

WinterGreen Research ROI Product Features and Benefits E-Application Analysis

ROI and TCO Analysis: Z and P-Series

Custom Built

Business Models

Application Specific

Designed To Improve Sales

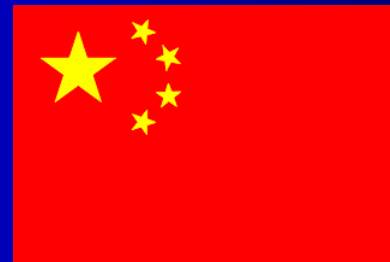
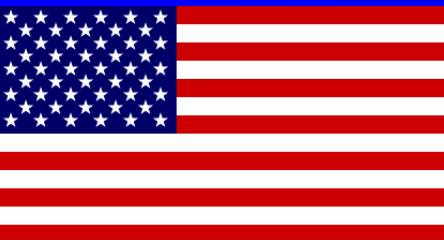
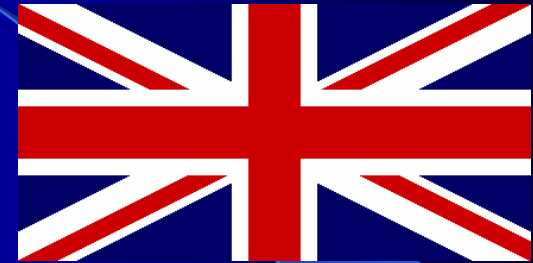
Transparent, Understandable ROI Calculations



WGR Worldwide Market Presence

35 Distributors Worldwide

- Thompson Financial
- Dialog
- Global Information GII
- MarketResearch.com
- ResearchandMarkets.com
- Electronics.ca



Main Points

- **ROI Based on Features and Benefits of Comparative Systems**
- **Mainframe 10 Times Less Expensive Than Distributed Systems**
- **SOA Is What Makes the Mainframe Relevant**
- **Comparative Cost Analysis Models**
- **Utilization and Process Efficiency Models**
- **Assumptions -- Mainframe vs. Distributed Systems**
- **Strategies -- Highly Differentiated Analysis**
- **Methodology -- Start With Single Application**



**Business Models Provide ROI Cost Analysis :
SLA, EAI, Security, Scalability, Hardware,
Software, Labor, Networking, Infrastructure,
Power, Floor Space, Training, Stack Integration,**



**Product Benefits
Product Features
Described In Numbers
TCO Costs and Value**



Comparative Cost Analysis Models

- **Data center analysis includes server management costs**
- **Interconnect complexity, power, and cooling analysis**
- **Shared workload on mainframe provides typical utilization of 87%**
- **Server utilization constrained by lack of memory -- typical utilization of 15%**

Market Conditions Impacting ROI

- **The quantity of information is doubling every 7 months, and the pace is increasing**
- **Competitive, compliance, and governance issues forcing IT to adopt more efficient process**
- **SLA server software running in background consumes 43% of processor power**
- **Mainframe Z OS optimized for process and security with .5% of processor power dedicated to SLA**
- **Database replication consumes significant distributed server resource because of moving information into multiple databases**
- **Mainframe single, consolidated efficient database**

WinterGreen Research ROI/TCO

Features and Benefits Analysis -- At Least Ten to One Cost

Advantage for Mainframe over Distributed

Example

Security Cost Analysis

WGR



WINTERGREEN RESEARCH



welcome, Sue6A
[log off][My Account]

View Sessions

Help

Summary Page:

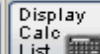
sec

Current Scenario:

Scenario 1

Go

Scenarios



Calculate

Security Cost Analysis - Mainframe Versus Distributed System

[Analyst Comments - Security](#)

Total Annual Security Costs - Distributed System

330.5

330.5

\$000

340.4

350.7

361.2

372.0

383.2

Total Annual Security Costs - Mainframe

13.3

13.3

\$000

13.7

14.1

14.5

14.9

15.4

Cost Differential

Total

Unit

2006

2007

2008

2009

2010

Security Cost Differential - Mainframe vs. Distributed System

317.3

\$000

326.8

336.6

346.7

357.1

367.8

Labor Costs to Achieve SLA on E-Application Servers

Current Labor Costs for Software Developers to Achieve SLA On Distr

Analyst Metric To Set Stage For SLA Software Calculation	Current	Unit
--	---------	------

# of Applications	1.0	#
-------------------	-----	---

Current Labor Costs for Software Developers to Achieve SLA on Distributed System	Current	Unit
--	---------	------

Average Annual Costs Per Software Developer To Manage SLA on Dedicated Servers (annual fully loaded cost)	150.0	000\$
---	-------	-------

# Full Time Software Developers To Manage Distributed Server Clustering And Service Level Availability During Normal Operation	2.0	#
--	-----	---

# Extra Software Developers To Manage Scheduling, Messaging Manager, Scheduling, And Recovery From Down Time Or Lost Transactions Efforts(# In Employee Years)	0.3	#
--	-----	---

