Newfoundland Debrief

Newfoundland LAN Configuration Review

Project No. 464/98

Internal Audit Bureau

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1.0   EXECUTIVE SUMMARY

Newfoundland (NFLD) Regional Headquarters requested the Internal Audit Bureau (IAB) to review the Region's LAN configuration (network and desktop).

The IAB conducted this review within the context of national implementations being contingent upon a stable LAN environment. Incompatibility problems, slow response times and frustrated users can be symptomatic of network and desktop configuration problems. NHQ Systems created national LAN and desktop standards to ensure that all HRDC systems are capable of performing at an acceptable level. The scope included network management, security, infrastructure, server maintenance, client satisfaction and Y2K but not KIOSKS, CS resourcing/workload, and co-location with provincial partners.

The audit team visited the Newfoundland Regional Headquarters, HRCC, ITC, ISP Mail Processing and Walk-In Center in St. John's. Also, the team visited HRCCs in Placentia, Harbour Grace, Cornerbrook, (with two satellite offices at Stephenville and Rocky Harbour), Gander, Grand Falls and Happy Valley.

> The NFLD LAN configuration is in good shape, exceeding the national average on all performance indicators. Similarly, Y2K is progressing well. Reestablishment of the IT Steering Committee is a positive step towards the region's support of IT operations. However, attention must be paid to maintenance of user access, server configuration at the ISP Walk-In Center and upgrading of communication lines to Rocky Harbour and Happy Valley. Also, there should be a strategy that supports the development of managers in managing IT.

Detailed Findings

- When compared to aggregate national performance indicators, the NFLD LAN configuration exceeded all indicators, which included disk space, availability memory, LAN traffic speed to the servers and efficiency of processes.

- Y2000 is progressing well with PCs 100% ready and the region is taking an active role in Contingency Planning and Rollover activities.

- The Regional IT Steering Committee is a value added tool in supporting the management of IT and delivery of the regional HRDC business.

- Between 20-30% of current passwords for accessing our mainframes and micro's are invalid; therefore, managers should immediately review access lists and continue their review on a regular basis.
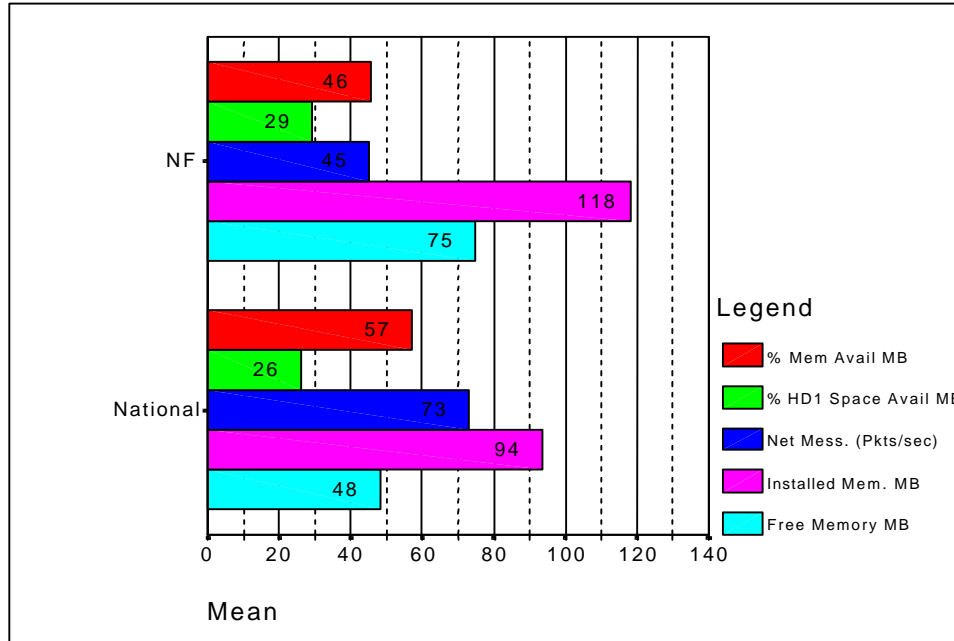

21(a)(b); 17

- Our observations revealed that two sites, Rocky Harbour and Happy Valley have slow connections, which yielded poor local performance. These connections should be reviewed and replaced with the fastest available speeds allowed by HRDC standards.

- Managers did not understand what was expected of them when it came to the area of IT. There is little awareness of monitoring systems performance, security access and in general, IT planning and organization.

- The review team noted different reporting relationships for the TSAs and MSSs in various Districts and HRCCs. This lack of standard reporting relationships may present challenges to the overall regional management of IT.

Next Steps

The Newfoundland Regional IT Steering Committee should consider a strategy for implementing these recommendations.

2.0 TOPIC OF DISCUSSION

Network Management

- The network management software product, 'Final' was used to monitor the status of the Newfoundland's network components and line facilities. Traffic speed, response time and efficiency of processes were measured.

- The preceding graph shows that Newfoundland region exceeds all national norms and standards. However, this method only measured input to the servers and did not examine specific desktop response. Our observations revealed that two sites, Rocky Harbour and Happy Valley have slow connections, that yielded poor local performance. Due to NewTel's restrictions, the bandwidth in Rocky Harbour is only 19.2 Kilobits/second. However, NewTel has resolved the problem in Happy Valley and should be upgraded accordingly.

