

## Storage Economics Engagement Customer Summary

INDUSTRY: **Banking and Finance**  
 REGION: **Americas**  
 BUSINESS SIZE: **Enterprise**



TRANSFORM VIRTUALIZATION ECONOMICS RELIABLE TRUSTED INNOVATE INFO  
 TION GLOBAL CHANGE INTELLIGENT TECHNOLOGY SERVICES VALUE INSIGHT  
 PORTUNITY SOCIAL INFRASTRUCTURE INTEGRATE ANALYZE DISCOVER COMPET

### Executive Summary

**XYZ Inc. has asked HDS to help identify, measure, and eventually reduce the total cost of data ownership. A total cost of ownership (TCO) baseline assessment has been completed to help isolate specific problem cost areas and aid the implementation of new strategic plans for improvement. The current storage configuration employed by XYZ Inc. has 260TB of usable capacity and a 94% annual data growth rate.**

In reviewing the XYZ Inc. environment Hitachi took many parameters into consideration. This analysis leverages actual XYZ Inc. numbers along with empirical industry data to calculate potential savings that XYZ Inc. can achieve with the proposed storage architecture refresh.

XYZ Inc. can save a total of C\$18,955,895 by updating their current storage architecture to the proposed Hitachi solution. The investment payback period is 13 months and this solution will reduce cost/terabytes/year from the original C\$1,339.03 down to C\$286.83.

The Hitachi Data Systems solution includes:

- Virtualization.
- Dynamic tiered storage.
- Improving capacity utilization through Hitachi Dynamic Provisioning (HDP) thin provisioning.

### Contents

- Executive Summary
- Key Financial Metrics
- Company Information
- Business Information  
(before HDS engagement)
- Technical Information  
(before HDS engagement)
- Solution and Services Information  
(our products and solutions deployed)
- Resulting Benefits

## Key Financial Metrics

Category	Key Financial Metrics
Investment	C\$3,101,362 (total 5-year investment)
Estimated Payback Period	13 months after implementation
Savings	C\$18,955,895 (total 5-year savings) C\$14,305,589 (Net present value)
Internal Rate of Return (IRR)	10%
Return on Investment (ROI)	153% (Savings/no. of years/investment)

## Company Information

Company name	XYZ Inc.
Region	Americas
The country of company headquarters	Canada
Company size (employees)	841
Company size (revenue)	C\$575 million
Industry	Banking and finance

## Business Information (before HDS engagement)

Business overview	<b>CONFIDENTIAL</b>
Corporate vision	<b>CONFIDENTIAL</b>
Corporate goals	<b>Economical</b> <ul style="list-style-type: none"> <li>■ Capex reduction.</li> <li>■ Opex reduction.</li> </ul> <b>Technical</b> <ul style="list-style-type: none"> <li>■ Manage 94% data growth.</li> </ul>
Challenges	<b>Data growth %</b> <ul style="list-style-type: none"> <li>■ Underutilization of assets.</li> <li>■ Labor issue.</li> <li>■ Performance issues.</li> <li>■ Migration disruption.</li> </ul>
Cost sensitivities	<ul style="list-style-type: none"> <li>■ Depreciation.</li> <li>■ Cost of waste.</li> <li>■ Hardware maintenance.</li> <li>■ Software maintenance.</li> <li>■ Labor costs.</li> <li>■ Floor space.</li> <li>■ Power and cooling.</li> <li>■ Migration.</li> </ul>

## Technical Information (before HDS engagement)

### Scope

- Markham and Toronto Data Centers are the focus.
- Total usable capacity — 260TB.
- 3 static tiers: Tier 1 = 65TB; Tier 2 = 128TB; Tier 3 = 67TB.
  - Allocated and used capacity is 100TB.
  - Currently there are 10 arrays total (5 arrays in each data center).
  - Average age of the 10 arrays is 2.5 years.
- Data growth period is September 2007 to December 2008.
- Year-on-year growth rate set to 94%.
  - Adjusted to reflect projected growth rates going forward.
- 3 full-time equivalent staff.

## Solution and Services Information (our products and solutions deployed)

### Source cost reductions for XYZ Inc. by considering:

- Storage virtualization as a new base platform for the storage architecture.
- Virtualization-enabled dynamic tiering for data lifecycle migrations and data rightsizing.
- Introduction of lower tier(s) or archive tier.

### Current growth rate is unsustainable using a monolithic, static tier approach.

- Current purchasing requirements exceeding C\$30 million over 4 years to meet growth from 260TB to 2.8PB.