Total # Software Developers Per Year To Manage SLA On Distributed Servers	2.3	#
---	-----	---

Current Annual Cost For Software Developers To Achieve SLA On Distributed Servers	345.0	000\$
---	-------	-------

ROI Cost Analysis Model Market Segment Analysis

Single, 300, and 1400 Applications

Selected Parameters

(In Thousands of Dollars)

	Single Application 000\$	Single Application 000\$	300 Applications 000\$	1400 Applications 000\$
# Servers	13	28	2,400	15,000
# Servers per Application	1	1	8	11
Application Integration / Development Database	0.0	283.3	2,549.7	15,298.2
Service Level Availability (SLA)	633.0	1,266.0	6,963.0	20,889.0
Hardware Technicians	288.0	576.0	3,168.0	9,504.0
Software Developers	345.0	690.0	3,795.0	11,385.0
Infrastructure	118.2	236.4	1,300.2	7,801.2
Server Electricity	20.5	41.0	225.5	1,353.0
Air Conditioning Electricity	41.0	82.0	451.0	2,706.0
Floor Space	56.7	113.4	623.7	3,742.2
Network Costs	12.6	25.2	138.6	831.6
Cabling	12.6	25.2	138.6	831.6
Hardware Costs	105.6	126.7	1,161.6	18,585.6
Servers	105.6	126.7	1,161.6	18,585.6
Scalability	0.0	0.0	0.0	0.0
Servers	0.0	0.0	0.0	0.0
Software Costs	38.5	77.0	423.5	2,541.0
Database	38.5	77.0	423.5	2,541.0
Security	26.4	52.8	290.4	1,742.4
Extra Software	26.4	52.8	290.4	1,742.4
Total (000\$)	934.3	2,067.4	12,827.0	67,689.0

Table 2

ROI Cost Analysis Model Market Segment Analysis,
Single Application, 300 Applications, and 1400 Applications --
Mainframe Selected Parameters

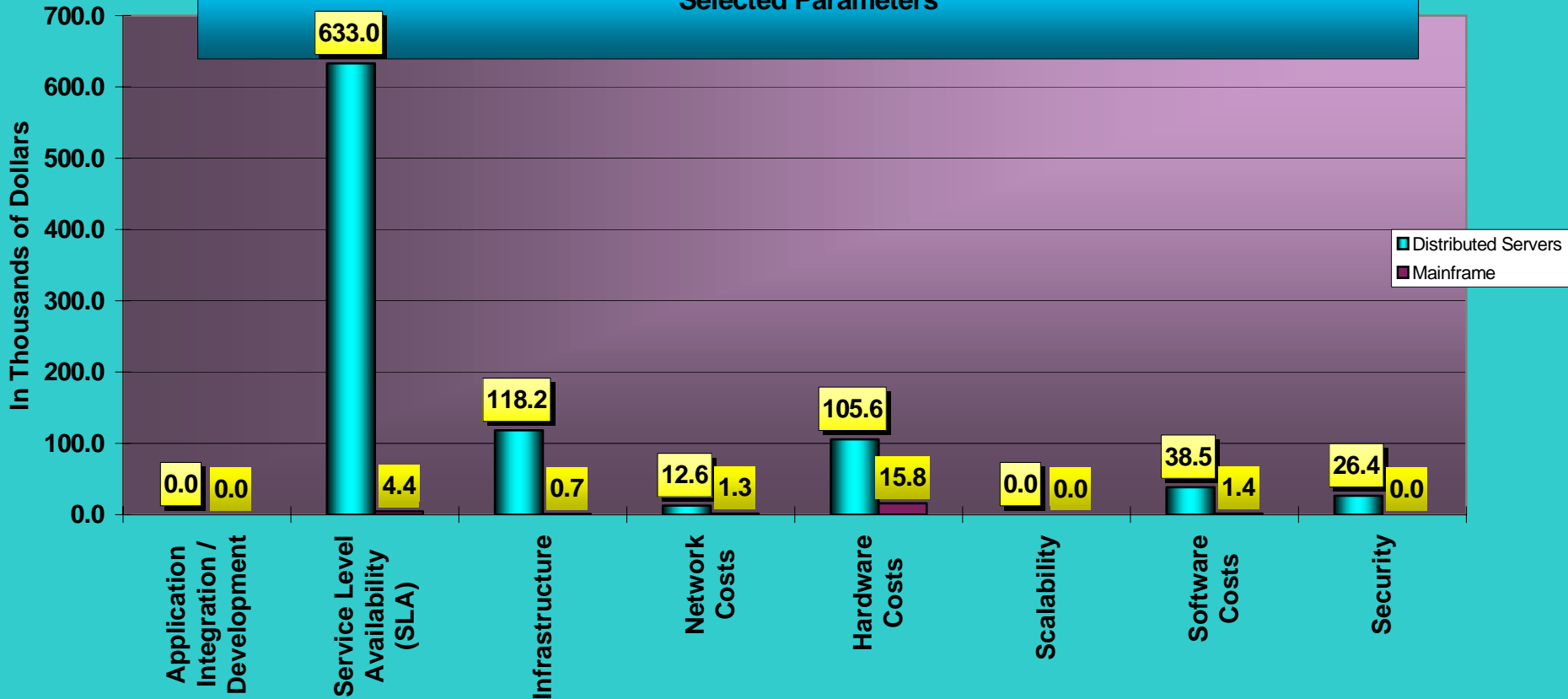
(In Thousands of Dollars or # of MIPs)