Recommendation

- Have all lines upgraded to 56k minimum or 128k where possible.

Network Management (by regional breakdown)
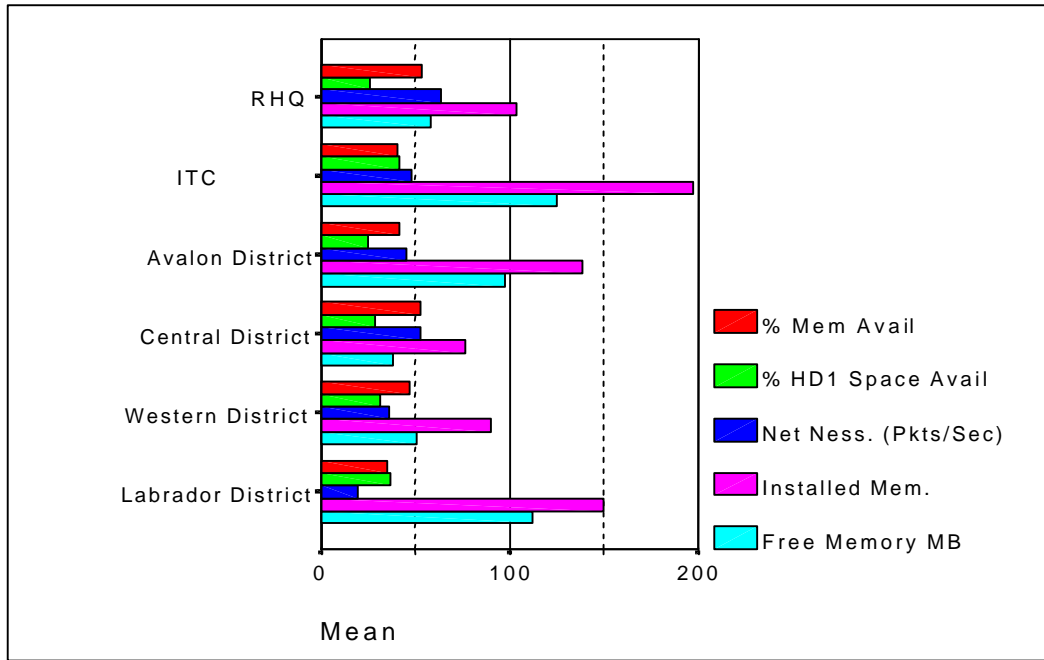
- Load balancing of memory could optimize performance in the Central and Western District by prioritizing these areas for future updates (see Appendix C for more details).

Security

Easylock Users

Valid Vines Users

ISP Valid Users
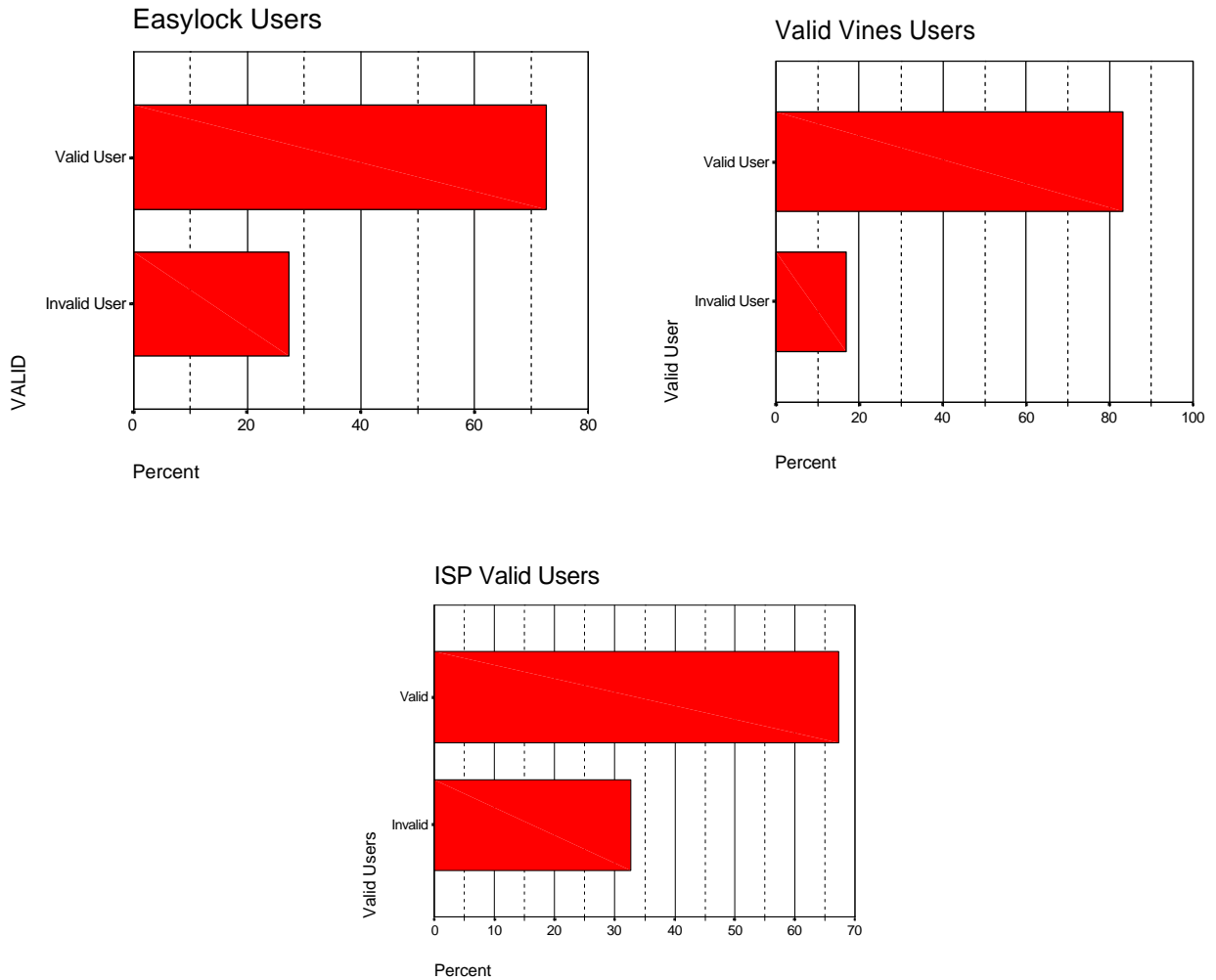
- Reviewed lists of Vines, Novell, Top Secret and EasyLock users.

