker. IBM Tivoli OMEGAMON® XE for Messaging on z/OS® is a powerful performance-monitoring solution that presents a single integrated view of your entire messaging environment for end-to-end control of all your middleware applications. Helps operators keep track of accounting statistics of the broker, Early-warning indicators link operators to specific performance metrics and charts. Automated corrective actions kick in to minimize downtime and lost revenue.

42. The Tivoli Performance Modeler for z/OS can model the performance characteristics for workloads on your z/OS mainframe computer. Systems programmers or operations professionals can use the performance modeling - or capacity planning - tools to simulate the actual performance behavior of the mainframe computer.
43. IBM Tivoli Workload Scheduler for z/OS provides leading-edge solutions to problems in production workload management. It can automate, plan, and control the processing of your enterprise's entire production workload, not just the batch subset.
44. IBM Tivoli AF/OPERATOR is a robust console automation solution that helps protect your z/OS® environment by reducing human error and increasing control over system resources. It ensures timely completion of repetitive tasks and quick response to system events, without the need for human intervention.
45. IBM Tivoli AF/Remote® is an outboard automation solution for secure remote access to mainframe and distributed systems regardless of location. IBM Tivoli AF/Remote also provides automatic notification and escalation of problems via email and wireless devices. As an outboard solution, IBM Tivoli AF/Remote can integrate monitoring and automation packages and frameworks, while also automating tasks that can't be initiated by a z/OS-based system itself.
46. 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.
47. IBM Tivoli Workload Scheduler for Applications integrates the highly sophisticated scheduling features of IBM Tivoli Workload Scheduler to e-Business application environments. The product leverages the built in workload capabilities of Oracle e-Business Suite, PeopleSoft 8, SAP R/3 and SAP Business Warehouse. It allows you to manage enterprise scheduling with common policies, from a single point of control.
48. IBM Tivoli Workload Scheduler for Virtual Data Centers integrates the highly sophisticated scheduling features of IBM Tivoli Workload Scheduler with efficient and scalable grid computing environments. The product integrates with IBM LoadLeveler to allow you to manage job scheduling with common policies, from a single point of control.
49. IBM Tivoli Remote Control is an enterprise-scale solution for remote desktop management. Tivoli Remote Control allows IT to centrally support thousands of workstations using secure and reliable policy-based management, enabling rapid repair of critical employee resources. IBM Tivoli Remote Control enables corporate IT to ensure productive use of computing resources while minimizing support costs.
50. IBM Tivoli(R) License Compliance Manager for z/OS identifies software inventory and use activity to help manage software costs and contract compliance in the mainframe environment. This software asset management solution enables IT to align software spending with business priorities. With the information provided, organizations can reduce unnecessary software costs and compliance risk to allocate additional resources to priority projects.
51. IBM Tivoli License Compliance Manager (previously named IBM Tivoli License Manager) is a comprehensive software license management solution. It is designed to provide the key information about software that is installed and used in your environment, to assist with compliance tracking, and to help minimize software cost.
52. IBM Tivoli Usage and Accounting Manager is a flexible usage metering, accounting and reporting tool that can collect and correlate IT resource usage data and IT financial data to provide an understanding of IT costs. ITUAM provides the following benefits: accurate billing based on real usage, improved services due to accountability and improved alignment between business and IT costs. ITUAM leads to continued infrastructure improvement by providing usage comparisons which can lead to more effective investments as well as cost understanding which can lead to cost management. With its centralized data-store for host and distributed system usage and accounting data, it provides easy access to enterprise-wide IT information to help gain valuable insights for IT financial management.
53. IBM Tivoli Provisioning Manager offers an ideal automated provisioning solution for organizations that seek to ensure continuous availability and performance of their applications. Automating the execution of your best practice processes, IBM Tivoli Provisioning Manager enables organizations to perform consistent, error-free infrastructure deployments. With IBM Tivoli Provisioning Manager, building or altering standardized configurations takes minutes instead of days.
54. IBM Tivoli Intelligent ThinkDynamic Orchestrator offers a capacity on demand solution that is ideal for organizations that seek to maintain a high quality of service without the costly deployment of redundant capacity for every application. It allows you to meet end-user demand and specified service-level objectives consistently and affordably by repurposing and reallocating existing, underutilized computing resources to applications in need.
55. IBM Tivoli Provisioning Manager for Software (previously named IBM Tivoli Configuration Manager) can help you gain total control over your enterprise software and hardware. Its software distribution module can give you the ability to rapidly and efficiently deploy complex mission-critical applications to multiple locations from a central

ROI Analyst™

point. After systems have been deployed, the inventory module lets you automatically scan for and collect hardware and software configuration information from computer systems across your enterprise.

56. IBM Tivoli Application Dependency Discovery Manager (TADDM) automatically discovers an Enterprise's IT resources and their dependencies, helping companies understand their IT infrastructure and keep it updated, thus enabling a robust Configuration Management strategy. It also enables compliance of Change Management processes by informing IT what has or has not actually changed within the environment.

Appendix C: Benefit Details

Increased Availability - Automation

Tivoli automation solutions provide substantial benefits to organizations in proactively and reactively eliminating costly unplanned downtime and the business impact of such incidents. This section quantifies the current downtime experiences and business impact for business systems and applications being managed by the automated solutions, and then estimates the improvements derived from the automated solutions in eliminating downtime and downtime risks.