	Single Application 000\$	Single Applica- tion 000\$	300 Applica- tions 000\$	1400 Applica- tions 000\$
# MIPs per Application				
Runtime	16	21	200	2000
Allocated	3.799	5.9	67.0	2000.0
Application Integration / Development Database	0.0	2.2	19.8	118.8
Service Level Availability (SLA)	4.4	8.8	48.4	290.4
Hardware Technicians	1.4	2.8	15.4	92.4
Software Developers	3.0	6.0	33.0	198.0
Infrastructure	0.716	1.432	78.456	1,242.360
Server Electricity	0.019	0.038	8.4	343.5
Air Conditioning Electricity	0.019	0.038	8.4	343.5
Floor Space	0.678	1.356	61.7	555.3
Network Costs	1.3	2.6	14.3	85.8
Cabling	1.3	2.6	14.3	85.8
Hardware Costs	15.8	31.6	347.6	3,823.6
MIPs	15.8	31.6	347.6	3,823.6
Software Costs	1.4	2.8	15.4	92.4
Database	1.4	2.8	15.4	92.4
Security	0.0	0.0	0.0	0.0
Extra Software	0	0.0	0.0	0.0
Total (000\$)	23.6	49.4	524.0	5,653.4

E-Application Mainframe vs. Distributed

Selected Parameter Analysis

Figure 2
Distributed vs. Mainframe Total Cost of Ownership Analysis, Single Application One Year Costs, Selected Parameters



Source: WinterGreen Research, Inc.

Table 5**ROI Cost Analysis Model Market Segment Analysis,
Single Application, 300 Applications, and 1400 Applications -
Server Robust Parameter Analysis****(In Thousands of Dollars)****E-Application
000\$**

# Servers	13
# Servers per Application	1
Application Integration / Development	0.0
Service Level Availability	1,626.2
Infrastructure	118.3
Network Costs	339.6
Scalability	0.0
Hardware Costs	115.8
Software Costs	82.6
Security	330.5
Total (000\$)	2,613.0

Source: WinterGreen Research, Inc.

Table 6**ROI Cost Analysis Model Market Segment Analysis,
Single Application, 300 Applications, and 1400 Applications -
Mainframe Robust Parameter Analysis****(In Thousands of Dollars)**