- Between 20-30% were invalid (movement of personnel not recorded) and User ID reports are not being reviewed on a regular basis.

Recommendation

- Managers should review the above lists immediately and continue monitoring this process on a regular basis.

- Systems staff should be generating Vines user reports to accompany existing EasyLock, Novell and Top Secret user reports to assist in monitoring this process.

Infrastructure /Physical

LAN Room Attributes

Office Name	Percentage Adherance to Industry Standards
RHQ	100
St.John's ITC	88
St.John's Metro	88
ISP Mail Processing	100
ISP Walk In	50
Placentia	63
Harbour Grace	75
Gander	100
Grand Falls	100
Corner Brook	88
Stephenville	75
Happy Valley	75
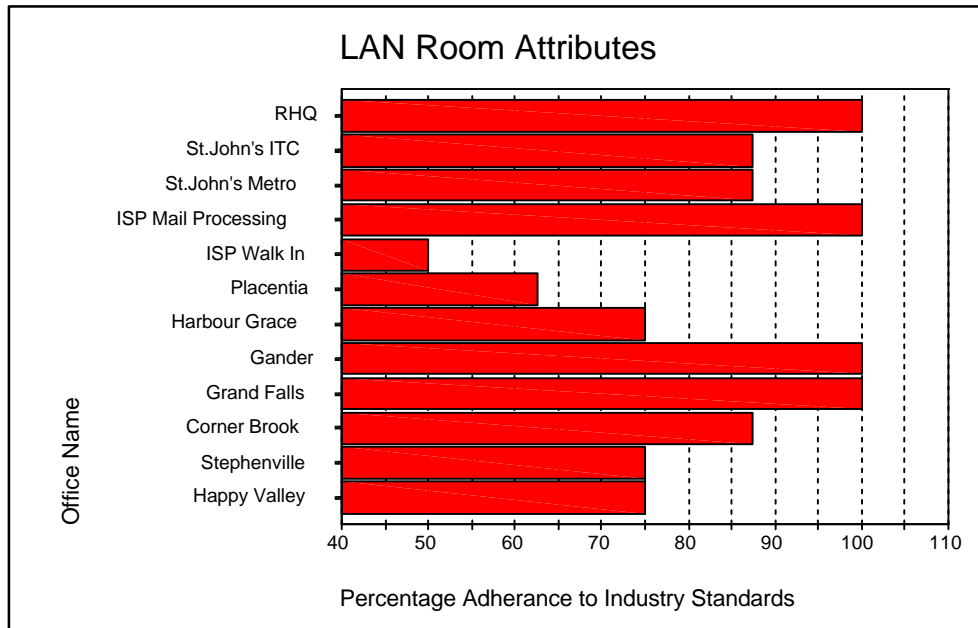
The following criteria were used for the above:

- Air Conditioning
- Fire Protection
- Secured Area (from public)
- Locked LAN Room Doors
- Limited Access Control
- Coded Wiring
- Slab to Slab Walls (floor to ceiling)

Generally, the physical environment for LAN rooms looks reasonable. However, Appendix C indicates some areas lack appropriate attributes. For example, a few offices did not have air conditioning, and/or fire protection.

21(1)(c)(b); 17

Recommendation:

- Consideration should be given to taking appropriate action on the deficiencies indicated in the Appendix C table.

- For ISP Walk In site, high priority should be given to moving the ISSDN Novell server into the CCPU server room.

Management of Technology

- The Regional IT Steering Committee is a value added tool form supporting the management of IT and delivery of the regional HRDC business.
- Managers did not understand what was expected of them when it came to the area of IT. There is little awareness of monitoring systems' performance, security access, general IT planning and organization.
- The review team noted different reporting relationships for the TSAs and MSSs in various Districts and HRCCs. This lack of standard reporting relationships may present challenges to the regional management of IT.
- There is no succession planning for LAN Administrators in some HRCCs (e.g. Happy Valley).