### Total cost of data ownership is high

- 38% utilization.
- Aggregate TCDO for all tiers (based on disk purchase price) is \$114,000 per terabyte.
- Related cost of waste is similarly high: C\$2.3 million for 260TB in a static tiered environment.
- In the dynamically tiered example, TCDO is less than C\$69,000.
- Cost of waste is also substantially reduced: C\$800,000.

### Virtualization

- Better management of heterogeneous assets; single management tool.
- Easier provisioning – time and labor costs.
- Reclaim orphaned usable but unallocated disk.
- Assist with data mobility – time and labor, maintenance, and power and cooling costs.

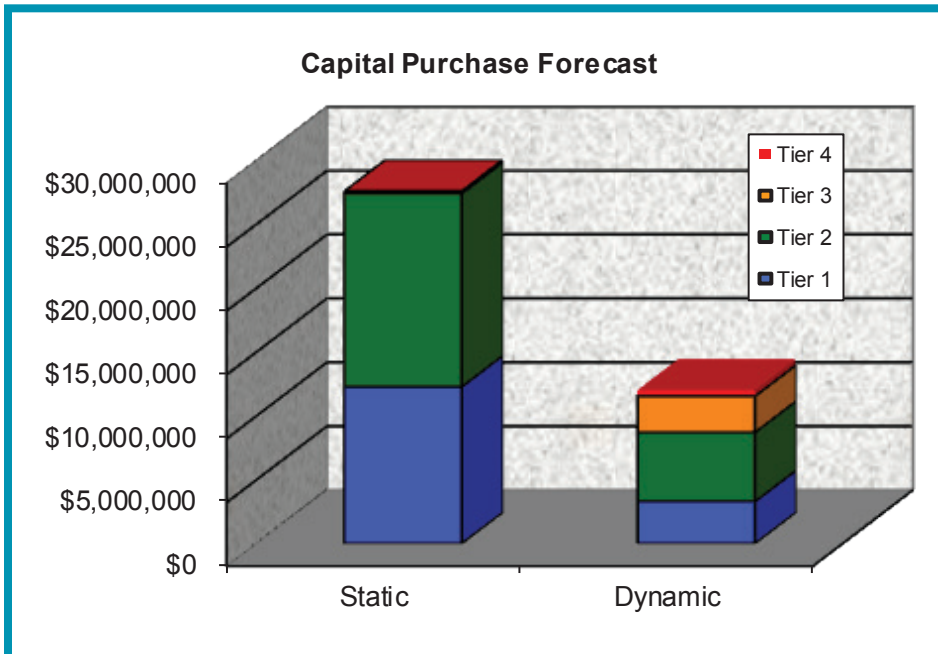
### Dynamic tiering

- Sweat the assets.
- Data allocated to appropriate tier.
- Capex deferment — purchase cheaper disk to meet projected demand.
- Quick promotion and demotion of data “on the fly” – time and labor costs.

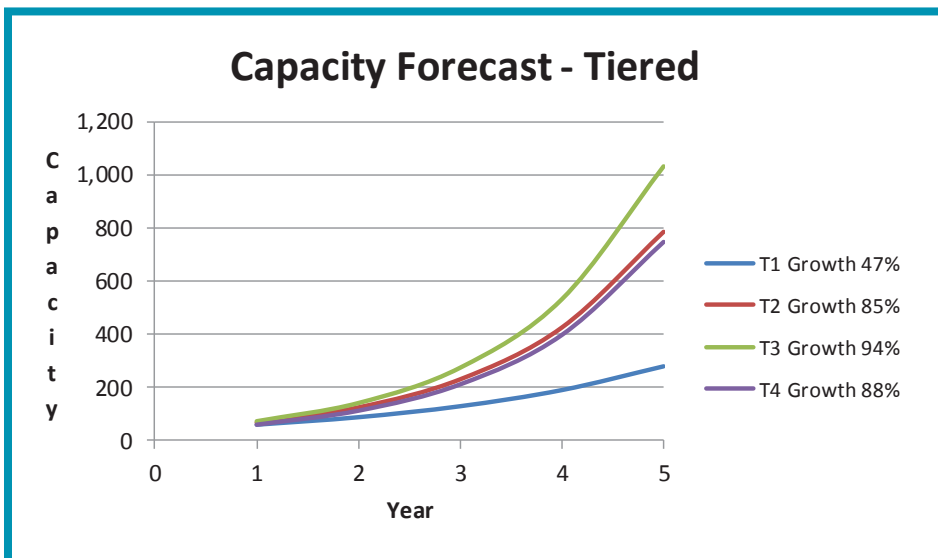
### Thin Provisioning

- Usually a considerable source of capex savings in lower-growth environments.
- Still significant capex avoid if HDP is applied to the current environment.