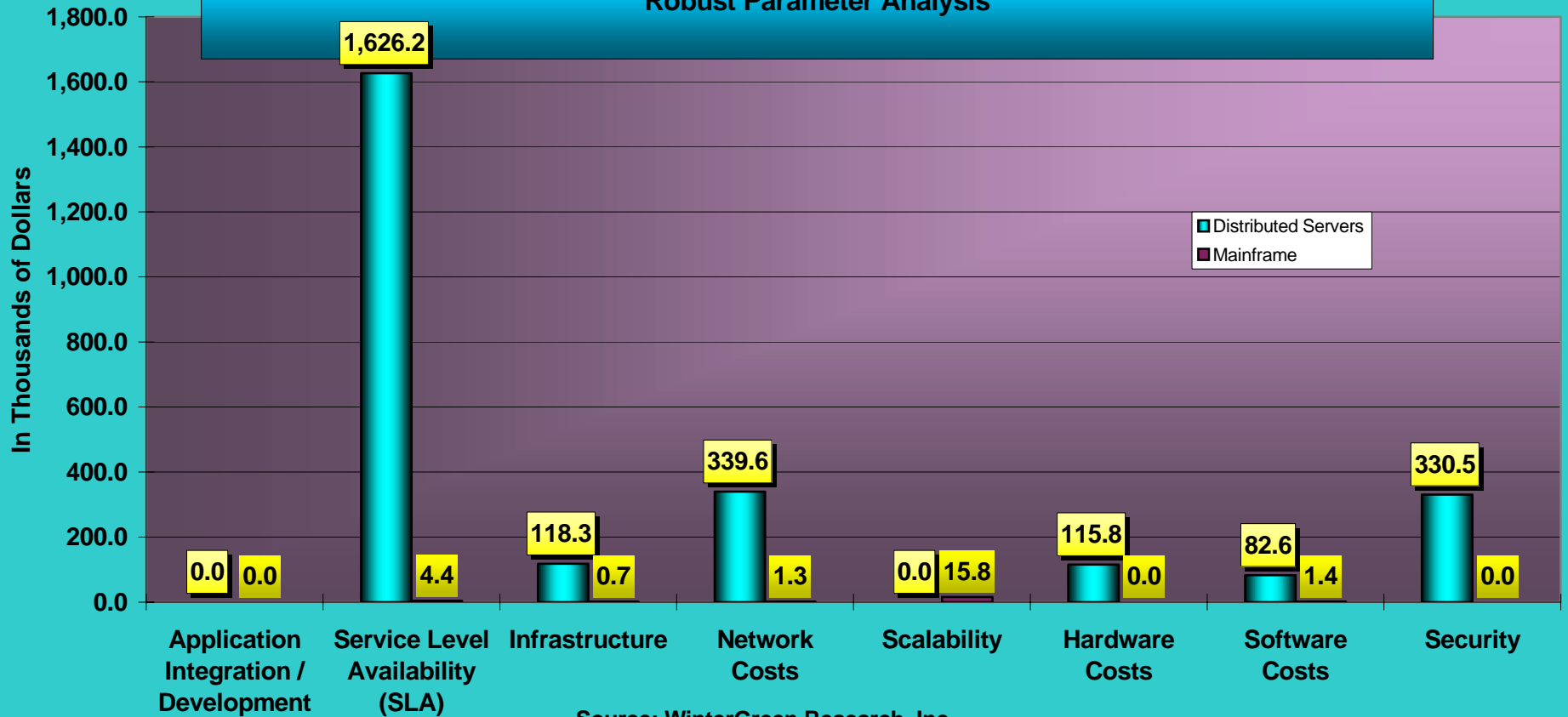
	E-Application 000\$
# MIPs per Application	
Runtime	16
Allocated	3.799
<hr/>	
Application Integration / Development	0.0
Service Level Availability	7.5
Infrastructure	0.724
Network Costs	5.8
Scalability	0.0
Hardware Costs	15.8
Software Costs	27.9
Security	13.3
Total (000\$)	71.0

Source: WinterGreen Research, Inc.

E-Application Mainframe vs. Distributed

Robust Parameter Analysis

Figure 4
Distributed vs. Mainframe Total Cost of Ownership Analysis, Single Application One Year Costs,
Robust Parameter Analysis



Source: WinterGreen Research, Inc.

E-Application Server to Mainframe - One to One Analysis of Cost Factors

- Looks beyond charge backs
- Looks at labor for technicians, developers, and professionals
- Looks at software, hardware, and security costs separately
- Analyzes infrastructure costs
- Takes into consideration utilization realities
- Does SLA analysis

ROI Tool -- Summary Page with Drill Down Hyperlinks

knowledge is power
**Wintergreen
 Research**

ROI ENGINE
 Real-Time Investment Analysis

Welcome
USER1

[View Sessions](#)

[Help](#)

[\(Log Off\)](#)

app int Scenario 1 Scenarios

[Calculate](#)

Estimated Annual Growth (activity) = %

Application Integration Development Costs Distributed vs. Mainframe

Analyst Remarks

Development On Distributed Systems

Development On Mainframe

Costs

Different Development Costs

Current	Unit	Year 1	Year 2	Year 3	Year 4	Year 5
	000\$					
4,864.7	000\$	4,966.8	5,076.1	5,192.9	5,317.5	5,450.4
633.2	000\$	646.5	660.7	675.9	692.1	709.4
Total		Year 1	Year 2	Year 3	Year 4	Year 5
4,231.5	\$	4,320.3	4,415.4	4,516.9	4,625.3	4,741.0

[Calculate](#)

Conversion Factor Servers to MIPs

- Conversion depends on multiple factors:
- Calculations done in 5 different ways to cross check numbers
- Number of transactions per second
- System optimization
- System utilization
- Number of database instances
- Number and frequency of database replications

Conversion Factor: Runtime MIPs to Allocated MIPs

- 13 servers and 16 MIPs, an 81% server to mainframe correspondence
- 16 MIPs runtime / shared processing resource
- Shared workload on the mainframe
- 13 servers fully dedicated to E-application
- E-Application full capacity use is 5 days per week, times 8 hours per day, times 52 weeks per year
- This equates to 23.7% of the total processing time or 3.799 MIPs allocated to the application
- 3.8 MIPs allocated is the value used in the analysis

Fully Loaded Data Center Costs

- # \$18 per square foot includes aspects of a hardened data center:
- # Fault tolerant electrical grid
- # 2000 amps of 480v input power
- # Main transfer switch
- # 500KVA Powerware UPS units with 90 batteries per unit
- # Standalone PDUs at each cabinet row
- # 1.5-megawatt generator (2200-gallon tank)
- # DataTrax monitoring software for all data center infrastructure
- # 1-megawatt generator (2000-gallon tank)