Cumulative Benefits (5 - Year): Can\$6,150,263
 Organization financial benefit type: Revenue or Equivalent
 Values map to benefit class: Indirect Benefits
 Goal: Improve IT System Availability / Service Levels
 Stakeholder: Information Technology - IT

Applications / Systems	Annual Operating Hours	Availability	Annual Downtime Hours	Business Loss per Hour	Loss per Downtime Hour	Current Annual Losses	Included?
Overall	8,736.00	99.500%	43.68	Can\$33,007	100.0%	Can\$1,441,755	Included
	8,736.00	99.500%	43.68	Can\$477,501	100.0%	Can\$20,857,228	Included
	8,736.00	99.500%	43.68	Can\$0	100.0%	Can\$0	Excluded
	8,736.00	99.500%	43.68	Can\$0	100.0%	Can\$0	Excluded
	8,736.00	99.500%	43.68	Can\$0	100.0%	Can\$0	Excluded
	8,736.00	99.500%	43.68	Can\$0	100.0%	Can\$0	Excluded
	8,736.00	99.500%	43.68	Can\$0	100.0%	Can\$0	Excluded
Total						Can\$22,298,983	

Increased Availability	As Is	Benefits with Tivoli	To Be
Overall	Can\$1,441,755	33.6%	Can\$957,326
	Can\$20,857,228	33.6%	Can\$13,849,200
	Can\$0	33.6%	Can\$0
	Can\$0	33.6%	Can\$0
	Can\$0	33.6%	Can\$0
	Can\$0	33.6%	Can\$0
	Can\$0	33.6%	Can\$0
Annual cost of downtime	Can\$22,298,983	Can\$7,492,458	Can\$14,806,526
Margin	27.3%		27.3%
Annual margin cost	Can\$6,087,623	Can\$2,045,442	Can\$4,042,181

Increased Availability	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue impact	Can\$7,492,458	Can\$8,616,326	Can\$9,908,775	Can\$11,395,091	Can\$13,104,354
Incremental margin contribution	Can\$2,045,442	Can\$2,352,258	Can\$2,705,097	Can\$3,110,861	Can\$3,577,491

KPIs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Total automation application / system availability	99.500%	99.668%	99.668%	99.668%	99.668%	99.668%

Estimated annual increase in downtime impact per minute 15.0%

Notes:

- The annual downtime hours is based upon the current system operating hours, which can be specified individually per application. The loss per downtime hour is the impact to the organization of an hour of downtime for the application. Can be greater or less than 100% depending upon type of application or system and the business dependency on it.
- Availability risk mitigation quantifies the potential impact of Tivoli's automation solutions in mitigating downtime risks and minimizing impact when issues occur. For each of the selected products, a savings is estimated, illustrating the impact on reducing availability issues and downtime losses when incidents occur. Some of the benefits are attributable to preventing issues prior to them having an impact, while others help to find and repair issues when they occur, prioritizing the most serious issues, and helping to understand and minimize business impact. These initial estimates should be reviewed and replaced with your actual estimates. Savings can be increased to highlight that better than expected savings can be derived from the proposed solution. This can be because current practices are lower than average, and/or the current costs are higher than average. As well, the expected savings can be lower than average due to the company's current capability and maturity level being higher than average, resulting in less opportunity for savings.
- The annual revenue benefits of increased availability.
- The annual margin benefits of increased availability.
- Used to scale the impact of availability over time. As the business revenue grows, salaries increase, and reliance on applications increases, typically, the impact of any downtime issues increases as well. This increase can be reflected here, increasing the impact of downtime over each year of the analysis period, using compound annual growth applied to each business system, application or system. The growth is applied to years beyond year 1 in the analysis.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Incremental Revenue or Equivalent					
Worksheet / Ideal Benefit	Can\$7,492,458	Can\$8,616,326	Can\$9,908,775	Can\$11,395,091	Can\$13,104,354
Q1	Can\$0.00	Can\$936,557.20	Can\$1,077,040.74	Can\$1,238,596.87	Can\$1,424,386.40
Q2	Can\$312,185.73	Can\$983,385.05	Can\$1,130,892.79	Can\$1,300,526.71	Can\$1,495,605.70
Q3	Can\$936,557.20	Can\$1,077,040.74	Can\$1,238,596.87	Can\$1,424,386.40	Can\$1,638,044.31
Q4	Can\$936,557.20	Can\$1,077,040.74	Can\$1,238,596.87	Can\$1,424,386.40	Can\$1,638,044.31
Realized Total	Can\$2,185,300	Can\$4,074,024	Can\$4,685,127	Can\$5,387,896	Can\$6,196,081
Net Contribution: Incremental Revenue or Equivalent					
Worksheet / Ideal Benefit	Can\$2,045,442	Can\$2,352,258	Can\$2,705,097	Can\$3,110,861	Can\$3,577,491

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Q1	Can\$0.00	Can\$255,680.20	Can\$294,032.21	Can\$338,137.10	Can\$388,857.62
Q2	Can\$85,226.73	Can\$268,464.21	Can\$308,733.84	Can\$355,043.94	Can\$408,300.52
Q3	Can\$255,680.20	Can\$294,032.21	Can\$338,137.10	Can\$388,857.62	Can\$447,186.31
Q4	Can\$255,680.20	Can\$294,032.21	Can\$338,137.10	Can\$388,857.62	Can\$447,186.31
Realized Total	Can\$596,587	Can\$1,112,209	Can\$1,279,040	Can\$1,470,896	Can\$1,691,531

Key Performance Indicators	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal KPIs						
Total automation application / system availability	99.500%	99.668%	99.668%	99.668%	99.668%	99.668%
Realized KPIs						
Total automation application / system availability	99.500%	99.549%	99.584%	99.584%	99.584%	99.584%

IT Operations Labor Savings - Automation

Quantifies the potential reduction or re-allocation of staff resources, or outsourced equivalents, now performing on demand IT operational tasks listed below. These tasks may derive benefit by the selected Tivoli solution.