Recommendation

Regional IT Steering Committee should consider:

- a strategy that supports the development of managers for managing IT;
- the merits of a uniform reporting relationship for the TSAs and MSAs.

Desktop Environment

80486DX
26.00 / 3.7%

Celeron
7.00 / 1.0%

Pentium MMX
37.00 / 5.3%

Pentium
146.00 / 21.0%

Pentium II
479.00 / 68.9%
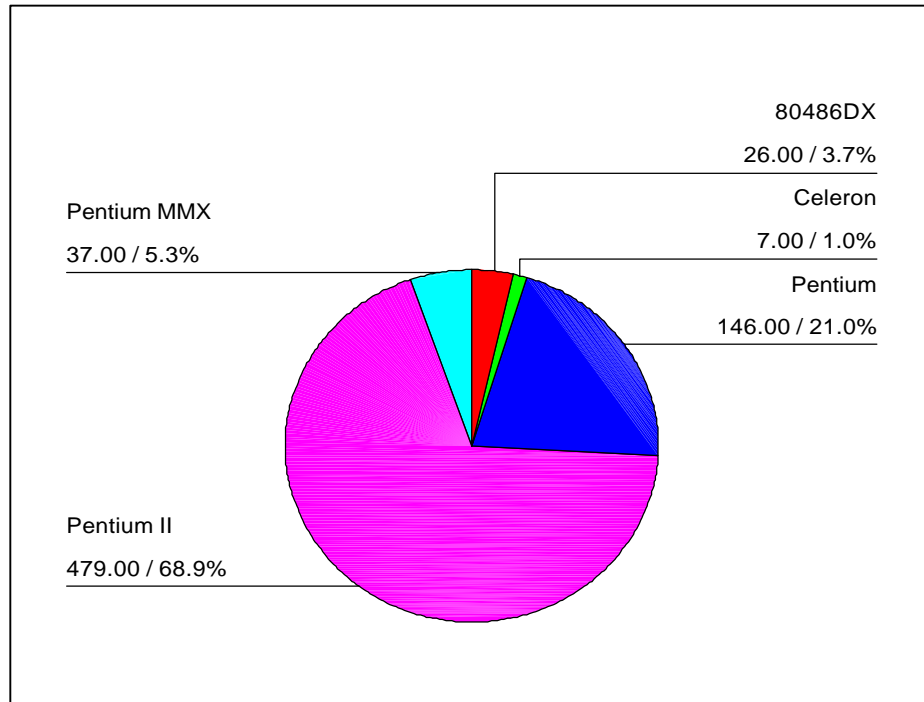
- Our scan of the PCs in Newfoundland region reveals that only a small percentage do not meet the existing standard of Pentiums with 133Mz processor, and should be replaced through a normal replacement process.

- Although PCs meet the standard, several comments were made about machines with integrated motherboards that did not have modular replacement capabilities. Therefore when there is a failure in the network interface card (NIC), the whole motherboard must be replaced. The motherboards are not a product we carry on hand and must be ordered, thereby causing a noticeable disruption of service.

- It should be noted that all PCs are Year 2000 ready.

- Please note that this review did not include Kiosks.

Backup and Recovery Procedures
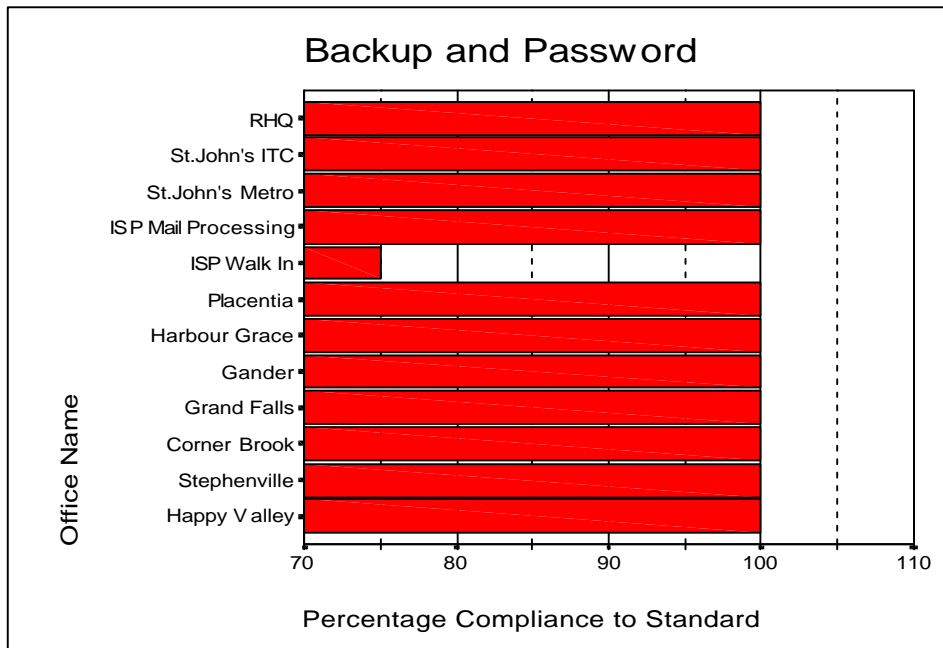
- The backup and password standards are followed with the exception of one office.