Fully Loaded Data Center Costs

(Continued)

- # 22,000 sq. ft. facility
- # 18,000 sq. ft. of raised floor
- # 26-ton data air AC units
- # Very Early Smoke Detection Apparatus (VESDA)
- # Pre-action dry pipe sprinkler system
- # 220 smoke detectors in an integrated system
- # Simplex security badge entry/exit on all doors to facility
- # Earthquake protection for the building

SLA Software

Total # of Servers For The Application	14.0	#
SLA Software Costs - Monitoring and Management (M&M) Software	Current	Unit
Total # of CPUs Running M&M Software	45.0	#
\$ Per CPU - SLA Software Costs For Monitoring and Management (M&M)	250.0	\$
Total Costs - SLA Monitoring and Management (M&M) Software	11,250.0	\$
SLA Software Costs - Registration And Un-Registration Of Managed Components	Current	Unit
Total # of CPUs Running Registration Software	45.0	#
\$ Per CPU - SLA Software Costs For Registration	300.0	\$
Total Costs - SLA Registration Software	13,500.0	\$

SLA server software running in background consumes 43% of processor power, with no correlate in the mainframe which is optimized for process and security.

SLA Software Costs - Protection Group Management	Current	Unit
Total # of CPUs Running Protection Group Management Software	45.0	#
\$ Per CPU - SLA Software Costs For Protection Group Management	700.0	\$
Total Costs - SLA Protection Group Management Software	31,500.0	\$
SLA Software Costs - Event/Message Control	Current	Unit
Total # of CPUs Running Event/Message Control Software	45.0	#
\$ Per CPU - SLA Software Costs For Event/Message Control	120.0	\$
Total Costs - Event/Message Control Software	5,400.0	\$
SLA Software Costs - Guaranteed Message Delivery	Current	Unit
Total # of CPUs Running Guaranteed Message Delivery Software	45.0	#
\$ Per CPU - SLA Software Costs For Guaranteed Message Delivery	400.0	\$
Total Costs - Guaranteed Message Delivery Software	18,000.0	\$
SLA Software Costs - Event/Message Priorities, Event/Message Ordering, And Persistence	Current	Unit
Total # of CPUs Running Event/Message Priorities, Event/Message Ordering, And Persistence Software	45.0	#
\$ Per CPU - SLA Software Costs For Event/Message Priorities, Event/Message Ordering, And Persistence For SLA	110.0	\$
Total Costs - Event/Message Priorities, Event/Message Ordering, And Persistence Software	4,950.0	\$

More Load Distribution Software

SLA Software Costs - Load Distribution, Clustering, Cluster Membership Systems Management, Including Adding, Removing And Enumerating Members, Lock, Unlock And Shut Down A Cluster Or A Cluster Node	Current	Unit
Total # of CPUs Running Software for Load Distribution, Clustering, Cluster Membership Systems Management (Including Adding, Removing And Enumerating Members, Lock, Unlock And Shut Down A Cluster Or A Cluster Node for SLA)	45.0	#
\$ Per CPU - SLA Software Costs For Achieving Load Distribution, Clustering, Cluster Membership Systems Management (Including Adding, Removing And Enumerating Members, Lock, Unlock And Shut Down A Cluster Or A Cluster Node)	815.0	\$
Total Costs - Software for Load Distribution, Clustering, Cluster Membership Systems Management	36,675.0	\$
SLA Software Costs - Checkpoint Services, Checkpoint Replicas, Checkpoint Data Access Reads, Writes, Updates, And Deletes, And Saving State	Current	Unit
Total # of CPUs Running Software for Checkpoint Services, Checkpoint Replicas, Checkpoint Data Access Reads, Writes, Updates, And Deletes, And Saving State	45.0	#
\$ Per CPU - SLA Software Costs For Checkpoint Services, Checkpoint Replicas, Checkpoint Data Access Reads, Writes, Updates, And Deletes, And Saving State	110.0	\$
Total Costs - Software for Checkpoint Services, Checkpoint Replicas, Checkpoint Data Access Reads, Writes, Updates, And Deletes, And Saving State	4,950.0	\$

More Server Management Software

SLA Software Costs - Synchronous Updates And Asynchronous Updates	Current	Unit
Total # of CPUs Running Software for Synchronous Updates And Asynchronous Updates	45.0	#
\$ Per CPU - SLA Software Costs For Providing Synchronous Updates And Asynchronous Updates	220.0	\$
Total Costs - Software for Synchronous Updates And Asynchronous Updates	9,900.0	\$
SLA Software Costs - Trace and Trace Manager	Current	Unit
Total # of CPUs Running Trace and Trace Manager Software	45.0	#
\$ Per CPU - SLA Software Costs For Trace and Trace Manager	250.0	\$
Total Costs - Trace and Trace Manager Software	11,250.0	\$
Total Software Costs	Current	Unit
Total \$ For Extra Software To Achieve SLA On Distributed Servers	147,375.0	\$
Unit Conversation - \$ to 000\$	1,000.0	#
000\$ - Total Initial Costs For Extra Software To Achieve SLA On Distributed Servers	147.4	000\$
5-Year Assumptions	Current	Unit
% Of Software Costs Incurred (Total for 5 years Represents Maintenance Percent)		%
Estimated Yearly Costs	Current	Unit
000\$ - Yearly Software Costs To Achieve Service Level Availability On Distributed System (Initial Costs And Maintenance Costs In Years Thereafter)	147.4	000\$