Cumulative Benefits (5 - Year): Can\$2,416,281
 Organization financial benefit type: Operating Expense (Allocated)
 Values map to benefit class: Direct Benefits
 Goal: Improve IT Staff Efficiency / Productivity
 Stakeholder: Information Technology - IT

IT Operations Staff	Benefits with Tivoli
Business systems management	17.6%
Database management	25.3%
Application administration	17.6%
Web management	12.1%
Messaging management	12.1%
Systems management	35.0%
Network management	21.5%
Software distribution and control	3.3%
Asset management	0.0%
Job scheduling	4.4%
Provisioning management	0.0%
Capacity and performance mgmt	8.8%
Incident and problem management	34.1%
Non incident event handling	0.0%
Service level management	11.0%
Change management	0.0%
Budgeting and accounting / chargeback	0.0%
IT compliance management and reporting	0.0%
IT training and learning	6.6%
Other (specify)	0.0%
Annual best practice impact on labor	10.0%

n1

n2

Annual Labor Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Current FTEs	15.25	15.25	15.25	15.25	15.25
Total current cost	Can\$2,159,417	Can\$2,245,794	Can\$2,335,626	Can\$2,429,047	Can\$2,526,209
Total FTE savings	2.96	3.25	3.57	3.91	4.32
Total FTEs w/ Tivoli	12.29	12.00	11.68	11.34	10.93
Cost avoidance	Can\$406,077	Can\$464,509	Can\$531,725	Can\$608,109	Can\$695,762

KPIs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Average number of servers managed per staff FTE	11.0	13.6	13.9	14.3	14.7	15.3

n3

Year 1 Labor Savings	Current FTEs	Burdened Salary	Total Current Cost	Savings with Tivoli	Cost Savings with Tivoli	FTE Savings with Tivoli
Business systems management	0.50	Can\$175,437	Can\$87,719	17.6%	Can\$15,438	0.09
Database management	2.00	Can\$170,276	Can\$340,551	25.3%	Can\$86,160	0.51
Application administration	1.00	Can\$170,276	Can\$170,276	17.6%	Can\$29,968	0.18
Web management	1.00	Can\$170,276	Can\$170,276	12.1%	Can\$20,603	0.12
Messaging management	0.00	Can\$162,021	Can\$0	12.1%	Can\$0	0.00
Systems management	2.00	Can\$154,797	Can\$309,594	35.0%	Can\$108,358	0.70
Network management	1.00	Can\$154,797	Can\$154,797	21.5%	Can\$33,282	0.22
Software distribution and control	0.50	Can\$144,477	Can\$72,239	3.3%	Can\$2,384	0.02
Asset management	1.00	Can\$144,477	Can\$144,477	0.0%	Can\$0	0.00
Job scheduling	1.00	Can\$144,477	Can\$144,477	4.4%	Can\$6,357	0.04
Provisioning management	0.25	Can\$154,797	Can\$38,699	0.0%	Can\$0	0.00
Capacity and performance mgmt	0.00	Can\$155,880	Can\$0	8.8%	Can\$0	0.00
Incident and problem management	3.00	Can\$92,879	Can\$278,637	34.1%	Can\$95,015	1.02
Non incident event handling	1.00	Can\$92,879	Can\$92,879	0.0%	Can\$0	0.00
Service level management	0.50	Can\$154,797	Can\$77,399	11.0%	Can\$8,513	0.06

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Change management	0.50	Can\$154,797	Can\$77,399	0.0%	Can\$0	0.00
Budgeting and accounting / chargeback	0.00	Can\$154,797	Can\$0	0.0%	Can\$0	0.00
IT compliance management and reporting	0.00	Can\$163,053	Can\$0	0.0%	Can\$0	0.00
IT training and learning	0.00	Can\$123,837	Can\$0	6.6%	Can\$0	0.00
Other (specify)	0.00	Can\$154,797	Can\$0	0.0%	Can\$0	0.00
Total	15.25		Can\$2,159,417		Can\$406,077	2.96

Year 2 Labor Savings	Current FTEs	Burdened Salary	Total Current Cost	Savings with Tivoli	Cost Savings with Tivoli	FTE Savings with Tivoli
Business systems management	0.50	Can\$182,454	Can\$91,227	19.4%	Can\$17,698	0.10
Database management	2.00	Can\$177,087	Can\$354,174	27.8%	Can\$98,461	0.56
Application administration	1.00	Can\$177,087	Can\$177,087	19.4%	Can\$34,355	0.19
Web management	1.00	Can\$177,087	Can\$177,087	13.3%	Can\$23,553	0.13
Messaging management	0.00	Can\$168,502	Can\$0	13.3%	Can\$0	0.00
Systems management	2.00	Can\$160,988	Can\$321,977	38.5%	Can\$123,961	0.77
Network management	1.00	Can\$160,988	Can\$160,988	23.7%	Can\$38,154	0.24
Software distribution and control	0.50	Can\$150,256	Can\$75,128	3.6%	Can\$2,705	0.02
Asset management	1.00	Can\$150,256	Can\$150,256	0.0%	Can\$0	0.00
Job scheduling	1.00	Can\$150,256	Can\$150,256	4.8%	Can\$7,212	0.05
Provisioning management	0.25	Can\$160,988	Can\$40,247	0.0%	Can\$0	0.00
Capacity and performance mgmt	0.00	Can\$162,115	Can\$0	9.7%	Can\$0	0.00
Incident and problem management	3.00	Can\$96,594	Can\$289,783	37.5%	Can\$108,669	1.13
Non incident event handling	1.00	Can\$96,594	Can\$96,594	0.0%	Can\$0	0.00
Service level management	0.50	Can\$160,988	Can\$80,495	12.1%	Can\$9,740	0.06
Change management	0.50	Can\$160,988	Can\$80,495	0.0%	Can\$0	0.00
Budgeting and accounting / chargeback	0.00	Can\$160,988	Can\$0	0.0%	Can\$0	0.00
IT compliance management and reporting	0.00	Can\$169,574	Can\$0	0.0%	Can\$0	0.00
IT training and learning	0.00	Can\$128,790	Can\$0	7.3%	Can\$0	0.00
Other (specify)	0.00	Can\$160,988	Can\$0	0.0%	Can\$0	0.00
Total	15.25		Can\$2,245,794		Can\$464,509	3.25

