

DEPARTMENT OF COMMUNICATIONS

MSAT PHASE B

THE IMPACT OF MSAT ON THE RADIO COMMON CARRIER INDUSTRY

JANUARY 1985

VOLUME III - MODELLING DATA

FINAL REPORT

APRIL 1985

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KVA

**KVA Communications
and Electronics Co.**

Radio Communications System Specialists

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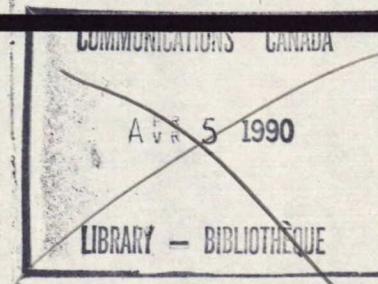
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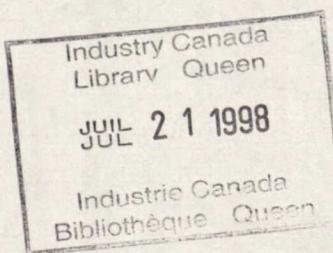
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THE IMPACT OF MSAT ON THE RADIO COMMON CARRIER INDUSTRY

JANUARY 1985



VOLUME III - MODELLING DATA



FINAL REPORT

APRIL 1985

KVA

KVA Communications
and Electronics Co.

IN COLLABORATION WITH: WARD MALLETTTE CHARTERED ACCOUNTANTS
Radio Communications System Specialists



Government of Canada
Department of Communications
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Ottawa, Ontario
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Ministère des Communications

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DEPARTMENT OF COMMUNICATIONS - OTTAWA - CANADA

SPACE PROGRAM

TITLE: Study to Assess the Impact of MSAT on Radio Common Carriers *2/F* *Final report*

AUTHOR(S): Sheila Flynn
Mike Kedar

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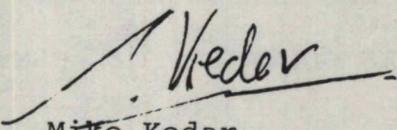
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DATE: January 25, 1985

Canada

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Mike Kedar
January 1985

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MSAT/RCC Impact Study

Volume III

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VOLUME III - INTRODUCTION

Volume III includes the inputs used in the economic model runs to derive the impact of MSAT on the RCCs industry as determined from the net present value (NPV) calculation for the years 1989 - 2002. The inputs consist of the market forecasts and all revenue, expense and capital investment figures relevant to the RCCs service provisioning of MSAT. Model outputs provide the cash inflows, cash outflows and present worth of the net cash flows. All calculations are in current dollars and the NPV is discounted to 1984.

Each specific model run is discussed in further detail below:

Economic Model Inputs

The input data was collected through questionnaire and personnel interviews with RCCs based on the MSAT pricing strategy presented to them.

Economic Model Run 1 - Outputs

Run 1 is based on the RCCs providing only mobile radio (MRS) and mobile telephone service (MTS). The outputs demonstrate the viability of these services to the RCCs industry.

Sensitivity Runs

Economic Model Run 2 - Outputs

For run 2, the outputs are based on the inclusion of mobile paging service (MPS) and data acquisition and control service (DACS).

Economic Model Run 3 - Outputs

Run 3 is a market sensitivity run in which the market forecast for all services is decreased by 20.4% and airtime retail/wholesale prices are increased by 30%.

Economic Model Run 4 - Outputs

Run 4 is a market sensitivity run in which the market forecast for all services is increased by 16.7% and airtime retail/wholesale prices are decreased by 30%.

Economic Model Run 5 - Outputs

Run 5 is a market sensitivity run in which the market forecast for all services is decreased by 29% and the retail/wholesale prices of mobile units are increased by 30%.

Economic Model Run 6 - Outputs

Run 6 is a market sensitivity run in which the market forecast for all services is increased by 20.1% and the retail/wholesale prices of mobile units are decreased by 30%.

KVA Communications and Electronics Co.

MSAT Economic Model Inputs

KVA Communications and Electronics Co.

Revised: Nov 27 /84
 Run No.:1-RCC
 Date :Oct 10/84

ECONOMIC MODEL INPUTS
 RCC Impact Study
 (in 1984 constant dollars)

Province: Ontario

		SERVICE			
	Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:		0	0	0	0
FR: Failures/100 mobile terminals					
- rental:	50	100	50	50	
- customer owned:	50	100	50	50	
ISC: Selling cost/mobile terminal:	498	45	540	510	
BBD: Billing & collection cost/mobile terminal					
- rental:	18	18	18	18	
- customer owned:	18	18	18	18	
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A	
MCFC: Maintenance cost fixed common base stations and gateways					
- % of investment per annum:	5.3	5.3	4.9	5.3	
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0	
ST:					
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0	
Y: % of units installed that are reinstallation					
- rental:	30	0	30	0	
- customer owned:	30	0	30	0	
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00	
M: # minutes of airtime/unit/annum:	1800	78	1800	82	

Notes: CF = ST + Y (Rentals)

Revised: Nov 27/84

Run No.: 1-RCC

Date : Oct 10/84

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: All Provinces

		SERVICE			
	Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
LS: Percentage of Switchover MSAT mobile terminals rented out by service provider:		50	85	50	50
RA: Percentage of Additional MSAT mobile terminals rented out by service provider:		50	85	50	50
Scenario II - Optimistic Price + % change in total units:		19	9	19	19
Scenario II - Pessimistic Price - % change in total units:		26	16	26	26
Scenario I - Most Likely Price + % change in total units:		12	12	12	12
Scenario III - Most Likely Price + % change in total units:		26	26	26	26
p: proportion of fixed investment in common base stations and gateways that is replaced:		0.0	0.0	0.0	0.0
IR: Mobile Terminal installation charge/installation:		194	0	194	768
REP: Mobile Terminal repair charge/repair:		194	44	194	581
RF: Mobile terminal rental charges/unit/month/\$1000 equivalent retail price:	\$14.92/\$1000 end user mobile cost				
CT: Average monthly profit per mobile displaced by MSAT:		15	0	25	0
IC: Mobile terminal installation cost/installation:		155	0	155	614
URC:Mobile terminal removal cost/removal:		35	0	35	379
RPC: Mobile terminal repair cost/repair:		155	35	155	464

KVA Communications and Electronics Co.

Revised: Nov 27/84

Run No.:1-RCC
Date :Oct 10/84

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: Atlantic

SERVICE

Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0
FR: Failures/100 mobile terminals				
- rental:	50	100	50	50
- customer owned:	50	100	50	50
ISC: Selling cost/mobile terminal:	498	45	540	510
BBD: Billing & collection cost/mobile terminal				
- rental:	18	18	18	18
- customer owned:	18	18	18	18
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A
MCFC: Maintenance cost fixed common base stations and gateways				
- % of investment per annum:	5.3	5.3	4.9	5.3
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0
ST:				
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0
Y: % of units installed that are reinstallation				
- rental:	30	0	30	0
- customer owned:	30	0	30	0
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00
M: # minutes of airtime/unit/annum:	1800	78	1800	82
Notes: CF = ST + Y (Rentals)				

KVA Communications and Electronics Co.