SLA Manual Process Downtime Expenses

- **\$892,200 Per Year for One Hour Lost Automation for Professional or Physician / Clinician**
- **Assume manual process replaces automation for one hour per year**
- **Assumption 4,500 people**
- **Lose the application 53 hours of downtime**
- **99.9 percent availability**

Server Security Costs

Security Cost Analysis For Distributed Systems (Dollars in Thousands)

Labor Costs - Security Policy Declaration	Current	Unit
Annual Cost of Labor To Develop Security Policies	50.0	\$000
Annual Cost of Labor To Implement LDAP or other Security Server	10.0	\$000
% Increase/Decrease In Security Policy Costs		%
Total Annual Cost of Labor to Implement Consistent Security and Identity Resolution Policies	60.0	\$000
Software Costs - E-Referral 14 Servers Security	Current	Unit
Cost Of Encryption Security Software	15.0	\$000
Cost Of Intrusion Detection Security Software	3.0	\$000
Cost Of Firewall Security Software	2.0	\$000
Cost Of Virus Protection Security Software	1.4	\$000
Cost Of PKI Security Software	5.0	\$000
% Increase/Decrease In Security Software Costs		%
Total Cost Of Security Software	26.4	\$000

Server Security Costs

Total Cost Of Security Software	60.0	\$000
Hardware Costs - Security	Current	Unit
Cost Of Security Edge Routers	<input type="text" value="7.0"/>	\$000
Cost Of Security Appliances	<input type="text" value="2.0"/>	\$000
% Increase/Decrease In Security Hardware Costs		%
Total Cost Of Security Hardware	60.0	\$000
Physical Security Costs	Current	Unit
Annual Cost Of Physical Security Personnel (security guard(s) or other)	<input type="text" value="95.0"/>	\$000
% Increase/Decrease In Physical Security Personnel Costs		%
Total Cost Of Physical Security Personnel		\$000
IT Security Incident Labor Costs	Current	Unit
Labor Cost Per Hour For Security Technicians to Resolve Specific Security Incidents	<input type="text" value="50.0"/>	\$
# Major Security Incidents Per Year	<input type="text" value="10.0"/>	#
Average # Of Technician and Management Hours To Resolve a Security Incident	<input type="text" value="90.0"/>	#
% Increase/Decrease In IT Security Incident Labor Costs		%
Total Annual Labor Costs To Resolve Specific Security Incidents	60.0	\$000

Server Physical Security, Costs of Lost Business, and IT Security Incident Direct Costs*

Physical Security Costs	Current	Unit
Annual Cost Of Physical Security Personnel (security guard(s) or other)	95.0	\$000
% Increase/Decrease In Physical Security Personnel Costs		%
Total Cost Of Physical Security Personnel		\$000
IT Security Incident Labor Costs	Current	Unit
Labor Cost Per Hour For Security Technicians to Resolve Specific Security Incidents	50.0	\$
# Security Incidents Per Year	100.0	#
Average # Of Hours To Resolve a Security Incident	30.0	#
% Increase/Decrease In IT Security Incident Labor Costs		%
Total Annual Labor Costs To Resolve Specific Security Incidents	110.1	\$000
Cost Of Lost Business Due To Security Incidents	Current	Unit
Total Annual Cost Of E-Referral Lost Business Due To Security Incidents	30.0	\$000
% Increase/Decrease In Cost of Lost Business Due to Security Incidents		%
Annual Cost Of Lost Business Due To Security Incidents		\$000

Application Integration Development Costs - Other Applications - Not E-Application



welcome, Sue6A
[log off][My Account]

New Sessions

Help

Summary Page:

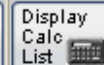
applicaiton inte

Current Scenario:

Scenario 1

Go

Scenarios



Calculate

Application Integration Development Costs - Distributed vs. Mainframe	Initial	Unit	2007	2008	2009	2010	2011
Analyst Remarks							
Application Integration Development On Distributed Systems	233.7	000\$	238.6	243.9	249.5	255.5	261.9
Application Integration Development On Mainframe	2.2	000\$	2.3	2.3	2.4	2.5	2.5
Cost Differential	Total	Unit	2007	2008	2009	2010	2011
Cost Differential - Application Integration Development - Distributed vs. Mainframe	231.5	000\$	236.3	241.5	247.1	253.0	259.4

