Detailed Cost Analysis - Total Cost of Ownership
(a 4 year rollout strategy)

Server Based Computing
Vs.
Traditional Desktop Computers

This table compares implementing a server based computing configuration of 1132 thin client devices versus implementing 1132 desktop computers over a four year period. The server based computing pilot verified the types of staff that can benefit from using server based computing. 1132 computers make up the server based computer user profile. This represents the total cost of implementing a server based computing environment at the Region of York. The cost period extends from 2004 until 2012 since thin clients devices leased in 2007 will end in 2012 (6 year lease cycle.) The assumptions indicated below are included in the total cost analysis.

A. Cost Details and Assumptions – Server Based Computing

1. Servers and network equipment are leased for 5 years.
2. Thin client devices would be leased for 6 years.
3. Built into the estimates is a 20% cushion to deal with unexpected growth and maintenance of thin client devices in years 4, 5, and 6.
4. Built into the estimates is that 5% of staff that are candidates for server based computing will elect to use a desktop computer.
5. 1 server is configured to support each 25 users.
6. 1 Server Based Computing Administrator for every 30 servers.
7. A Server Based Computing Administrator is required to operationize the environment and manage up to 30 servers. 46 servers are required in an 1132 user environment. ITS staff can absorb the administration of the additional servers.
8. Annual maintenance costs are included.
9. Provincial sales tax is included.
10. Per minute salary of the system administrator is $.54. (Average per minute salary of a Business Support Analyst, SA level 1, SA level 2, Network Analyst, System Analyst)
11. The amount of time, in minutes spent by a system administrator in upgrading/maintaining OS and utilities (anti-virus) per device per year is 45 minutes with 12 upgrades per year.
12. The average time to complete a service call for a thin client device is 84 minutes during the pilot.
13. The average service call per thin client device is 2.4 calls/year (results from pilot.)
14. Even though the call average was higher during the pilot, the call average for thin client devices is expected to go down once help desk staff gain a greater understanding of the server based computing environment.

15. The amount of time spent (in minutes) by the system administrator on installing and maintaining an application in 2003 (from Computer Service Request System - CSR) is 10 minutes for a server based computing environment.

16. Average of 6 upgrades per year per device (from CSR system.)

17. Electricity required for a thin client device is .07 kwh.

18. Hours of work is 2040 per year.

19. Electricity cost is .10 per kwh.

B. Cost Details and Assumptions – Traditional Desktop Computers

20. Desktop PC's are leased for three years. Desktop computers are replaced twice during a six year period.

21. Annual maintenance costs are included.

22. Provincial sales tax is included.

23. Per minute salary of the system administrator is $.54. (Average per minute salary of a Business Support Analyst, SA level 1, SA level 2, Network Analyst, System Analyst)

24. The amount of time, in minutes spent by a system administrator in upgrading/maintaining OS and utilities (anti-virus) per device per year is 45 minutes with 12 upgrades per year.

25. The average time to complete a service call for a traditional desktop is 60 minutes.

26. The average service call per desktop PC is 1.5 calls/year.

27. The amount of time spent (in minutes) by the system administrator on installing and maintaining an application in 2003 (from CSR system) is 150 minutes per desktop PC.

28. Average of 6 upgrades per year per device (from CSR system.)

29. Electricity required for a desktop PC is .35 kwh.

30. Hours of work is 2040 per year.

31. Electricity cost is .10 per kwh

2004 - 2007 Implementation Costs	**Units**	**SBC (unit cost for 6 years)**	**Extended (SBC)**	**Traditional Desktop (unit cost for 6 years)**	**Extended (Desktop)**	**Savings**
Computing Devices						
HT T5700/HP Evo 510	1132	1,104	1,249,945	2,797	3,166,430	1,916,485
Configuration, installation, integration and disposal	1132	123	139,372	324	366,768	227,396
Shipping Charges	1132	39	44,012	65	73,354	29,341
Disk Wipe and Data Transfer	1132	0	0	302	342,317	342,317
TFT 1720	1132	1,001	1,132,580	1,668	1,887,633	755,053
Servers						
Metaframe Xpe (S1)	46	11,656	536,196		0	-536,196
Computing Device Software Licenses						
Citrix License (Metaframe XPe)	1132	755	862,284		0	-862,284
Windows Terminal Server CAL	1132	280	324,541		0	-324,541
Rapport/Altris License	1132	157	185,169		0	-185,169
Windows Operating System	1132	0	0	328	371,389	371,389
Windows CAL	1132	0	0	52	58,854	58,854
CA agents including antivirus	1132	0	0	45	50,736	50,736
Office Pro	1132	1,565	1,779,461	1,565	1,771,562	-7,899
Exchange CAL	1132	207	242,630	207	234,732	-7,898
Server Software Licenses (including maintenance)						
Windows 2000 server license	46	2,347	115,864		0	-115,864
CA agents including antivirus for servers (licence)	46	1,625	74,758		0	-74,758
CA agents including antivirus for servers (maint. S1)	46	2,592	119,232		0	-119,232
Netbackup for servers (licence)	46	1,625	74,758		0	-74,758
Netbackup for servers (maintenance S1)	46	1,905	87,636		0	-87,636
Softgrid with additional server CPU	1	6,480	6,480		0	-6,480
Operational Costs						
Operating System Deployment & Upgrade (Per Device): Includes the cost of installing, upgrading, and maintaining the operating system and utilities (e.g., anti-virus software) on servers and end-user devices. Cost Details and Assumptions 10,11,23,24.	1132 and 46	1,750	80,482	1,750	1,980,547	1,900,066
Technical Support - Hardware/Software Maintenance (Per Device): Includes the cost of providing technical support and helpdesk services for end-users including hardware (hard drive replacements), software (OS, utilities, and applications), and network connectivity. Cost Details and Assumptions 10,12,13,23,25,26.	1132	653	739,404	292	330,091	-409,313
Application Deployment and Upgrades (Per Device): These are applications that are installed and maintained during the year. Cost Details and Assumptions 10,15,16,23,27,28.	1132 and 46	194	8,942	2,916	3,300,912	3,291,970
Power Consumption (Per Device). Cost Details and Assumptions	1132	86	96,990	428	484,949	387,959

17,18,19,29,30,31.						
Server Based Computing Administrator. Cost Details and Assumptions 6,7.	1	723,600	723,600	0	0	-723,600
Total			**$8,624,336**		**$14,420,274**	**$5,795,937**