Revised: Nov 27/84
 Run No.:1-RCC
 Date :Oct 10/84

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: Quebec

	SERVICE			
Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0
FR: Failures/100 mobile terminals				
- rental:	50	100	50	50
- customer owned:	50	100	50	50
ISC: Selling cost/mobile terminal:	498	45	540	510
BBD: Billing & collection cost/mobile terminal				
- rental:	18	18	18	18
- customer owned:	18	18	18	18
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A
MCFC: Maintenance cost fixed common base stations and gateways				
- % of investment per annum:	5.3	5.3	4.9	5.3
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0
ST:				
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0
Y: % of units installed that are reinstallation				
- rental:	30	0	30	0
- customer owned:	30	0	30	0
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00
M: # minutes of airtime/unit/annum:	1800	78	1800	82
Notes: CF = ST + Y (Rentals)				

Revised: Nov 27/84
 Run No.: 1-RCC
 Date : Oct 10/84

ECONOMIC MODEL INPUTS
 RCC Impact Study
 (in 1984 constant dollars)

Province: Manitoba

SERVICE

Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0
FR: Failures/100 mobile terminals				
- rental:	50	100	50	50
- customer owned:	50	100	50	50
ISC: Selling cost/mobile terminal:	498	45	540	510
BBD: Billing & collection cost/mobile terminal				
- rental:	18	18	18	18
- customer owned:	18	18	18	18
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A
MCFC: Maintenance cost fixed common base stations and gateways				
- % of investment per annum:	5.3	5.3	4.9	5.3
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0
ST:				
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0
Y: % of units installed that are reinstallation				
- rental:	30	0	30	0
- customer owned:	30	0	30	0
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00
M: # minutes of airtime/unit/annum:	1896	78	1830	82
Notes: CF = ST + Y (Rentals)				

KVA Communications and Electronics Co.

Revised: Nov 27/84

Run No.:1-RCC

Date :Oct 10/84

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: Saskatchewan

SERVICE

Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0
FR: Failures/100 mobile terminals				
- rental:	50	100	50	50
- customer owned:	50	100	50	50
ISC: Selling cost/mobile terminal:	498	45	540	510
BBD: Billing & collection cost/mobile terminal				
- rental:	18	18	18	18
- customer owned:	18	18	18	18
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A
MCFC: Maintenance cost fixed common base stations and gateways				
- % of investment per annum:	5.3	5.3	4.9	5.3
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0
ST:				
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0
Y: % of units installed that are reinstallation				
- rental:	30	0	30	0
- customer owned:	30	0	30	0
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00
M: # minutes of airtime/unit/annum:	1800	78	1800	82

Notes: CF = ST + Y (Rentals)

KVA Communications and Electronics Co.

Revised: Nov 27 /84

Run No.:1-RCC
Date :Oct 10/84

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: B. C.

		SERVICE			
Revenue Expense & Investment Components	MRS	MPS	MTS	DACS	
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0	
FR: Failures/100 mobile terminals					
- rental:	50	100	50	50	
- customer owned:	50	100	50	50	
ISC: Selling cost/mobile terminal:	498	45	540	510	
BBD: Billing & collection cost/mobile terminal					
- rental:	18	18	18	18	
- customer owned:	18	18	18	18	
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A	
MCFC: Maintenance cost fixed common base stations and gateways					
- % of investment per annum:	5.3	5.3	4.9	5.3	
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0	
ST:					
% of rentals that are terminations/year:	11.0	20.0	11.0	20.0	
Y: % of units installed that are reinstallation					
- rental:	30	0	30	0	
- customer owned:	30	0	30	0	
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00	
M: # minutes of airtime/unit/annum:	1800	78	1800	82	
Notes: CF = ST + Y (Rentals)					

Revised: Nov 27/84

Run No.: 1-RCC

Date : Oct 10/8

ECONOMIC MODEL INPUTS
RCC Impact Study
(in 1984 constant dollars)

Province: Alberta

SERVICE

Revenue Expense & Investment Components	MRS	MPS	MTS	DACS
VTI: Assumed value of a mobile terminal trade-in:	0	0	0	0
FR: Failures/100 mobile terminals				
- rental:	50	100	50	50
- customer owned:	50	100	50	50
ISC: Selling cost/mobile terminal:	498	45	540	510
BBD: Billing & collection cost/mobile terminal				
- rental:	18	18	18	18
- customer owned:	18	18	18	18
UHFP: Premium for UHF Airtime: (ratio of UHF airtime cost to SHF airtime cost)	1.6	1.6	1.6	N/A
MCFC: Maintenance cost fixed common base stations and gateways				
- % of investment per annum:	5.3	5.3	4.9	5.3
NREI: % of rental mobiles held in repair stock:	5.0	10.0	10.0	5.0
ST: % of rentals that are terminations/year:	11.0	20.0	11.0	20.0
Y: % of units installed that are reinstallation				
- rental:	30	0	30	0
- customer owned:	30	0	30	0
LTC: Labour training cost/mobile terminal/annum:	2.00	0.00	2.00	2.00
M: # minutes of airtime/unit/annum:	1800	78	1800	82
Notes: CF = ST + Y (Rentals)				

REVISED Nov. 2

Province: All Provinces

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

Run No. 1-RCC
Date: October 2, 1984

YEAR

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Capital investment recovery component/unit/month														
- MRS	4.62	3.89	3.82	3.10	3.09	3.09	3.09	2.67	2.65	2.62	2.61	2.62	2.62	2.62
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	35.15	10.41	5.81	5.13	5.23	5.44	5.44	4.91	4.71	4.55	4.46	4.41	4.41	4.51
- DACS	0.39	0.37	0.39	0.35	0.34	0.33	0.32	0.27	0.26	0.25	0.25	0.24	0.24	0.24
AC2: Telesat wholesale access fees/unit/month (in current 1984 dollars)														
- MRS	30.00	30.00	30.00	34.00	34.00	34.00	34.00	39.50	39.50	39.50	44.50	44.50	44.50	44.50
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	30.00	30.00	30.00	34.00	34.00	34.00	34.00	39.50	39.50	39.50	44.50	44.50	44.50	44.50
- DACS	10.00	10.00	10.00	11.35	11.35	11.35	11.35	13.15	13.15	13.15	14.85	14.85	14.85	14.85
AT1: Retail end user airtime charges/unit/minute (in current 1984 dollars) SHF														
- MRS	1.88	1.88	1.88	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.75	2.75	2.75	2.75
- MPS	1.88	1.88	1.88	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.75	2.75	2.75	2.75
- MTS	1.88	1.88	1.88	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.75	2.75	2.75	2.75
- DACS	8.420	9.178	9.738	13.475	13.065	12.867	12.549	13.431	13.127	12.790	13.732	13.544	13.459	13.417
AT2: Wholesale airtime costs/unit/minute charged by Telesat (in current 1984 dollars)														
SHF	- MRS	1.50	1.50	1.50	1.70	1.70	1.70	1.70	2.00	2.00	2.00	2.20	2.20	2.20
	- MPS	1.50	1.50	1.50	1.70	1.70	1.70	1.70	2.00	2.00	2.00	2.20	2.20	2.20
	- MTS	1.50	1.50	1.50	1.70	1.70	1.70	1.70	2.00	2.00	2.00	2.20	2.20	2.20
	- DACS	6.736	7.343	7.790	10.780	10.452	10.293	10.039	10.745	10.502	10.232	10.986	10.835	10.767
SP: Retail selling price of a mobile terminal	- MRS	3747	3686	3626	3568	3511	3455	3401	3347	3347	3347	3347	3347	3347
	- MPS	275	275	275	275	275	275	275	275	275	275	275	275	275
	- MTS	4675	4597	4513	4435	4357	4283	4210	4139	4139	4139	4139	4139	4139
	- DACS	4141	3947	3789	3569	3547	3501	3468	3436	3465	3497	3516	3533	3540
BP: Wholesale terminal costs to service provider	- MRS	2998	2949	2901	2855	2809	2764	2721	2677	2677	2677	2677	2677	2677
	- MPS	220	220	220	220	220	220	220	220	220	220	220	220	220
	- MTS	3740	3678	3611	3548	3486	3426	3368	3311	3311	3311	3311	3311	3311
	- DACS	3312	3158	3031	2855	2838	2801	27	2749	2772	2797	2813	2826	2832