Conclusion: Mainframe Holds its Value Server Hardware Replaced Every Three Years

- **Server hardware needs to be replaced every three years**
- **Server has zero value at end of three year life**
- **Mainframe is refreshed and scaled or descaled once it is purchased**
- **Mainframe holds its value**

Cost of Next Steps

- **Collection of relevant metrics to provide customization**
- **Build customized version of mainframe vs. distributed models**
- **\$1,800 per custom application report**
- **\$5,000 per one day to collect metrics for customization application report (if necessary)**
- **\$25,000 for comprehensive summary report**

WinterGreen Research ROI Product Features and Benefits Analysis

**WinterGreen Research,
6 Raymond Street
Lexington, Massachusetts**

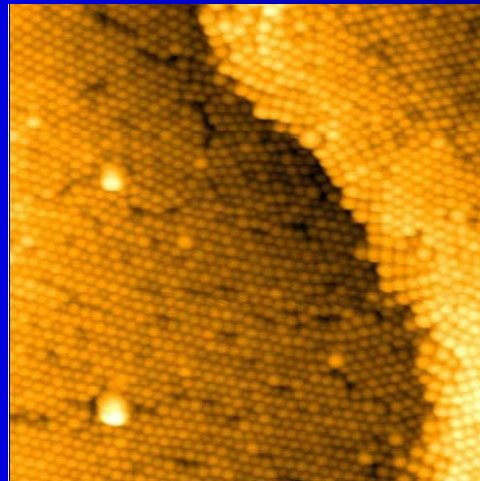
781 863 5078

Appendix A

- Following are background slides about WinterGreen Research

TCO / ROI for Software Products

- OS
- Middleware
- Application
- Security
- Identity
- AAA Radius
- Real Time Video
- Web Services
- Messaging
- Wrappers
- Biometrics



- Linux
- Wireless
- Music / Radio
- Search
- Video
- Web Services
- SOA / XML
- Content Management
- PKI