Year 3 Labor Savings	Current FTEs	Burdened Salary	Total Current Cost	Savings with Tivoli	Cost Savings with Tivoli	FTE Savings with Tivoli
Business systems management	0.50	Can\$189,752	Can\$94,876	21.3%	Can\$20,208	0.11
Database management	2.00	Can\$184,171	Can\$368,342	30.6%	Can\$112,713	0.61
Application administration	1.00	Can\$184,171	Can\$184,171	21.3%	Can\$39,229	0.21
Web management	1.00	Can\$184,171	Can\$184,171	14.6%	Can\$26,889	0.15
Messaging management	0.00	Can\$175,242	Can\$0	14.6%	Can\$0	0.00
Systems management	2.00	Can\$167,428	Can\$334,855	42.4%	Can\$141,979	0.85
Network management	1.00	Can\$167,428	Can\$167,428	26.1%	Can\$43,698	0.26
Software distribution and control	0.50	Can\$156,266	Can\$78,133	4.0%	Can\$3,126	0.02
Asset management	1.00	Can\$156,266	Can\$156,266	0.0%	Can\$0	0.00
Job scheduling	1.00	Can\$156,266	Can\$156,266	5.3%	Can\$8,282	0.05
Provisioning management	0.25	Can\$167,428	Can\$41,857	0.0%	Can\$0	0.00
Capacity and performance mgmt	0.00	Can\$168,601	Can\$0	10.7%	Can\$0	0.00
Incident and problem management	3.00	Can\$100,458	Can\$301,375	41.3%	Can\$124,468	1.24
Non incident event handling	1.00	Can\$100,458	Can\$100,458	0.0%	Can\$0	0.00
Service level management	0.50	Can\$167,428	Can\$83,714	13.3%	Can\$11,134	0.07
Change management	0.50	Can\$167,428	Can\$83,714	0.0%	Can\$0	0.00
Budgeting and accounting / chargeback	0.00	Can\$167,428	Can\$0	0.0%	Can\$0	0.00
IT compliance management and reporting	0.00	Can\$176,357	Can\$0	0.0%	Can\$0	0.00
IT training and learning	0.00	Can\$133,942	Can\$0	8.0%	Can\$0	0.00
Other (specify)	0.00	Can\$167,428	Can\$0	0.0%	Can\$0	0.00
Total	15.25		Can\$2,335,626		Can\$531,725	3.57

Year 4 Labor Savings	Current FTEs	Burdened Salary	Total Current Cost	Savings with Tivoli	Cost Savings with Tivoli	FTE Savings with Tivoli
Business systems management	0.50	Can\$197,342	Can\$98,672	23.4%	Can\$23,089	0.12
Database management	2.00	Can\$191,537	Can\$383,075	33.7%	Can\$129,096	0.67
Application administration	1.00	Can\$191,537	Can\$191,537	23.4%	Can\$44,819	0.23
Web management	1.00	Can\$191,537	Can\$191,537	16.1%	Can\$30,838	0.16
Messaging management	0.00	Can\$182,251	Can\$0	16.1%	Can\$0	0.00
Systems management	2.00	Can\$174,125	Can\$348,249	46.6%	Can\$162,285	0.93
Network management	1.00	Can\$174,125	Can\$174,125	28.7%	Can\$49,973	0.29
Software distribution and control	0.50	Can\$162,516	Can\$81,259	4.4%	Can\$3,575	0.02
Asset management	1.00	Can\$162,516	Can\$162,516	0.0%	Can\$0	0.00
Job scheduling	1.00	Can\$162,516	Can\$162,516	5.8%	Can\$9,426	0.06
Provisioning management	0.25	Can\$174,125	Can\$43,531	0.0%	Can\$0	0.00
Capacity and performance mgmt	0.00	Can\$175,344	Can\$0	11.8%	Can\$0	0.00
Incident and problem management	3.00	Can\$104,476	Can\$313,428	45.4%	Can\$142,296	1.36
Non incident event handling	1.00	Can\$104,476	Can\$104,476	0.0%	Can\$0	0.00
Service level management	0.50	Can\$174,125	Can\$87,062	14.6%	Can\$12,711	0.07
Change management	0.50	Can\$174,125	Can\$87,062	0.0%	Can\$0	0.00
Budgeting and accounting / chargeback	0.00	Can\$174,125	Can\$0	0.0%	Can\$0	0.00
IT compliance management and reporting	0.00	Can\$183,411	Can\$0	0.0%	Can\$0	0.00
IT training and learning	0.00	Can\$139,300	Can\$0	8.8%	Can\$0	0.00
Other (specify)	0.00	Can\$174,125	Can\$0	0.0%	Can\$0	0.00
Total	15.25		Can\$2,429,047		Can\$608,109	3.91

Year 5 Labor Savings	Current FTEs	Burdened Salary	Total Current Cost	Savings with Tivoli	Cost Savings with Tivoli	FTE Savings with Tivoli
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Business systems management	0.50	Can\$205,236	Can\$102,618	25.7%	Can\$26,373	0.13
Database management	2.00	Can\$199,199	Can\$398,399	37.1%	Can\$147,806	0.74
Application administration	1.00	Can\$199,199	Can\$199,199	25.7%	Can\$51,194	0.26
Web management	1.00	Can\$199,199	Can\$199,199	17.7%	Can\$35,258	0.18
Messaging management	0.00	Can\$189,541	Can\$0	17.7%	Can\$0	0.00
Systems management	2.00	Can\$181,089	Can\$362,178	51.3%	Can\$185,797	1.03
Network management	1.00	Can\$181,089	Can\$181,089	31.6%	Can\$57,224	0.32
Software distribution and control	0.50	Can\$169,017	Can\$84,509	4.8%	Can\$4,057	0.02
Asset management	1.00	Can\$169,017	Can\$169,017	0.0%	Can\$0	0.00
Job scheduling	1.00	Can\$169,017	Can\$169,017	6.4%	Can\$10,817	0.06
Provisioning management	0.25	Can\$181,089	Can\$45,272	0.0%	Can\$0	0.00
Capacity and performance mgmt	0.00	Can\$182,357	Can\$0	13.0%	Can\$0	0.00
Incident and problem management	3.00	Can\$108,655	Can\$325,966	49.9%	Can\$162,657	1.50
Non incident event handling	1.00	Can\$108,655	Can\$108,655	0.0%	Can\$0	0.00
Service level management	0.50	Can\$181,089	Can\$90,545	16.1%	Can\$14,578	0.08
Change management	0.50	Can\$181,089	Can\$90,545	0.0%	Can\$0	0.00
Budgeting and accounting / chargeback	0.00	Can\$181,089	Can\$0	0.0%	Can\$0	0.00
IT compliance management and reporting	0.00	Can\$190,748	Can\$0	0.0%	Can\$0	0.00
IT training and learning	0.00	Can\$144,872	Can\$0	9.7%	Can\$0	0.00
Other (specify)	0.00	Can\$181,089	Can\$0	0.0%	Can\$0	0.00
Total	15.25		Can\$2,526,209		Can\$695,762	4.32