REVISED Nov. 27

Province: Ontario

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

Run No. 1-RCC
Date: October 9, 1984

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units - MRS	280	837	1536	2316	2970	3456	3960	4536	5203	5616	6348	6840	7560	8382
- MPS	12395	15750	19600	23450	27823	32300	36750	41300	46705	52503	59151	68226	76190	90771
- MTS	90	259	499	1036	1214	1427	1681	1957	2254	2509	2728	2962	3108	3304
- DACS	234	310	391	576	616	696	855	1048	1253	1488	1723	1950	2164	2375
A: Percentage of Units Switching Over														
- MRS	37.3	33.3	29.2	24.1	18.9	13.7	8.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year														
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.56	11.19	12.60	16.20	9.17	7.13	7.10
AP: Promotional cost - % of revenue														
	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ACI: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

REVISED

Run No. 1-RCC
Date: October 9, 1984

Province: British Columbia

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units - MRS	146	422	929	1642	1938	2304	2664	3060	3473	3906	4377	4950	5526	6120
- MPS	1362	1575	1925	2340	2940	3325	4200	5040	6299	7831	9209	9935	10959	11891
- MTS	29	90	192	437	559	691	829	990	1149	1289	1427	1574	1692	1807
- DACS	276	363	478	738	1009	1214	1437	1690	1953	2239	2539	2863	3172	3496
A: Percentage of Units Switching Over														
- MRS	31.7	28.5	25.2	21.2	17.0	13.1	8.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.01	8.33	13.17	18.44	7.21	7.62	6.90
AP: Promotional cost - % of revenue	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AC1: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

REVISED Nov. 27,

Province: Alberta

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

Run No. 1-RCC
Date: October 9, 1984

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units	116	393	843	1512	1800	2232	2664	3132	3600	4140	4609	5202	5526	7164
- MRS	3810	4200	4900	6125	7380	8925	10500	13125	14640	16018	17356	18302	19482	19762
- MPS	25	75	154	345	424	530	633	748	869	1013	1140	1190	1427	1600
- MTS	169	195	230	313	399	480	579	693	812	940	1072	1210	1308	1416
A: Percentage of Units Switching Over														
- MRS	39.0	34.2	29.4	23.2	17.4	11.3	8.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.29	8.41	11.83	16.71	6.37	8.42	7.70
AP: Promotional cost - % of revenue	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ACI: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

Province: Saskatchewan

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

Run No. 1-RCC
Date: October 9, 1984

REVISED Nov. 27, 1

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units	63	178	359	648	760	864	936	972	1013	1080	1108	1152	1224	1332
- MRS	535	621	735	866	1008	1238	1527	1769	2043	2269	2479	2745	3045	3517
- MPS	4	13	27	61	69	81	109	121	139	161	182	215	242	282
- MTS	71	72	83	115	144	166	186	209	236	260	285	315	345	382
A: Percentage of Units Switching Over														
- MRS	48.0	43.0	38.0	33.0	28.0	24.7	21.4	18.1	15.0	14.2	13.4	12.6	11.8	11.0
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.42	11.33	16.96	26.00	9.28	8.48	6.88
AP: Promotional cost - % of revenue	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AC1: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

REVISED Nov. 27, 198

Run No. 1-RCC
Date: October 9, 1984

Province: Quebec

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

KVA Communications and Electronics Co.

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units														
- MRS	195	519	1041	1800	2149	2538	2952	3420	3866	4356	4824	5382	5922	6480
- MPS	9378	11200	13300	15925	18978	21700	25200	28700	32731	37375	43212	49700	58795	65650
- MTS	39	116	230	506	614	737	852	944	1042	1140	1243	1376	1473	1600
- DACS	242	317	415	595	745	915	1085	1273	1469	1687	1912	2154	2384	2624
A: Percentage of Units Switching Over														
- MRS	40.3	35.1	29.9	23.9	17.8	11.6	5.2	5.0	5.0	5.0	5.0	5.0	5.0	5.0
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year														
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.15	9.19	12.95	18.85	7.52	7.58
AP: Promotional cost - % of revenue														
	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ACL: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

Run No. 1-RCC
Date: October 9, 1984

A division of Kedar & Associates Ltd.
Province: Manitoba

Economic Model Inputs
RCC Impact Study
(in 1984 constant dollars)

	YEAR													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario II - most likely price														
Total Units	69	200	396	702	830	936	1008	1080	1106	1170	1243	1332	1422	1541
- MRS	611	710	840	990	1152	1415	1745	2022	2335	2593	2834	3137	3479	4019
- MPS	5	15	31	69	79	92	124	138	159	184	207	245	276	322
- MTS	77	82	99	140	177	208	241	279	320	361	403	451	495	546
A: Percentage of Units Switching Over														
- MRS	43.0	39.8	35.5	31.4	25.2	18.9	12.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
- MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- MTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DACS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WO: % of units replaced per year														
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.49	11.63	16.79	25.37	9.57	7.50
AP: Promotional cost - % of revenue														
	4.9	4.0	3.4	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
AFI: Avg. fixed investment/unit														
- MRS	442.35	345.35	358.89	175.98	292.85	0.00	0.00	108.87	243.14	234.47	240.61	261.91	275.91	0.00
- MPS	2.33	1.82	1.89	0.93	1.54	0.00	0.00	0.57	1.28	1.23	1.27	1.38	1.45	0.00
- MTS	3367.22	0.00	91.78	379.19	353.65	0.00	0.00	428.62	420.55	336.26	331.10	341.59	440.10	0.00
- DACS	37.49	32.57	36.38	20.14	32.30	0.00	0.00	11.08	24.07	22.48	22.62	24.21	25.30	0.00
PSHF: Proportion of total airtime minutes on SHF														
- MRS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MPS	0.905	0.903	0.900	0.897	0.895	0.892	0.890	0.888	0.886	0.884	0.882	0.881	0.880	0.880
- MTS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
- DACS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AC1: Retail access/charge (current 1984 dollars)														
Marked-up Telesat access cost/unit/month														
- MRS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- MPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- MTS	37.50	37.50	37.50	42.50	42.50	42.50	42.50	49.38	49.38	49.38	55.63	55.63	55.63	55.63
- DACS	12.50	12.50	12.50	14.19	14.19	14.19	14.19	16.44	16.44	16.44	18.56	18.56	18.56	18.56

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 1 - Outputs

MRS and MTS Only

KVA Communications and Electronics Co.