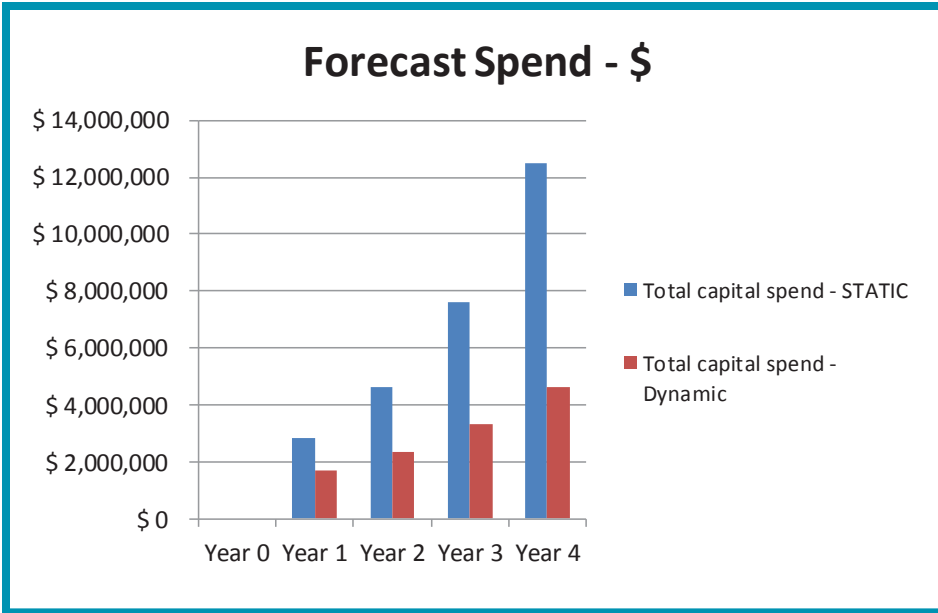
## Resulting Benefits



Current assets (XP, AMS, WMS) could be used as lower tiers and virtualized behind USP-V.



Current assets (XP, AMS, WMS) could be used as lower tiers and virtualized behind USP-V.



Tiering vs. dynamic tiering: Yearly capital purchase forecast over 4 years

Lower-cost tiers absorb the cost of waste; movement of less performance-reliant and stale, or static and duplicate data to lower tiers frees up higher-cost tiers to absorb organic growth.

- Unusually high growth rates yield significant investment returns:
  - Capex avoid is the greatest source of potential savings – deferment and reclaim.
  - 10% opex reduction primarily from data migration.
  - Opex gains via single management tool.
  - Minimal environmental.

Investment	3,101,362	Savings Summary	
5 year Savings	18,955,895	Labor, Migrate	1,994,284
NPV of Savings	14,305,589	CAPEX Avoid	16,492,430
Incremental IRR	102.01%	Environmental	43,112
Payback Term	13 months	Maint Fees	426,070
Return on Investment	511%	Total	18,955,895
Reclaimed Disk	79TB		

### Conclusions

- Current model is unsustainable with current people resources, and will be very expensive to maintain operationally.
  - Align costs with actions that can reduce the costs.
    - Operational.
    - Personnel, organization.
    - Technical.
    - Storage business.
  - Prioritize by performing a more granular ROI analysis for the above investment options.
  - Phased introduction of new technologies and proper training.
  - Periodic econometrics to validate progress.
  - Initial technology recommendations to realize savings:
    - Virtualization.
    - Tiered storage.
  - Develop a multi-stage, phased approach that aligns resources with objectives.
  - More thorough analysis of environment and costs.
- Use of other technologies to:
    - Develop econometrics.
    - Place data into archive tier.
    - Reduce backup time and costs (not measured in this analysis but suspect these are quite high per terabyte).
    - Capacity measurement and gathering.
  - Evaluate other areas for savings in current environment:
    - Is RAID level correct for application requirements?
    - Use of copies, DR, and backup routine.
  - Develop services catalog/portfolio.
  - Develop business management metrics and policies for data retention and data classification.

### Hitachi Data Systems

**Corporate Headquarters**  
2845 Lafayette Street  
Santa Clara, CA 96050-2639 USA  
www.HDS.com

**Regional Contact Information**  
**Americas:** +1 408 970 1000 or info@hds.com  
**Europe, Middle East and Africa:** +44 (0) 1753 618000 or info.emea@hds.com  
**Asia Pacific:** +852 3189 7900 or hds.marketing.apac@hds.com