Notes:

1. The selected Tivoli solution set is expected to drive these savings against the current labor costs to manage key business systems. These estimates are based on industry estimates, applying the best practices available from the proposed Tivoli management solution against the current practices and cost of ownership.
2. Estimates the annual improvement due to automation in the organization by implementing an IBM Tivoli solution.
3. Average number of servers managed per IT Operations staff FTE - and improvement with Tivoli automation solutions.
4. FTEs and Burdened Salary are scaled in year 2 based upon average annual growth in FTEs and average annual increase in salaries, specified in the questionnaire. Savings with Tivoli are scaled up in year 2 to account for an annual best practice improvement on labor, but set not to exceed estimated savings limits in place.
5. FTEs and Burdened Salary are scaled in year 3 based upon average annual growth in FTEs and average annual increase in salaries, specified in the questionnaire. Savings with Tivoli are scaled up in year 3 to account for an annual best practice improvement on labor, but set not to exceed estimated savings limits in place.
6. FTEs and Burdened Salary are scaled in year 4 based upon average annual growth in FTEs and average annual increase in salaries, specified in the questionnaire. Savings with Tivoli are scaled up in year 4 to account for an annual best practice improvement on labor, but set not to exceed estimated savings limits in place.
7. FTEs and Burdened Salary are scaled in year 5 based upon average annual growth in FTEs and average annual increase in salaries, specified in the questionnaire. Savings with Tivoli are scaled up in year 5 to account for an annual best practice improvement on labor, but set not to exceed estimated savings limits in place.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	Can\$406,077	Can\$464,509	Can\$531,725	Can\$608,109	Can\$695,762
Q1	Can\$0.00	Can\$101,519.37	Can\$116,127.16	Can\$132,931.20	Can\$152,027.25
Q2	Can\$33,839.79	Can\$106,388.63	Can\$121,728.51	Can\$139,296.55	Can\$159,331.68
Q3	Can\$101,519.37	Can\$116,127.16	Can\$132,931.20	Can\$152,027.25	Can\$173,940.55
Q4	Can\$101,519.37	Can\$116,127.16	Can\$132,931.20	Can\$152,027.25	Can\$173,940.55
Realized Total Benefits	Can\$236,879	Can\$440,162	Can\$503,718	Can\$576,282	Can\$659,240

IT FTE Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	2.96	3.25	3.57	3.91	4.32
Q1	0.00	0.74	0.81	0.89	0.98
Q2	0.25	0.76	0.84	0.92	1.01
Q3	0.74	0.81	0.89	0.98	1.08
Q4	0.74	0.81	0.89	0.98	1.08
Realized Total Benefits	1.73	3.13	3.44	3.77	4.15

Key Performance Indicators	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal KPIs						
Average number of servers managed per staff FTE	11.0	13.6	13.9	14.3	14.7	15.3
Realized KPIs						
Average number of servers managed per staff FTE	11.0	12.5	13.8	14.1	14.5	15.1

Software Purchase Avoidance / Overspend

Software purchase avoidance can occur with reduced hardware purchases (resulting in reduced software purchases) or better reallocation of existing software licenses. These plans are specified here for the successive years of the analysis. Also quantified are the potential savings in software licensing overspending as a result of IBM Tivoli solutions.

Cumulative Benefits (5 - Year): Can\$158,893
 Organization financial benefit type: Net Fixed Assets (NFA - Cumulative)
 Values map to benefit class: Direct Benefits
 Goal: Reduce IT Infrastructure Costs
 Stakeholder: Information Technology - IT

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Software Purchase Avoidance / Overspend	As Is	Benefits with Tivoli	To Be
Annual server software purchases	Can\$500,000	5.5%	Can\$472,500 n1
Total server software savings		Can\$27,500	
Average annual overspend on software licenses	8.00%	5.5%	7.56% n2
Total annual overspend (calculated based upon annual server software purchases)	Can\$40,000	Can\$4,279	Can\$35,721
Total savings (server software purchase savings + overspend savings)		Can\$31,779	

Software Purchase Avoidance / Overspend	Year 1	Year 2	Year 3	Year 4	Year 5
Ideal benefit	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779 n3

Annual benefit growth (starting in year 2) 0.0% n4

- Notes:**
- By reducing hardware requirements and better reallocation of software license, IBM Tivoli automation software can lower overall software purchases.
 - The current software purchase avoidance quantifies the estimated savings that are derived from the IBM Tivoli solutions. The savings are estimated, illustrating the impact on reducing or eliminating software license overspend. These initial estimates should be reviewed and replaced with your actual estimates. Savings can be increased to highlight that better than expected savings can be derived from the proposed solution. This can be because current practices are lower than average, and/or the current costs are higher than average. As well, the expected savings can be lower than average due to the company's current capability and maturity level being higher than average, resulting in less opportunity for savings.
 - The annual software purchase avoidance with the specified Tivoli solution(s).
 - Used to calculate annual benefits in ongoing years of the analysis.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779
Q1	Can\$0.00	Can\$31,778.66	Can\$31,778.66	Can\$31,778.66	Can\$31,778.66
Q2	Can\$31,778.79	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q3	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q4	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Realized Total Benefits	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779	Can\$31,779

Options (Residual Value) - Automation

With Tivoli solutions you are buying an extensible framework and business impact management tool, even though you may today only be solving a handful of issues with a specific set of Tivoli tools. Part of the investment in the Tivoli business impact management framework is that the toolset is fully scalable and extensible, where as with point solutions little can be done to extend the functionality, or build upon it to solve other issues. As a result, any Tivoli implementation has residual value, whereby the initial investment is creating substantial options to add additional solutions to help manage the entire enterprise.