1

ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000's)

REGION	CANADA						
INCREMENTAL REVENUE	1989	1990	1991	1992	1993	1994	1995
MRS AIRTIME FEES	3216	9439	18880	36240	43784	51741	59595
ACCESS FEES	480	1384	2772	5128	6215	7364	8511
EQUIP. SALES	441	879	1371	1943	1020	1103	1123
EQUIP. RENTALS	395	1194	2461	4284	5340	6505	7729
REPAIR REVENUES	57	176	368	650	824	1020	1231
INSTALLATION REV'S.	322	750	1337	2124	1915	2292	2660
	-----	4911	13822	27188	50369	59098	70025
MTS AIRTIME FEES	715	2109	4217	10271	12293	14734	17470
ACCESS FEES	203	374	663	1563	1891	2300	2750
EQUIP. SALES	122	246	384	911	346	431	499
EQUIP. RENTALS	109	334	688	1526	1884	2330	2852
REPAIR REVENUES	13	39	83	186	234	295	367
INSTALLATION REV'S.	72	168	301	704	538	679	832
	-----	1233	3270	6336	15162	17186	20768
MPS AIRTIME FEES	0	0	0	0	0	0	0
ACCESS FEES	0	0	0	0	0	0	0
EQUIP. SALES	0	0	0	0	0	0	0
EQUIP. RENTALS	0	0	0	0	0	0	0
REPAIR REVENUES	0	0	0	0	0	0	0
INSTALLATION REV'S.	0	0	0	0	0	0	0
	-----	0	0	0	0	0	0
MDS AIRTIME FEES	0	0	0	0	0	0	0
ACCESS FEES	0	0	0	0	0	0	0
EQUIP. SALES	0	0	0	0	0	0	0
EQUIP. RENTALS	0	0	0	0	0	0	0
REPAIR REVENUES	0	0	0	0	0	0	0
INSTALLATION REV'S.	0	0	0	0	0	0	0
	-----	0	0	0	0	0	0
TOTAL	6144	17092	33523	65532	76284	90793	105618
AGGREGATE	-----	-----	-----	-----	-----	-----	-----
SHF AIRTIME FEES	3409	9988	19897	40052	48157	56881	65810
UHF AIRTIME FEES	522	1560	3200	6460	7919	9594	11255
ACCESS FEES	683	1758	3435	6691	8106	9664	11261
EQUIP. SALES	563	1125	1755	2854	1366	1534	1622
EQUIP. RENTALS	504	1528	3149	5809	7223	8835	10580
REPAIR REVENUES	70	215	450	837	1058	1315	1598
INSTALLATION REV'S.	393	919	1637	2828	2453	2971	3492
TOTAL	-----	6144	17092	33523	65532	76284	90793
CUMULATIVE	-----	6144	23236	56760	122291	198575	289369
	-----	-----	-----	-----	-----	-----	394987

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000'S)

REGION	CANADA						
INCREMENTAL REVENUE	1996	1997	1998	1999	2000	2001	2002
MRS AIRTIME FEES	80170	90440	100649	123303	136355	149226	170028
ACCESS FEES	11009	12444	13877	17246	19148	21039	24080
EQUIP. SALES	1259	1350	1407	1635	1807	1870	3187
EQUIP. RENTALS	9112	10775	12572	14662	17012	19535	23362
REPAIR REVENUES	1475	1744	2035	2373	2754	3162	3782
INSTALLATION REV.	3148	3642	4152	4839	5562	6269	8047
	106172	120395	134692	164059	182638	201102	232486
MTS AIRTIME FEES	23740	27203	30517	36959	40401	43837	47538
ACCESS FEES	3577	4103	4613	5646	6205	6783	7439
EQUIP. SALES	519	583	586	572	610	640	723
EQUIP. RENTALS	3408	4101	4830	5584	6409	7302	8314
REPAIR REVENUES	446	537	632	731	839	956	1088
INSTALLATION REV.	975	1154	1312	1467	1662	1867	2124
	32666	37680	42490	50959	56125	61384	67227
MPS AIRTIME FEES	0	0	0	0	0	0	0
ACCESS FEES	0	0	0	0	0	0	0
EQUIP. SALES	0	0	0	0	0	0	0
EQUIP. RENTALS	0	0	0	0	0	0	0
REPAIR REVENUES	0	0	0	0	0	0	0
INSTALLATION REV.	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
MDS AIRTIME FEES	0	0	0	0	0	0	0
ACCESS FEES	0	0	0	0	0	0	0
EQUIP. SALES	0	0	0	0	0	0	0
EQUIP. RENTALS	0	0	0	0	0	0	0
REPAIR REVENUES	0	0	0	0	0	0	0
INSTALLATION REV.	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
TOTAL	138837	158075	177182	215017	238763	262486	299713
AGGREGATE							
SHF AIRTIME FEES	88540	100019	111253	135566	149292	162830	183309
UHF AIRTIME FEES	15370	17624	19913	24696	27463	30234	34257
ACCESS FEES	14586	16548	18490	22892	25353	27822	31518
EQUIP. SALES	1778	1933	1993	2207	2417	2510	3910
EQUIP. RENTALS	12520	14875	17402	20246	23421	26837	31677
REPAIR REVENUES	1921	2281	2667	3104	3593	4118	4870
INSTALLATION REV.	4123	4796	5464	6306	7224	8136	10171
TOTAL	138837	158075	177182	215017	238763	262486	299713
CUMULATIVE	533824	691899	869081	1084099	1322861	1585348	1885061

LEGEND

MRS:MOBILE RADIO SERVICE
MPS:MOBILE PAGING SERVICE

MTS:MOBILE TELEPHONE SERVICE
MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000's)

REGION CANADA

INCREMENTAL REVENUE	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	1073066	222895	850172
ACCESS FEES	150698	31855	118843
EQUIP. SALES	20393	7879	12514
EQUIP. RENTALS	134936	27906	107030
REPAIR REVENUES	21651	4326	17325
INSTALLATION REV.	47060	11400	35660

----- 1447805 308261 1141544 -----

MTS AIRTIME FEES	312005	61810	250195
ACCESS FEES	48108	9743	38366
EQUIP. SALES	7174	2940	4233
EQUIP. RENTALS	49670	9722	39948
REPAIR REVENUES	6446	1217	5229
INSTALLATION REV.	13853	3294	10559