- For this review, we must mention that logical access can be defined by, someone who has access to a server room. People should be reminded that security is only a level of deterrent and if access to LAN server rooms becomes available for more than systems' personnel, that level of security becomes compromised.

- St. John's Metro has a potential level of threat because some non-systems' personnel have access to the LAN facilities. The review team was informed that these additional access passes had been given to unauthorized people.

Procedures

Operations Procedures
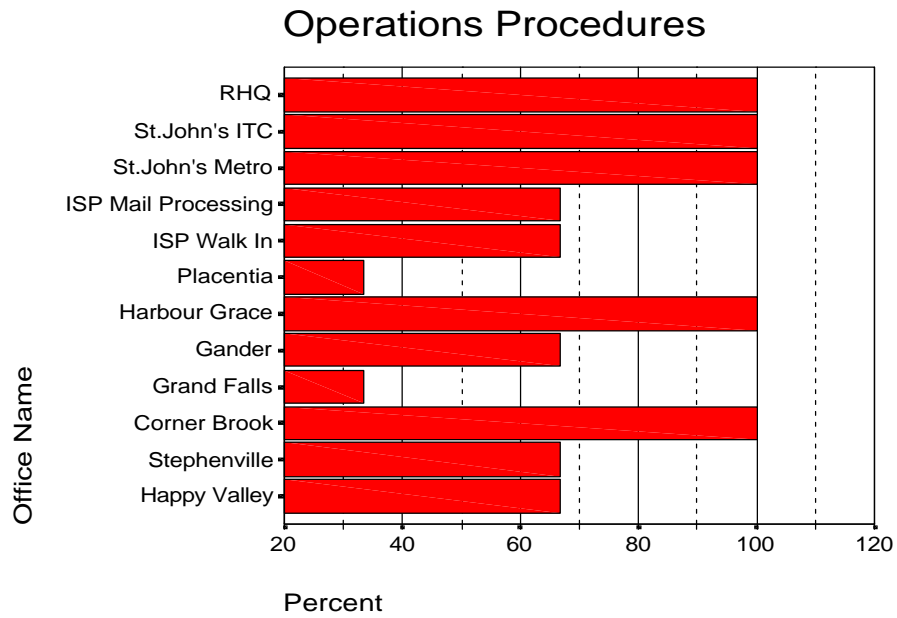
- This section of the review examined the standard Vines installation, documentation and daily procedures. With the exception of two offices visited, documentation was available. However, several offices lacked daily procedures.

Response to Client Needs
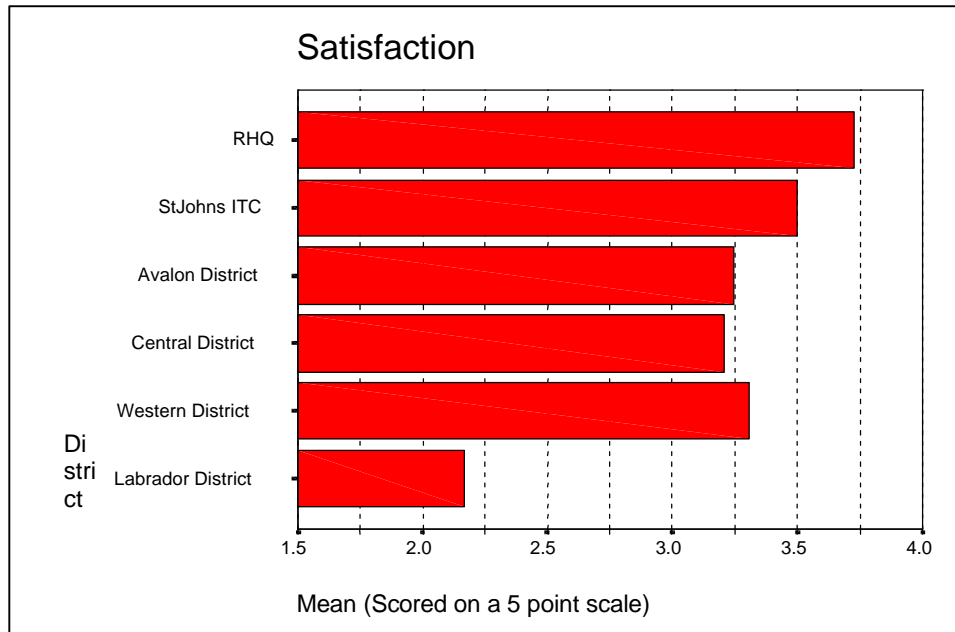
Satisfaction

- The level of service delivered showed that management and technical support staff had higher levels of satisfaction than the general staff (refer to Appendix C). Two areas of concern were training and use of the service desk.

Recommendations

- The IT Steering Committee should review current training requirements for staff and update these where appropriate. In the case of Labrador, attention should be given to marketing the necessity of the service desk and the roles and responsibilities of LAN administration.