Cumulative Benefits (5 - Year): Can\$132,200
 Organization financial benefit type: Operating Expense (Annualized)
 Values map to benefit class: Indirect Benefits
 Goal: Other
 Stakeholder: Information Technology - IT

Time frame for analysis (analysis period) 3-year n1
 Initial Tivoli investment (licensing cost) Can\$881,332
 Estimated remaining value of initial Tivoli investment at end of analysis period 30.0% n2
 Options value at end of analysis period Can\$264,400

Options (Residual Value)	Year 1	Year 2	Year 3	Year 4	Year 5
Ideal benefit	Can\$0	Can\$0	Can\$264,400	Can\$0	Can\$0

- Notes:**
- Specifies the time frame for the analysis, used to determine the default value of the Tivoli software at the end of period.
 - At the end of the analysis period, it is estimated that the initial investment in Tivoli still has 30% of its residual value remaining, allowing the organization to continue to build upon the framework and utilize the valuable core functions such as the data warehouse.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	Can\$0	Can\$0	Can\$264,400	Can\$0	Can\$0
Q1	Can\$0.00	Can\$0.00	Can\$132,200.03	Can\$0.00	Can\$0.00
Q2	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q3	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q4	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Realized Total Benefits	Can\$0	Can\$0	Can\$132,200	Can\$0	Can\$0

Informal Support Savings

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Informal Support quantifies the current hidden cost of IT users supporting each other in lieu of seeking help from formal service resources. Peer support is on average four times more costly than formal support, and peer support is high in many organizations due to the high number of issues requiring service, service level issues with the service desk, and cultural bias (source: Alinean).

Cumulative Benefits (5 - Year): Can\$30,298
 Organization financial benefit type: Operating Expense (Allocated)
 Values map to benefit class: Indirect Benefits
 Goal: Improve Employee Productivity and Collaboration
 Stakeholder: Enterprise-wide Target User Population

Informal Support Savings	As Is	Benefits with Tivoli	To Be
Number of internal users	1,071		1,071
Informal support (hours per user per month)	1.10	2.2%	1.08
Total annual informal support person hours	14,137		13,880
Average annual burdened rate salary for internal users	Can\$49.61		Can\$49.61
Total productivity cost	Can\$701,341	Can\$12,749	Can\$688,592

Informal Support Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Staff cost improvement	Can\$12,749	Can\$13,004	Can\$13,264	Can\$13,529	Can\$13,800
Staff FTE improvement	0.14	0.14	0.14	0.14	0.14

Annual benefit growth (starting in year 2)

2.0%

Notes:

- The informal support savings quantifies the estimated savings that are derived from the selected set of Tivoli optimization solutions. For each of the selected products a savings is estimated, illustrating the impact on reducing end user operations. Some of the benefits are attributable to preventing issues prior to them having an impact, while others help to restore confidence in the formal support channels and customer satisfaction. These initial estimates should be reviewed and replaced with your actual estimates. Savings can be increased to highlight that better than expected savings can be derived from the proposed solution. This can be because current practices are lower than average, and/or the current costs are higher than average. As well, the expected savings can be lower than average due to the company's current capability and maturity level being higher than average, resulting in less opportunity for savings. Adjustments to the defaults should be documented.
- The average annual savings in the productivity cost of users supporting themselves or others in lieu of seeking help from formal service resources.
- The average annual equivalent staff savings as a result of reduced informal (or self) support.
- Used to calculate annual benefits in ongoing years of the analysis. Default is the average of the estimated user growth and the average annual increase in annual salaries.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	Can\$12,749	Can\$13,004	Can\$13,264	Can\$13,529	Can\$13,800
Q1	Can\$0.00	Can\$1,593.66	Can\$1,625.49	Can\$1,657.95	Can\$1,691.15
Q2	Can\$531.22	Can\$1,604.27	Can\$1,636.31	Can\$1,669.01	Can\$1,702.42
Q3	Can\$1,593.66	Can\$1,625.49	Can\$1,657.95	Can\$1,691.15	Can\$1,724.97
Q4	Can\$1,593.66	Can\$1,625.49	Can\$1,657.95	Can\$1,691.15	Can\$1,724.97
Realized Total Benefits	Can\$3,719	Can\$6,449	Can\$6,578	Can\$6,709	Can\$6,844

Business Unit FTE Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	0.14	0.14	0.14	0.14	0.14
Q1	0.00	0.02	0.02	0.02	0.02
Q2	0.01	0.02	0.02	0.02	0.02
Q3	0.02	0.02	0.02	0.02	0.02
Q4	0.02	0.02	0.02	0.02	0.02
Realized Total Benefits	0.04	0.07	0.07	0.07	0.07

Hardware Purchase Avoidance

Hardware purchase avoidance can occur by pooling of current servers and better utilization of those servers. These plans are specified here for the successive years of the analysis.