----- 437256 88726 348530 -----

MPS AIRTIME FEES	0	0	0
ACCESS FEES	0	0	0
EQUIP. SALES	0	0	0
EQUIP. RENTALS	0	0	0
REPAIR REVENUES	0	0	0
INSTALLATION REV.	0	0	0

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MDS AIRTIME FEES	0	0	0
ACCESS FEES	0	0	0
EQUIP. SALES	0	0	0
EQUIP. RENTALS	0	0	0
REPAIR REVENUES	0	0	0
INSTALLATION REV.	0	0	0

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TOTAL	1885061	394987	1490074
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AGGREGATE

SHF AIRTIME FEES	1175004	244195	930810
UHF AIRTIME FEES	210067	40510	169557
ACCESS FEES	198807	41598	157209
EQUIP. SALES	27567	10819	16748
EQUIP. RENTALS	184606	37628	146978
REPAIR REVENUES	28097	5543	22554
INSTALLATION REV.	60913	14694	46219

TOTAL	1885061	394987	1490074
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LEGEND

MRS: MOBILE RADIO SERVICE MTS: MOBILE TELEPHONE SERVICE
MPS: MOBILE PAGING SERVICE MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000's)

REGION	CANADA						
INCREMENTAL EXPENSE	1989	1990	1991	1992	1993	1994	1995
MRS AIRTIME COSTS	2631	7717	15420	29492	35621	42068	48414
TELESAT ACCESS COST	332	972	1940	3703	4468	5268	6056
ADV./PROM./SELLING	891	1938	3223	4910	3856	4493	5057
BILLING/COLLECTING	21	65	136	241	306	379	457
REPAIR EXPENSE	91	281	588	1039	1317	1630	1967
INSTALATION/REMOVAL	274	651	1177	1890	1774	2133	2489
OTHER EXPENSES	2	7	15	27	34	42	51
	4243	11632	22499	41302	47375	56012	64490
MTS AIRTIME COSTS	570	1683	3365	8198	9812	11759	13944
TELESAT ACCESS COST	74	218	436	1061	1270	1522	1805
ADV./PROM./SELLING	217	468	776	1778	1145	1424	1709
BILLING/COLLECTING	5	15	31	69	87	109	136
REPAIR EXPENSE	20	63	132	298	374	471	586
INSTALATION/REMOVAL	61	146	265	618	499	629	773
OTHER EXPENSES	1	2	3	8	10	12	15
	948	2594	5607	12029	13197	15927	18968
MPS AIRTIME COSTS	0	0	0	0	0	0	0
TELESAT ACCESS COST	0	0	0	0	0	0	0
ADV./PROM./SELLING	0	0	0	0	0	0	0
BILLING/COLLECTING	0	0	0	0	0	0	0
REPAIR EXPENSE	0	0	0	0	0	0	0
INSTALATION/REMOVAL	0	0	0	0	0	0	0
OTHER EXPENSES	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
MDS AIRTIME COSTS	0	0	0	0	0	0	0
TELESAT ACCESS COST	0	0	0	0	0	0	0
ADV./PROM./SELLING	0	0	0	0	0	0	0
BILLING/COLLECTING	0	0	0	0	0	0	0
REPAIR EXPENSE	0	0	0	0	0	0	0
INSTALATION/REMOVAL	0	0	0	0	0	0	0
OTHER EXPENSES	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
TOTAL	5191	14226	27506	53332	60573	71939	83459
AGGREGATE							
SHF AIRTIME COSTS	2779	8137	16196	32476	39041	46087	53281
UHF AIRTIME COSTS	423	1263	2589	5214	6392	7740	9076
TELESAT ACCESS COST	406	1190	2375	4765	5738	6790	7861
ADV./PROM./SELLING	1108	2407	3999	6687	5001	5916	6765
BILLING/COLLECTING	26	80	167	311	393	488	593
REPAIR EXPENSE	111	343	720	1337	1691	2101	2554
INSTALATION/REMOVAL	335	798	1441	2507	2273	2763	3263
OTHER EXPENSES	3	9	19	35	44	54	66
TOTAL	5191	14226	27506	53332	60573	71939	83459
CUMULATIVE	5191	19417	46923	100255	160827	232767	316225

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000'S)

REGION	CANADA						
INCREMENTAL EXPENSE	1996	1997	1998	1999	2000	2001	2002
MRS AIRTIME COSTS	65059	73352	81601	99814	110354	120757	137538
TELESAT ACCESS COST	8027	9040	10045	12570	13889	15190	17301
ADV./PROM./SELLING	6191	6987	7757	9212	10362	11380	14821
BILLING/COLLECTING	547	647	755	881	1022	1174	1403
REPAIR EXPENSE	2357	2787	3252	3793	4400	5053	6043
INSTALATION/REMOVAL	2951	3426	3919	4568	5259	5944	7549
OTHER EXPENSES	61	72	84	98	114	130	156
	---85193	---96310	---107414	---130936	---145400	---159628	---184811
MTS AIRTIME COSTS	18992	21762	24413	29567	32320	35070	38031
TELESAT ACCESS COST	2428	2782	3121	3871	4231	4591	4979
ADV./PROM./SELLING	2040	2360	2601	2916	3226	3539	3957
BILLING/COLLECTING	166	199	235	271	311	355	404
REPAIR EXPENSE	713	858	1010	1168	1341	1527	1739
INSTALATION/REMOVAL	911	1080	1235	1388	1576	1775	2019
OTHER EXPENSES	18	22	26	30	35	39	45
	---25268	---29064	---32641	---39211	---43040	---46896	---51173
MPS AIRTIME COSTS	0	0	0	0	0	0	0
TELESAT ACCESS COST	0	0	0	0	0	0	0
ADV./PROM./SELLING	0	0	0	0	0	0	0
BILLING/COLLECTING	0	0	0	0	0	0	0
REPAIR EXPENSE	0	0	0	0	0	0	0
INSTALATION/REMOVAL	0	0	0	0	0	0	0
OTHER EXPENSES	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
MDS AIRTIME COSTS	0	0	0	0	0	0	0
TELESAT ACCESS COST	0	0	0	0	0	0	0
ADV./PROM./SELLING	0	0	0	0	0	0	0
BILLING/COLLECTING	0	0	0	0	0	0	0
REPAIR EXPENSE	0	0	0	0	0	0	0
INSTALATION/REMOVAL	0	0	0	0	0	0	0
OTHER EXPENSES	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
TOTAL	110461	125374	140055	170147	188440	206524	235984
AGGREGATE							
SHF AIRTIME COSTS	71652	80901	89959	109486	120553	131474	147981
UHF AIRTIME COSTS	12400	14213	16056	19895	22121	24352	27587
TELESAT ACCESS COST	10455	11822	13166	16441	18121	19781	22280
ADV./PROM./SELLING	8231	9347	10358	12128	13589	14919	18778
BILLING/COLLECTING	713	847	990	1152	1333	1528	1807
REPAIR EXPENSE	3070	3645	4262	4960	5741	6580	7782
INSTALATION/REMOVAL	3862	4506	5154	5957	6835	7719	9567
OTHER EXPENSES	79	94	110	128	148	170	201
TOTAL	---110461	---125374	---140055	---170147	---188440	---206524	---235984
CUMULATIVE	426686	552060	692115	862262	1050702	1257226	1493211