Y2K

Y2K Concerns

RHQ	
StJohns ITC	
Avalon District	
Central District	
Western District	
Labrador District	

Mean (Scored on a 5 point scale)
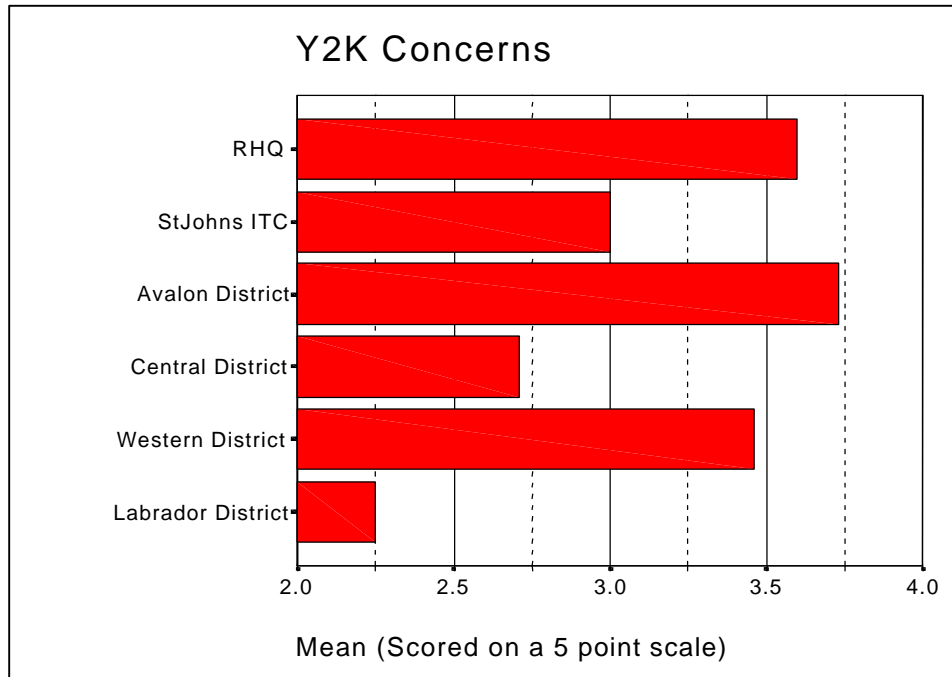
- Five items that were used to measure this topic were concerns related to products, linkages, third party, contingency and rollover.

- The profile of Y2K is becoming a more prominent part of the HRCCs business. While most people are aware of Y2K, they have little involvement. Labrador had stronger concerns around contingency planning and third parties.

- The upgrade to Banyan Vines 8.5 has been implemented successfully.

<div align="right">

APPENDIX A

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GLOSSARY

Megabyte

A unit of computer memory containing approximately one million bytes. **A**bbreviated as MB**.**

Kbps: Kilobits per second.

A common measurement of how fast information is transferred with computers. One kilobit is equal to 1,024 bits. It takes eight bits to make a byte.

Bandwidth

The amount of information that can be transmitted in a given period of time. Phone lines, television cables, computers, and most other communication devices have a bandwidth. When it involves computers, bandwidth is usually expressed in bits per second or bytes per second. The greater the bandwidth, the more information that can be sent. Bandwidth is good. You want lots of bandwidth.

APPENDIX B

PARTICIPANTS

RHQ	RHQ	Name	Bob Picco-InfoManager	1
			Dean Jamieson	1
			Fraser Drover-FASReg.Dire	1
			Jim Ryan-RegSystManager	1
			RHQ MSS Team	1
			RHQ Users	1
			Sandy Kirby-TSA	1
StJohns	St Johns ITC	Name	R.Rumsey/M.Little/D.Alivio-Mgrs.	1
Avalon District	St Johns Metro	Name	Mary Butt-a/TSA	1
			Metro HRCC MSS Team	1
			Metro HRCC Users	1
			Randy Williams-DistrDirec	1
			T.Parrell/D.Coffin-MSS/ISP	1
			Wayne Piercey-HRCCManager	1
	ISP Mail Processing	Name	ISP Mail-In Users	1
			Mike Murin-ISP Mail-In	1
	ISP Walk In	Name	Betty Farrell-ISP Walk-In	1
	Placentia	Name	Placentia Users	1
			Rose Marie Murphy	1
	Harbour Grace	Name	George McNeil-MSS	1
			Harbor Grace Users	1
Central District	Gander	Name	Gander Users	1
			Morgan Pritchard-MSS	1
			Walt Combden	1
			Wayne Ivnay-TSA	1
	Grand Falls	Name	Grand Falls Users	1
			Paula Sheppard-MSS	1
			Tony Brothers-ManCorpServ	1
Western District	Cornerbrook	Name	Brad Duffenais-MSS	1
			Cornerbrook Users	1
			George Gale-a/TSA	1
			J.Parsons/W.Francis-Mgrs.	1
	Stephenville	Name	Francine Burton-MSS	1
			L.Peckford/B.House-Mgrs.	1
			Stephenville Users	1
	RockyHarbour	Name	Rocky Harbor Users	1
Labrador District	Happy Valley	Name	Bob Dillon-ServDelManager	1
			Happy Valley Focus Group	1
			Howard Saunders-TSA	1