Cumulative Benefits (5 - Year): Can\$0
 Organization financial benefit type: Net Fixed Assets (NFA - Cumulative)
 Values map to benefit class: Direct Benefits
 Goal: Reduce IT Infrastructure Costs
 Stakeholder: Information Technology - IT

Hardware Purchase Avoidance	As Is	Benefits with Tivoli	To Be
Annual server hardware purchases	Can\$500,000	0.0%	Can\$500,000
Total savings		Can\$0	

Hardware Purchase Avoidance	Year 1	Year 2	Year 3	Year 4	Year 5
Ideal benefit	Can\$0	Can\$0	Can\$0	Can\$0	Can\$0

Annual benefit growth (starting in year 2)

0.0%

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Notes:

1. With IBM Tivoli automation software, pooling of servers for dynamic use is facilitated, which increases hardware utilization, and can reduce the need for additional purchases.
2. The annual hardware purchase avoidance with the specified Tivoli solution(s).
3. Used to calculate annual benefits in ongoing years of the analysis.

Realized Benefits (Probable)	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Benefit	Can\$0	Can\$0	Can\$0	Can\$0	Can\$0
Q1	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q2	Can\$0.13	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q3	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q4	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Realized Total Benefits	Can\$0	Can\$0	Can\$0	Can\$0	Can\$0

Appendix D: Investment Details

Licensing and Maintenance Cost

The capital expenditures for Tivoli software licensing and maintenance required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$881,332
 Organization financial cost type: Net Fixed Assets (NFA)
 Values map to expense category: Capital Expenditure

Licensing and Maintenance	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Annual cost	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377
Total	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377

Notes:
 1. Licensing and maintenance costs is used to establish and quantify the pricing for the selected Tivoli solution, including base software licensing fees, and annual maintenance.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377
Annual Cash Flow	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377
Q1		Can\$0.00	Can\$23,949.25	Can\$23,949.25	Can\$26,344.18	Can\$26,344.18
Q2		Can\$0.00	Can\$23,949.25	Can\$23,949.25	Can\$26,344.18	Can\$26,344.18
Q3		Can\$0.00	Can\$23,949.25	Can\$23,949.25	Can\$26,344.18	Can\$26,344.18
Q4		Can\$0.00	Can\$23,949.25	Can\$23,949.25	Can\$26,344.18	Can\$26,344.18
Realized Total	Can\$478,985	Can\$0	Can\$95,797	Can\$95,797	Can\$105,377	Can\$105,377

Ongoing Tivoli Administration Cost

The ongoing administration expenditures required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$649,960
 Organization financial cost type: Operating Expenses
 Values map to expense category: Operating Expenditure

Ongoing Tivoli Administration	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Staff FTEs	0.00	2.00	2.00	2.00	2.00	2.00
Average annual burdened salary	Can\$0	Can\$60,000	Can\$62,400	Can\$64,896	Can\$67,492	Can\$70,192
Total	Can\$0	Can\$120,000	Can\$124,801	Can\$129,793	Can\$134,983	Can\$140,383

Notes:
 1. Ongoing administration cost is the internal resource investment required by the company to manage and maintain the Tivoli system. Specifies the FTEs required during the analysis period.
 2. Specifies the average burdened salary of the staff responsible for ongoing administration of the Tivoli solution.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$0	Can\$120,000	Can\$124,801	Can\$129,793	Can\$134,983	Can\$140,383
Annual Cash Flow	Can\$0	Can\$120,000	Can\$124,801	Can\$129,793	Can\$134,983	Can\$140,383
Q1		Can\$29,999.97	Can\$31,200.19	Can\$32,448.16	Can\$33,745.87	Can\$35,095.80
Q2		Can\$29,999.97	Can\$31,200.19	Can\$32,448.16	Can\$33,745.87	Can\$35,095.80
Q3		Can\$29,999.97	Can\$31,200.19	Can\$32,448.16	Can\$33,745.87	Can\$35,095.80
Q4		Can\$29,999.97	Can\$31,200.19	Can\$32,448.16	Can\$33,745.87	Can\$35,095.80
Realized Total	Can\$0	Can\$120,000	Can\$124,801	Can\$129,793	Can\$134,983	Can\$140,383

Resources	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
IT FTE Costs	0.00	2.00	2.00	2.00	2.00	2.00
Q1		0.50	0.50	0.50	0.50	0.50
Q2		0.50	0.50	0.50	0.50	0.50
Q3		0.50	0.50	0.50	0.50	0.50
Q4		0.50	0.50	0.50	0.50	0.50
Realized Total	0.00	2.00	2.00	2.00	2.00	2.00

Professional Services Cost

The professional services expenditures required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$137,480
 Organization financial cost type: Operating Expenses
 Values map to expense category: Operating Expenditure

Estimated professional services (as % of annual license cost)

0.0% n1

Professional Services	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Annual cost	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000
Total	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000

Notes:
 1. Estimated to be a fixed percentage of the total initial licensing costs of the IBM Tivoli solution. Enter the percentage of license cost to calculate professional service fees for the analysis. Initial licensing fees are used when calculating year
 2. Professional services from Tivoli can be used to help plan, configure, customize and deploy the solution for any environment. Using Tivoli professional services can help reduce the burden on internal labor resources, shorten deployment schedules, reduce project risk and help ensure return on investment goals are met. Estimated to be a fixed percentage of the total initial licensing costs of the IBM Tivoli solution. Specifies the percentage of initial license cost to calculate professional service fees in year 1 of the analysis.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000
Annual Cash Flow	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000
Q1		Can\$19,370.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00
Q2		Can\$19,370.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00
Q3		Can\$19,370.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00
Q4		Can\$19,370.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00	Can\$3,750.00
Realized Total	Can\$0	Can\$77,480	Can\$15,000	Can\$15,000	Can\$15,000	Can\$15,000

Internal Implementation Labor

The internal labor required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$59,000
 Organization financial cost type: Operating Expenses
 Values map to expense category: Operating Expenditure

Implementation Labor	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Man months of effort	0.00	5.00	0.00	0.00	0.00	0.00
Average burdened salary rate per man month	Can\$11,800.09	Can\$11,800.09	Can\$12,272.08	Can\$12,762.97	Can\$13,273.48	Can\$13,804.42
Staff cost (man months of effort * average burdened salary rate per man month)	Can\$0	Can\$59,000	Can\$0	Can\$0	Can\$0	Can\$0
Staff FTEs (man months of effort / 12)	0.00	0.42	0.00	0.00	0.00	0.00

Notes:
 1. Implementation includes planning and procurement, formal training and learning, setup and configuration, customization of the application and its interfaces, and installation and deployment.