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000's)

REGION CANADA

INCREMENTAL EXPENSE	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	869838	181364	688474
TELESAT ACCESS COST	108800	22739	86062
ADV./PROM./SELLING	91077	24367	66710
BILLING/COLLECTING	8035	1605	6430
REPAIR EXPENSE	34597	6912	27684
INSTALATION/REMOVAL	44005	10388	33617
OTHER EXPENSES	893	178	714
	1157245	247554	909691
MTS AIRTIME COSTS	249486	49330	200156
TELESAT ACCESS COST	32389	6386	26003
ADV./PROM./SELLING	28157	7518	20639
BILLING/COLLECTING	2392	452	1941
REPAIR EXPENSE	10300	1945	8356
INSTALATION/REMOVAL	12975	2992	9984
OTHER EXPENSES	266	50	216
	335966	68671	267294
MPS AIRTIME COSTS	0	0	0
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	0	0	0
BILLING/COLLECTING	0	0	0
REPAIR EXPENSE	0	0	0
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	0	0	0
MDS AIRTIME COSTS	0	0	0
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	0	0	0
BILLING/COLLECTING	0	0	0
REPAIR EXPENSE	0	0	0
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	0	0	0
TOTAL	1493211	316225	1176985
AGGREGATE			
SHF AIRTIME COSTS	950003	197997	752005
UHF AIRTIME COSTS	169321	32697	136625
TELESAT ACCESS COST	141189	29124	112065
ADV./PROM./SELLING	119234	31884	87349
BILLING/COLLECTING	10428	2057	8371
REPAIR EXPENSE	44897	8857	36040
INSTALATION/REMOVAL	56981	13380	43601
OTHER EXPENSES	1159	229	930
TOTAL	1493211	316225	1176985

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

137-717

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000'S)

REGION	CANADA						
CAPITAL EXPENDITURE	1989	1990	1991	1992	1993	1994	1995
FIXED CAPITAL							
INVESTMENT REPLACEMENT	1402 0	823 0	1435 0	1738 0	1132 0	0 0	0 0
	1402	823	1435	1738	1132	0	0
USER CAPITAL							
MRS RENTAL UNITS REPLACEMENT STOCK	1764 0 88	3515 0 176	5484 0 274	7780 0 389	4083 0 204	4412 0 221	4493 0 225
	1852	3691	5758	8169	4287	4633	4718
MTS RENTAL UNITS REPLACEMENT STOCK	489 0 49	986 0 99	1537 0 154	3646 0 365	1384 0 138	1724 0 172	1996 0 200
	538	1084	1691	4010	1523	1897	2196
MPS RENTAL UNITS REPLACEMENT STOCK	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
	0	0	0	0	0	0	0
MDS RENTAL UNITS REPLACEMENT STOCK	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
	0	0	0	0	0	0	0
TOTAL	3792	5599	8884	13918	6942	6530	6914
AGGREGATE							
FIXED CAPITAL	1402	823	1435	1738	1132	0	0
USER CAPITAL	2390	4775	7449	12180	5810	6530	6914
AGGREGATE	3792	5599	8884	13918	6942	6530	6914
CUMULATIVE	3792	9391	18275	32193	39135	45665	52579

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000's \$)

REGION	CANADA						
CAPITAL EXPENDITURE	1996	1997	1998	1999	2000	2001	2002
FIXED CAPITAL							
INVESTMENT REPLACEMENT	946 0	1572 0	1461 0	1632 0	1916 0	2220 0	0
USER CAPITAL	946	1572	1461	1632	1916	2220	0
MRS RENTAL UNITS	5029	5394	5621	6531	7220	7473	12734
REPLACEMENT STOCK	2086	4215	6698	10870	5308	6077	6492
	251	270	281	327	361	374	637
	7366	9879	12600	17727	12889	13924	19862
MTS RENTAL UNITS	2075	2332	2344	2289	2439	2557	2892
REPLACEMENT STOCK	780	1591	2507	4043	2055	2258	2427
	208	233	234	229	244	256	289
	3063	4156	5085	6561	4738	5071	5609
MPS RENTAL UNITS	0	0	0	0	0	0	0
REPLACEMENT STOCK	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
MDS RENTAL UNITS	0	0	0	0	0	0	0
REPLACEMENT STOCK	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
TOTAL	11375	15607	19146	25919	19543	21215	25471
AGGREGATE							
FIXED CAPITAL	946	1572	1461	1632	1916	2220	0
USER CAPITAL	10429	14035	17685	24288	17627	18995	25471
AGGREGATE	11375	15607	19146	25919	19543	21215	25471
CUMULATIVE	63954	79561	98706	124626	144169	165384	190855

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000'S)

REGION	CANADA		
	TOTAL	1989-1995	1996-2002
CAPITAL EXPENDITURE			
FIXED CAPITAL			
INVESTMENT	16278	6531	9747
REPLACEMENT	0	0	0
	-----	-----	-----
USER CAPITAL	16278	6531	9747
MRS RENTAL UNITS	81533	31532	50001
REPLACEMENT	41747	0	41747
STOCK	4077	1577	2500
	-----	-----	-----
127357	33109	94248	
MTS RENTAL UNITS	28691	11763	16929
REPLACEMENT	15661	0	15661
STOCK	2869	1176	1693
	-----	-----	-----
47221	12939	34282	
MPS RENTAL UNITS	0	0	0
REPLACEMENT	0	0	0
STOCK	0	0	0
	-----	-----	-----
0	0	0	0
MDS RENTAL UNITS	0	0	0
REPLACEMENT	0	0	0
STOCK	0	0	0
	-----	-----	-----
0	0	0	0
TOTAL	190855	52579	138277
AGGREGATE	-----	-----	-----
FIXED CAPITAL	16278	6531	9747
USER CAPITAL	174578	46048	128530
AGGREGATE	-----	-----	-----
	190855	52579	138277

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995	
INCREMENTAL REVENUE	6144	17092	33523	65532	76284	90793	105618	
EQUIPMENT SALVAGE								
	6144	17092	33523	65532	76284	90793	105618	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	5191	14226	27506	53332	60573	71939	83459	
CAPITAL EXPENDITURE	3792	5599	8884	13918	6942	6530	6914	
CAPITAL MAINTENANCE	74	122	204	306	381	400	421	
INCOMES TAXES	79	295	795	2276	3067	4321	5647	
	9135	20242	37389	69832	70964	83190	96439	
NET CASH FLOW								
	-2992	-3149	-3865	-4300	-5320	-7603	-9179	
P.V.- NET CASH FLOW	-1752	-1657	-1827	-1826	2030	2606	2827	
CUMULATIVE								
CASH INFLOWS	6144	23236	56760	122291	198575	289369	394987	
CASH OUTFLOWS	9135	29377	66766	136598	207561	290752	387191	
NET CASH FLOW								
	-2992	-6141	-10006	-14306	-8986	-1383	7796	
P.V.- NET CASH FLOW	-1752	-3408	-5235	-7061	-5031	-2425	402	