APPENDIX C

TABLES

Network Performance

		Net Ness. (Pkts/Sec)	Installed Mem. MB	Free Memory MB	% HD1 Space Avail MB	Drive 1 Size	Drive 1 Free Space
		Mean	Mean	Mean	Mean	Mean	Mean
RHQ	RHQ	63.54	103.85	57.61	25.89	575.75	439.50
StJohns ITC	St Johns ITC	47.74	197.60	124.91	41.38	453.36	258.46
Avalon District	St Johns Metro	46.15	162.82	119.44	23.25	490.96	378.19
	Placentia	9.76	65.15	32.10	22.00	432.00	336.97
	Harbour Grace	69.80	65.15	25.80	34.00	432.00	285.13
Central District	Marystown	41.76	65.15	28.59	34.00	432.00	285.13
	Clarenville	38.24	65.15	36.73	24.13	432.00	327.77
	Gander	83.96	65.15	27.46	28.33	432.00	309.63
	Grand Falls	48.56	65.15	27.07	34.00	432.00	285.13
	Springdale	20.35	130.68	77.62	22.96	1048.00	807.40
Western District	Cornerbrook	34.15	97.89	51.11	25.11	739.71	544.33
	Stephenville	37.55	81.56	49.06	37.18	429.00	269.48
Labrador District	Happy Valley	19.63	149.64	112.05	36.68	863.54	539.54

Passwords Lists

EasyLock		VALID	
		Valid User	Invalid User
office	RHQ St John's	122	61
	ISP Mail Centre	18	2
	ITC St John's	37	5
	ITC St John's	28	2
	Port Aux Basques	13	1
	Springdale	19	9
	Labrador	11	1
	St.John's Metro	153	49
	Placentia	9	
	Happy Valley	37	36
	Rocky Harbour	10	
	St. Anthony	15	1
	Harbour Grace	52	19
	Gander	79	33
	Gander		17
	Grand Falls	53	5
	Stephenville	30	28
	Cornerbrook	71	15
	Happy Valley	2	
	Stephenville	7	
	Cornerbrook	4	
	Grand Falls	3	
	Other	32	18
Total	Count	805	302
	Row %	72.7%	27.3%

Vines				Valid User	
				Valid User	Invalid User
District	RHQ	Office	RHQ	215	70
	St. Johns ITC	Office	St. Johns ITC	90	8
	Avalon District	Office	St. Johns Metro	283	22
			ISP Mail Processing	56	29
			ISP Walk In	10	3
			Placentia	19	
			Harbour Grace	81	1
	Central District	Office	Gander	132	22
			Grand Falls	70	20
			Springdale	20	9
	Western District	Office	Corner Brook	70	18
			Stephenville	96	18
	Labrador District			51	20
Total	Count			1193	240
	Row %			83.3%	16.7%

ISP		Valid Users				Group Total	
		Valid		Invalid			
		Count	Row %	Count	Row %	Count	Row %
location	St.John's Mail Processing	44	58.7%	31	41.3%	75	100.0%
	St.John's Walk In Centre	8	80.0%	2	20.0%	10	100.0%
	Cornerbrook	14	100.0%			14	100.0%
	SACO	2	100.0%			2	100.0%
Group Total		68	67.3%	33	32.7%	101	100.0%

LAN Room Attributes

		air conditioning		Humidity Controls		Fire Protection (Sprinkler, Halon etc.)		Secured Area		Locked Doors (Locked Doors inside Secured Area)	Limited access control to authorized personnel		Wiring labeled/colour coded etc.		Slab to Slab walls	
		Air Conditioned	None	Humidity Control	None	Fire Protection System	None	Secured Area from Public	Open		Authorized personnel Access to LAN Room	Open	Wiring Coded/Labeled	No	Slab to Slab Walls	Open
RHQ	RHQ	1			1	1		1		1	1		1		1	
St.John's ITC	St.John's ITC	1		1		1		1		1	1			1	1	
Avalon District	St.John's Metro	1			1	1		1		1		1	1		1	
	ISP Mail Processing	1			1	1		1		1	1		1		1	
	ISP Walk In		1		1		1	1		1	1			1	1	
	Placentia		1		1	1			1	1	1		1		1	
	Harbour Grace	1			1		1	1		1	1			1	1	
Central District	Gander	1			1	1		1		1	1		1		1	
	Grand Falls	1				1		1		1	1		1		1	
Western District	Corner Brook	1		1		1		1		1	1		1			1
	Stephenville	1		1			1	1		1	1		1			1
Labrador District	Happy Valley	1			1		1		1	1	1		1		1	

Management Issues

Management Results by District

		District					
		RHQ	StJohns ITC	Avalon District	Central District	Western District	Labrador District
Involvement in IT Planning Process	Mean	3.50	3.00	2.83	2.50	2.92	3.00
Communication of Planning Priorities	Mean	3.25	4.00	3.21	2.50	3.33	2.50
Awareness of IT organization	Mean	3.27	1.00	3.44	3.75	3.08	4.00
tools/reports for measuring, monitoring and reporting on internal IT processes.	Mean	2.60	1.00	2.79	1.60	2.60	2.00
Adherence to CIR Process	Mean	3.83	4.00	4.08	5.00	3.60	5.00
Communication process to deal with new technology and change management	Mean	3.70	.	3.44	2.20	3.71	3.00

Desktop Data (Trackit)