Planning and procurement includes time spent in developing solution requirements, reviewing solutions, specifying the architecture and project plan, reviewing contracts, obtaining financial budget and approval and vendor management. Formal training and learning includes time spent in formal Tivoli technical training courses, or performing independent learning, in anticipation of and during the setup, installation and deployment of the Tivoli solution. Setup and configuration includes the installation of the required hardware and software infrastructure, installation of the software, and establishment of various basic settings. Customization of the application and interfaces are typically integration or programming tasks to personalize the software for specific business functions, policies, rules and procedures. Installation and deployment includes the verification of correct operation, scalability and flexibility, and the deployment to use.

2. The salary includes base compensation, plus bonuses and overtime, and burdened costs such as taxes and benefits. Default is calculated as the average annual IT salary (burdened) divided by 12 months.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$0	Can\$59,000	Can\$0	Can\$0	Can\$0	Can\$0
Annual Cash Flow	Can\$0	Can\$59,000	Can\$0	Can\$0	Can\$0	Can\$0
Q1		Can\$14,750.04	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q2		Can\$14,750.04	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q3		Can\$14,750.04	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Q4		Can\$14,750.04	Can\$0.00	Can\$0.00	Can\$0.00	Can\$0.00
Realized Total	Can\$0	Can\$59,000	Can\$0	Can\$0	Can\$0	Can\$0

Resources	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
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IT FTE Costs	0.00	0.42	0.00	0.00	0.00	0.00
Q1		0.10	0.00	0.00	0.00	0.00
Q2		0.10	0.00	0.00	0.00	0.00
Q3		0.10	0.00	0.00	0.00	0.00
Q4		0.10	0.00	0.00	0.00	0.00
Realized Total	0.00	0.42	0.00	0.00	0.00	0.00

Training Cost

The training expenditures required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$49,998
 Organization financial cost type: Operating Expenses
 Values map to expense category: Operating Expenditure

Training	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Number of training classes	0	2	2	2	2	2
Cost per class (including travel)	Can\$5,000	Can\$5,000	Can\$5,000	Can\$5,000	Can\$5,000	Can\$5,000
Total	Can\$0	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000

Notes:
 1. Specifies the number of training classes your organization will require to train IT staff on Tivoli products. For 2 people attending 1 class, enter 2.
 2. Specifies the cost per training class, including any technical Tivoli training session course fees, materials, and travel and expenses the organization may incur to train IT staff.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$0	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000
Annual Cash Flow	Can\$0	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000
Q1		Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91
Q2		Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91
Q3		Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91
Q4		Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91	Can\$2,499.91
Realized Total	Can\$0	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000	Can\$10,000

Solution Hardware Cost

The capital expenditures for hardware required to implement the proposed Tivoli solution.

Cumulative Cost (5 - Year): Can\$40,000
 Organization financial cost type: Net Fixed Assets (NFA)
 Values map to expense category: Capital Expenditure

Solution Hardware	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Annual cost	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0
Total	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0

Notes:
 1. For certain Tivoli solutions and configurations, additional hardware and software may be necessary to host the software. These costs indicate the purchase or lease fees for the server, charges for the additional software and operating systems, and costs for network hardware/software and communication bandwidth. Specifies additional capital expenditures needed for server hardware to support the Tivoli solution.

Realized Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5
Worksheet / Ideal Cost (Purchased)	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0
Annual Cash Flow	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0
Q1		Can\$0.00	Can\$0.00	Can\$5,000.00	Can\$0.00	Can\$0.00
Q2		Can\$0.00	Can\$0.00	Can\$5,000.00	Can\$0.00	Can\$0.00
Q3		Can\$0.00	Can\$0.00	Can\$5,000.00	Can\$0.00	Can\$0.00
Q4		Can\$0.00	Can\$0.00	Can\$5,000.00	Can\$0.00	Can\$0.00
Realized Total	Can\$20,000	Can\$0	Can\$0	Can\$20,000	Can\$0	Can\$0

Excluded Costs

Displacement Costs

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Network and Communications Costs
Software and Operating Systems Cost

Appendix E: Realized Benefit Schedule

The Implementation Plan and Realized Benefits section establishes how the benefits calculations are adjusted for various risks and realizations in order to create more conservative, risk adjusted results. These adjustments include:

- Project implementation plan and potential delays (benefits do not get realized until after deployment)
- Discounting of direct (hard) or indirect (soft) benefits
- Adoption curve (delays in realizing full benefits based on rollout or user adoption delays)

Realized Benefits and Schedule	
Project Implementation Plan (months from kickoff to deployment)	5
Default Realized Benefits	
Direct Benefits (Hard)	100.0%
Indirect Benefits (Soft)	50.0%
Benefit Schedule/Adoption Curve (starting from deployment)	
First Year (months 1-12 from deployment)	100.0%
Second Year (months 13-24 from deployment)	100.0%
Third Year (months 25-36 from deployment)	100.0%
Fourth Year (months 37-48 from deployment)	100.0%
Fifth Year (months 49-60 from deployment)	100.0%

Appendix F: Project Risk

Cost of Capital / Discount Rate: 9.5%

Risks of Implementing / Deploying This Project	Likelihood	Impact
Requirements	No Risk (0)	No Impact (0)
Schedule	No Risk (0)	No Impact (0)
Resource Capability and Maturity	No Risk (0)	No Impact (0)
Technology / Infrastructure	No Risk (0)	No Impact (0)
Vendor / Service Provider	No Risk (0)	No Impact (0)
Management Commitment and Funding	No Risk (0)	No Impact (0)
User Acceptance	No Risk (0)	No Impact (0)
Market / Business Environment	No Risk (0)	No Impact (0)

Total Risk Score: 0.0%

Risk Adjusted Discount Rate: 9.5%