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ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002	
INCREMENTAL REVENUE	138837	158075	177182	215017	238763	262486	299713	
EQUIPMENT SALVAGE								
	138837	158075	177182	215017	238763	262486	299713	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	110461	125374	140055	170147	188440	206524	235984	
CAPITAL EXPENDITURE	11375	15607	19146	25919	19543	21215	25471	
CAPITAL MAINTENANCE	492	600	707	829	972	1138	1195	
INCOMES TAXES	7964	8719	9103	10504	11325	12740	28833	
	130292	150300	169011	207400	220280	241617	291484	
NET CASH FLOW								
	-8545	-7776	-8171	-7618	-18482	-20869	-106063	
P.V.- NET CASH FLOW	2365	1933	1825	1529	3333	3381	15440	
CUMULATIVE								
CASH INFLOWS	533824	691899	849081	1084099	1322861	1585348	1982895	
CASH OUTFLOWS	517483	667782	836793	1044193	1264473	1506091	1797575	
NET CASH FLOW								
	16341	24117	32288	39906	58388	79257	185320	
P.V.- NET CASH FLOW	2767	4700	6526	8055	11388	14769	30209	

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000'S)

REGION	CANADA	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE	1885061	394987	1490074	1490074
EQUIPMENT SALVAGE	97834		97834	
	1982895	394987		1587908
CASH OUTFLOWS				
INCREMENTAL EXPENSE	1493211	316225	1176985	1176985
CAPITAL EXPENDITURE	190855	52579	138277	138277
CAPITAL MAINTENANCE	7840	1908	5932	5932
INCOMES TAXES	105669	16479	89190	89190
	1797575	387191		1410384
NET CASH FLOW	185320	7796		177524
P.V.- NET CASH FLOW	30209	402		29807

LEGENDMRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE**DOLLAR TYPE: CURRENT**DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	B.C. / YUKON							
	1989	1990	1991	1992	1993	1994	1995	
CASH INFLOWS								
INCREMENTAL REVENUE	954	2652	5746	11728	13567	16400	19202	
EQUIPMENT SALVAGE								
	954	2652	5746	11728	13567	16400	19202	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	806	2203	4722	9550	10751	12984	15156	
CAPITAL EXPENDITURE	576	866	1641	2608	1241	1270	1317	
CAPITAL MAINTENANCE	11	18	33	52	66	69	72	
INCOMES TAXES	14	50	144	413	552	786	1030	
	1407	3137	6540	12624	12609	15109	17575	
NET CASH FLOW								
	-453	-485	-794	-895	-958	-1292	-1627	
P.V.- NET CASH FLOW								
	-265	-255	-375	-380	365	443	501	
CUMULATIVE								
CASH INFLOWS	954	3607	9352	21081	34648	51048	70249	
CASH OUTFLOWS	1407	4544	11084	23708	36317	51426	69001	
NET CASH FLOW								
	-453	-938	-1732	-2627	-1669	-378	1249	
P.V.- NET CASH FLOW								
	-265	-520	-896	-1276	-910	-468	33	

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ESTIMATED NET CASH FLOWS
(000's)

REGION	B.C. / YUKON							
	1996	1997	1998	1999	2000	2001	2002	
CASH INFLOWS								
INCREMENTAL REVENUE	25575	29374	33226	40626	46091	51307	56765	
EQUIPMENT SALVAGE								
	25575	29374	33226	40626	46091	51307	75467	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	20334	23277	26245	32125	36391	40373	44540	
CAPITAL EXPENDITURE	2180	2857	3712	5051	4073	4444	4206	
CAPITAL MAINTENANCE	87	108	129	153	183	218	229	
INCOMES TAXES	1471	1638	1729	1998	2191	2485	5592	
	24071	27879	31814	39327	42839	47519	54567	
NET CASH FLOW								
	1504	1494	1412	1299	3252	3787	20899	
P.V.- NET CASH FLOW								
	416	372	315	261	586	614	3042	
CUMULATIVE								
CASH INFLOWS	95825	125198	158425	199051	245142	296448	371915	
CASH OUTFLOWS	93072	120951	152765	192093	234932	282451	337018	
NET CASH FLOW								
	2753	4247	5659	6958	10210	13997	34897	
P.V.- NET CASH FLOW								
	450	821	1137	1397	1984	2597	5640	

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION B.C. / YUKON

	TOTAL	1989-1995	1996-2002
CASH INFLOWS			
INCREMENTAL REVENUE	353213	70249	282964
EQUIPMENT SALVAGE	18702		18702
	371915	70249	301666
CASH OUTFLOWS			
INCREMENTAL EXPENSE	279456	56171	223285
CAPITAL EXPENDITURE	36043	9519	26523
CAPITAL MAINTENANCE	1427	322	1106
INCOMES TAXES	20092	2988	17104
	337018	69001	268018
NET CASH FLOW	34897	1249	33648
P.V.- NET CASH FLOW	5640	33	5606

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION	ALBERTA / N.W.T.						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	768	2431	5086	10457	12053	15169	18156
EQUIPMENT SALVAGE							
	768	2431	5086	10457	12053	15169	18156
CASH OUTFLOWS							
INCREMENTAL EXPENSE	649	2031	4187	8536	9574	12068	14392
CAPITAL EXPENDITURE	472	838	1423	2313	1068	1346	1382
CAPITAL MAINTENANCE	9	16	30	46	58	61	64
INCOMES TAXES	10	44	120	361	483	716	952
	1140	2930	5760	11257	11183	14191	16790
NET CASH FLOW	-372	-499	-674	-800	-870	-978	-1367
P.V.- NET CASH FLOW	-218	-262	-319	-340	332	335	421
CUMULATIVE							
CASH INFLOWS	768	3199	8285	18742	30794	45963	64120
CASH OUTFLOWS	1140	4070	9830	21087	32270	46461	63250
NET CASH FLOW	-372	-871	-1545	-2345	-1476	-497	869
P.V.- NET CASH FLOW	-218	-480	-799	-1139	-807	-471	-51

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	ALBERTA / N.W.T.						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	24523	28412	33061	40216	45049	49291	64065
EQUIPMENT SALVAGE							21681
	24523	28412	33061	40216	45049	49291	85746
CASH OUTFLOWS							
INCREMENTAL EXPENSE	19561	22579	26221	31851	35609	38770	50956
CAPITAL EXPENDITURE	2093	2827	3834	4681	3515	4201	8107
CAPITAL MAINTENANCE	76	97	120	143	170	202	212
INCOMES TAXES	1391	1568	1703	2002	2206	2463	5896
	23122	27072	31877	38676	41499	45636	65171
NET CASH FLOW	1401	1340	1183	1540	3550	3655	20575
P.V.- NET CASH FLOW	388	333	264	309	640	592	2995
CUMULATIVE							
CASH INFLOWS	88642	117054	150115	190331	235380	284671	370417
CASH OUTFLOWS	86372	113443	145321	183997	225496	271132	336304
NET CASH FLOW	2271	3611	4794	6334	9883	13539	34114
P.V.- NET CASH FLOW	337	670	935	1244	1884	2476	5471

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION ALBERTA / N.W.T.