Processor Type

				CPUTYPE					
				80486DX	Celeron	Pentium	Pentium II	Pentium MMX	Total
DIST RICT	RHQ	OFFICE	RHQ		1	19	97		117
	St Johns ITC	OFFICE	St Johns ITC				28		28
	Avalon District	OFFICE	St Johns Metro	11		36	91	1	139
			ISP		5		44		49
			CCPU	5	1	19	24		49
			Placentia				15		15
			Harbour Grace			12	26	4	42
	Central District	OFFICE	Gander			13	77	2	92
			Grand Falls	9		10	28	9	56
	Western District	OFFICE	Cornerbrook	1		3	27	18	49
			Stephenville				27	10	1	38
	Labrador District						5	6	2	13
Total	Count			26	7	144	473	37	687
	Row %			3.8%	1.0%	21.0%	68.9%	5.4%	100.0%

Usage

		drive c installed			drive c available			total installed memory		
		Mean	Minimum	Maximum	Mean	Minimum	Maximum	Mean	Minimum	Maximum
RHQ	RHQ	3550.95	1031.00	6169.00	2950.72	8.00	4361.00	35040	16265	100098
St Johns	St Johns ITC	4100.86	4094.00	4102.00	3731.89	3619.00	3909.00	33038	32977	33051
Avalon District	St Johns Metro	3135.83	203.00	4102.00	2754.27	1.00	3980.00	30698	7881	66540
	ISP	3301.51	2047.00	6138.00	2860.88	1450.00	5886.00	57013	33047	133718
	CCPU	3040.27	325.00	6138.00	2720.47	130.00	5843.00	33049	16269	66605
	Placentia	3905.20	1214.00	4102.00	3460.80	528.00	3790.00	33046	33038	33055
	Harbour Grace	3309.40	1203.00	4102.00	2936.14	667.00	3806.00	32640	16269	33051
Central District	Gander	3764.48	1031.00	6130.00	3352.63	560.00	5767.00	39247	16269	83374
	Grand Falls	3012.21	325.00	6130.00	2603.80	37.00	5766.00	42632	16269	133652
Western District	Cornerbrook	2779.92	203.00	4102.00	2374.08	95.00	3751.00	32175	16269	33051
	Stephenville	1958.45	1203.00	2047.00	1573.42	790.00	1719.00	31283	16269	33051
Labrador District	Happy Valley	2644.15	1207.00	4094.00	2221.62	554.00	3724.00	33044	33030	33051

Security/Backups

| | | Backup and recovery (20 day, 5 day) | Offsite storage | | Logical Access to Server | | Password Administration (Forced password changes etc.) | SECPER |
			Offsite Storage	None	Access to Authorized Personnel Only	Other Personnel with Acess		Maximum
RHQ	RHQ	11	11		11		11	100.00
St.John's ITC	St.John's ITC	3	3		3		3	100.00
Avalon District	St.John's Metro	6	6		6		6	100.00
	ISP Mail Processing	1	1		1		1	100.00
	ISP Walk In		1	1	2		2	75.00
	Placentia	1	1		1		1	100.00
	Harbour Grace	1	1		1		1	100.00
Central District	Gander	3	3		2	1	3	100.00
	Grand Falls	1	1		1		1	100.00
Western District	Corner Brook	2	2		2		2	100.00
	Stephenville	2	2		2		2	100.00
Labrador District	Happy Valley	3	3		3		3	100.00

Procedures

		Banyan Vines 8.5	Documentation		Daily Procedures		OPSPER
			Documentation	None	Daily Procedures	Not Available	
RHQ	RHQ	11	11				66.67
St.John's ITC	St.John's ITC	3	3		3		100.00
Avalon District	St.John's Metro	6	6		6		75.00
	ISP Mail Processing	1	1			1	16.67
	ISP Walk In	1	2			2	50.00
	Placentia	1		1		1	33.33
	Harbour Grace	1	1		1		50.00
Central District	Gander	3	3			3	66.67
	Grand Falls	1					33.33
Western District	Corner Brook	2	2		2		33.33
	Stephenville	2	2			2	44.44
Labrador District	Happy Valley	3	3			3	66.67

Satisfaction

Satisfaction Results by District

		District					
		RHQ	StJohns ITC	Avalon District	Central District	Western District	Labrador District
Satisfaction with support/equipment to do your job from local manager and RHQ?	Mean	3.79	2.00	3.46	3.33	4.40	4.00
Satisfaction with IT support services received? Concerns?	Mean	3.33	4.00	3.18	4.00	3.39	2.00
Improvement in IT service/performance from the past?	Mean	3.75	4.00	3.79	3.60	3.89	2.50
Adequate training on technology that you use to do your job?	Mean	4.00	4.00	2.54	2.29	2.33	1.33

Y2K

Y2K Results by District

		District					
		RHQ	StJohns ITC	Avalon District	Central District	Western District	Labrador District
Any Y2K Product concerns?	Mean	4.00	5.00	3.64	4.00	3.75	3.00
Any Y2K Third Party concerns?	Mean	2.00	4.00	3.60	2.00	3.88	1.50
Any Y2K Contingency Plan concerns?	Mean	3.00	4.00	3.63	1.33	3.00	1.00
Any Y2K Rollover concerns?	Mean	3.50	1.00	3.45	2.00	3.00	1.50