World Energy Analysis

WinterGreen Research

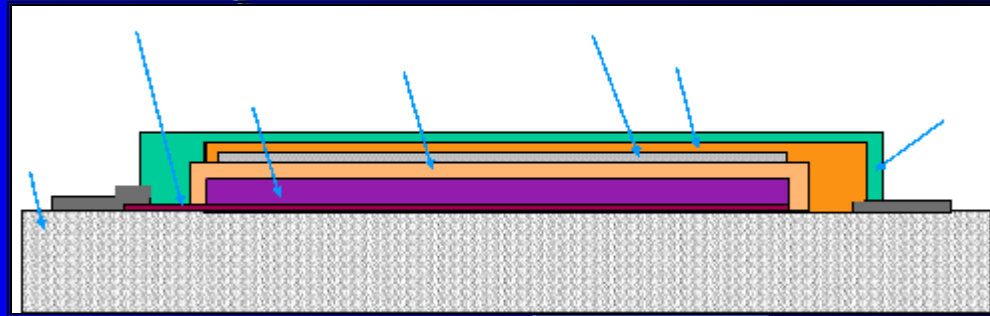


Solar

Thin
Film
Battery

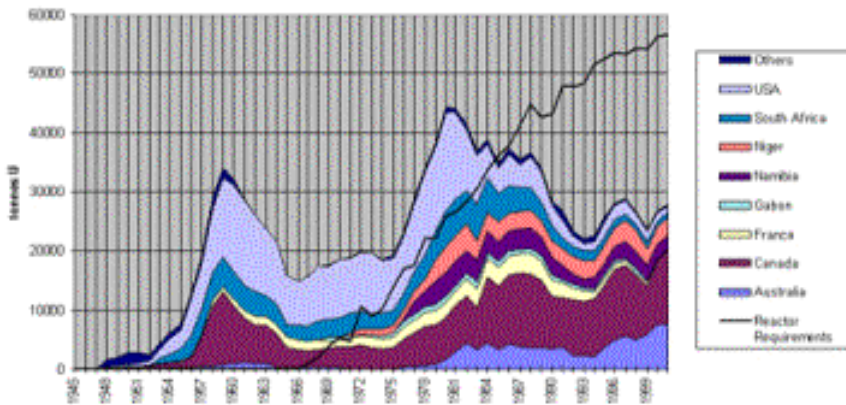


Wind



Nuclear

Western World Production Against Reactor Requirements 1945-2001



Stationary
Fuel
Cell



Renewable Energy Accounts for 55.3% of World Energy by 2018

Worldwide Grid and Residential Electricity Power Generation Source

Billions of Killowatt Hours

Fuel Type	Billions of Billions of			%	%	%
	2006	20013	2018	2006	2013	2018
	2006	20013	2018	Market	Market	
	Hours	Hours	Hours	Share	Share	
Coal	5,532.0	1,123.0	160.9	33.7	4.9	0.5
Nuclear	2,626.0	4,851.0	7,819.3	16.0	21.3	24.3
Natural Gas	1,892.0	2,007.0	257.4	11.5	8.8	0.8
Wind	471.6	6,592.0	13,096.4	2.9	29.0	40.7
Petroleum	1,847.0	1,587.0	257.4	11.3	7.0	0.8
Solar	11.2	1,155.1	4,698.0	0.1	5.1	14.6
Hydro	1,982.0	2,183.0	1,608.9	12.1	9.6	5.0
Hydrogen	929.0	1,982.0	3,024.7	5.7	8.7	9.4
Other	1,124.2	1,256.4	1,254.9	6.8	5.5	3.9
Total	16,415.0	22,736.5	32,178.0	100.0	100.0	100.0

Residential is both grid and non-grid powered in 2013 and 2018

Source: WinterGreen Research, Inc.

ROI / TCO for Communication and Server Equipment

- Switches
- Routers
- Servers
- Blades
- Digital Loop Carriers
- DWDM
- DSL / Fiber



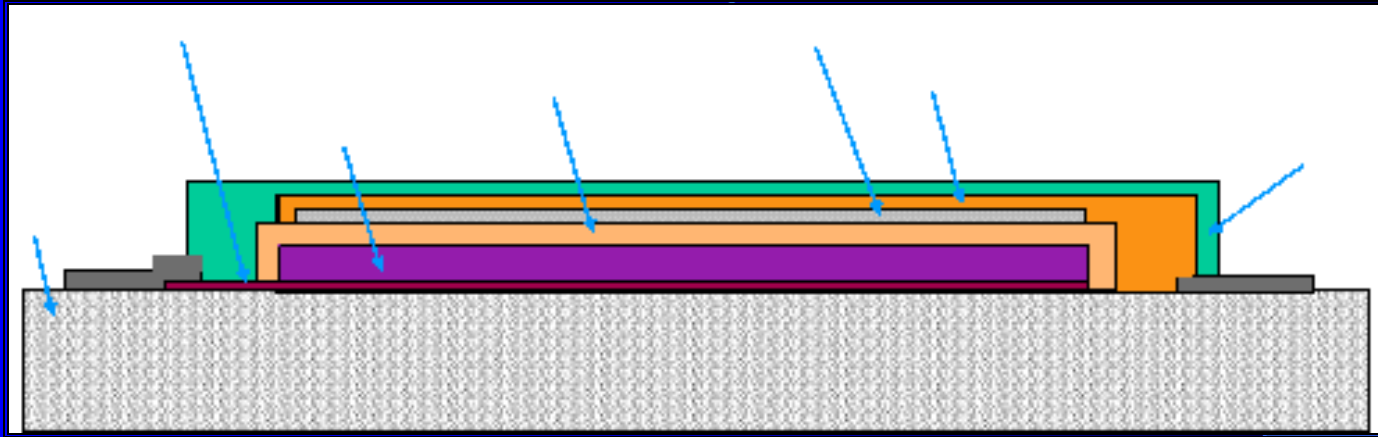
- Wireless
- Wireline
- Cable
- WiMAX
- Edge Equipment
- Video
- Satellite
- Audio

TCO / ROI for Infrastructure



- IP Internet Based
- Cable Infrastructure
- Wireline Sonet Infrastructure
- Wireless 2.5 G, 3G, and 4G Infrastructure
- Wireless Data and Voice WiFi and WiMAX
- Grid Generating Equipment
- Stationary Fuel Cells
- Wind and Solar Generators

TCO / ROI for Technology Products



- Micro Fuel Cell
- Stationary Fuel Cell
- Thin Film Batteries
- Wind Energy Generators
- Off Grid Systems
- Solar Energy Cells
- Nanotechnology Optical Modulators
- Campus Generators
- Micro Generators
- Fuel Cell Components

WGR

WINTERGREEN RESEARCH

WinterGreen Research Primary Research

**Accurate Forecasts Based on Primary
Research**

**Complex Analysis of Market Growth Factors
Proprietary Technology**

Emphasis On Good Numbers

Emphasis On Verifying Research

**First With SOA Cell Based Computing
Definitions**



Primary Research



WINTERGREEN RESEARCH

- WinterGreen Research provides primary research
- 22 year track record of predicting market size accurately
- 500 markets tracked - Specialty in High Growth Markets
- Highly Accurate Predictions Based on Primary Research
- In 1995 First Internet Study Predicted 100 MM users by 2000 -- Right On
- Wireless Handset Markets Predicted to Be 85% to 95% Penetration in U.S., Europe, and Japan by 2008 When Other Analysts Were Predicting 35 % Penetration -- Tops -- Again Right On

WinterGreen Research ROI Product Features and Benefits Analysis

**WinterGreen Research,
6 Raymond Street
Lexington, Massachusetts**

781 863 5078