	TOTAL	1989-1995	1996-2002
CASH INFLOWS			
INCREMENTAL REVENUE	348736	64120	284616
EQUIPMENT SALVAGE	21681		21681
	370417	64120	306298
CASH OUTFLOWS			
INCREMENTAL EXPENSE	276986	51438	225547
CAPITAL EXPENDITURE	38099	8842	29257
CAPITAL MAINTENANCE	1304	284	1020
INCOMES TAXES	19915	2686	17229
	336304	63250	273053
NET CASH FLOW	34114	869	33244
P.V. - NET CASH FLOW	5471	-51	5522

LEGENDMRS: MOBILE RADIO SERVICE
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MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	SASKATCHEWAN							
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995	
INCREMENTAL REVENUE	358	976	1947	3960	4446	5088	5645	
EQUIPMENT SALVAGE								
	358	976	1947	3960	4446	5088	5645	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	308	821	1613	3257	3558	4062	4490	
CAPITAL EXPENDITURE	190	316	520	832	335	283	265	
CAPITAL MAINTENANCE	3	6	11	17	20	21	22	
INCOMES TAXES	5	17	43	131	173	236	299	
	508	1160	2187	4237	4086	4603	5076	
NET CASH FLOW	-148	-184	-240	-277	-360	-485	-569	
P.V.- NET CASH FLOW	-87	-97	-114	-118	137	166	175	
CUMULATIVE								
CASH INFLOWS	358	1334	3281	7241	11687	16775	22419	
CASH OUTFLOWS	506	1666	3853	8090	12176	16779	21855	
NET CASH FLOW	-148	-332	-572	-849	-490	-4	565	
P.V.- NET CASH FLOW	-87	-183	-297	-415	-277	-111	64	

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ESTIMATED NET CASH FLOWS
(000's)

REGION	SASKATCHEWAN							
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002	
INCREMENTAL REVENUE	6743	7170	7814	8857	9490	10279	11467	
EQUIPMENT SALVAGE							3663	
	6743	7170	7814	8857	9490	10279	15130	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	5380	5712	6223	7038	7534	8150	9087	
CAPITAL EXPENDITURE	312	524	844	1115	677	786	878	
CAPITAL MAINTENANCE	24	27	31	34	39	44	47	
INCOMES TAXES	395	409	400	403	403	448	1047	
	6111	6673	7498	8590	8852	9428	11059	
NET CASH FLOW	-632	-497	-316	-267	-837	-851	-4071	
P.V.- NET CASH FLOW	175	124	70	54	151	138	593	
CUMULATIVE								
CASH INFLOWS	29162	36333	44147	53004	62494	72773	87903	
CASH OUTFLOWS	27965	34638	42137	50727	59379	68807	79866	
NET CASH FLOW	1197	1695	2010	2277	3115	3966	8037	
P.V.- NET CASH FLOW	239	363	433	487	638	776	1369	

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)REGION SASKATCHEWAN

	TOTAL	1989-1995	1996-2002
<u>CASH INFLOWS</u>			
INCREMENTAL REVENUE	84240	22419	61820
EQUIPMENT SALVAGE	3663		3663
	<u>87903</u>	<u>22419</u>	<u>65483</u>
<u>CASH OUTFLOWS</u>			
INCREMENTAL EXPENSE	67233	18109	49124
CAPITAL EXPENDITURE	7878	2741	5137
CAPITAL MAINTENANCE	346	100	246
INCOMES TAXES	4408	905	3504
	<u>79866</u>	<u>21855</u>	<u>58011</u>
<u>NET CASH FLOW</u>	<u>8037</u>	<u>585</u>	<u>7472</u>
<u>P.V. - NET CASH FLOW</u>	<u>1369</u>	<u>64</u>	<u>1304</u>

LEGENDMRS: MOBILE RADIO SERVICE
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MDS: MOBILE DATA SERVICEDOLLAR TYPE: CURRENTDISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	ONTARIO						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	2034	5688	10305	18744	22837	26633	30965
EQUIPMENT SALVAGE	2034	5688	10305	18744	22837	26633	30965
CASH OUTFLOWS							
INCREMENTAL EXPENSE	1705	4718	8406	15152	18122	21016	24390
CAPITAL EXPENDITURE	1344	1872	2553	3779	2420	1803	2034
CAPITAL MAINTENANCE	29	44	67	97	122	128	135
INCOMES TAXES	23	93	242	659	918	1267	1661
	3100	6727	11267	19687	21583	24214	28222
NET CASH FLOW	-1066	-1039	-962	-943	-1254	-2419	-2743
P.V.- NET CASH FLOW	-624	-546	-455	-400	478	829	845
CUMULATIVE							
CASH INFLOWS	2034	7721	18026	36770	59607	86240	117205
CASH OUTFLOWS	3100	9826	21094	40780	62364	86577	114800
NET CASH FLOW	-1066	-2105	-3067	-4010	-2757	-337	2405
P.V.- NET CASH FLOW	-624	-1171	-1626	-2026	-1548	-718	126

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	ONTARIO						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	40949	47422	51711	63497	68803	75592	83621
EQUIPMENT SALVAGE	40949	47422	51711	63497	68803	75592	110553
CASH OUTFLOWS							
INCREMENTAL EXPENSE	32505	37557	40683	50158	54067	59328	65520
CAPITAL EXPENDITURE	3634	5294	5098	7415	5500	5829	6247
CAPITAL MAINTENANCE	159	195	224	263	300	347	365
INCOMES TAXES	2335	2549	2623	3121	3300	3701	8177
	38633	45595	48628	60957	63168	69204	80308
NET CASH FLOW	2316	1827	3083	2540	5635	6387	30244
P.V.- NET CASH FLOW	641	454	689	510	1016	1035	4403
CUMULATIVE							
CASH INFLOWS	158154	205575	257286	320783	389586	465178	575731
CASH OUTFLOWS	153432	199027	247655	308613	371780	440984	521293
NET CASH FLOW	4721	6548	9631	12171	17806	24193	54438
P.V.- NET CASH FLOW	767	1222	1910	2420	3436	4471	8874

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION ONTARIO

	TOTAL	1989-1995	1996-2002
CASH INFLOWS			
INCREMENTAL REVENUE	548798	117205	431593
EQUIPMENT SALVAGE	26932		26932
	575731	117205	458525
CASH OUTFLOWS			
INCREMENTAL EXPENSE	433327	93510	339818
CAPITAL EXPENDITURE	54824	15806	39017
CAPITAL MAINTENANCE	2475	622	1854
INCOMES TAXES	30667	4862	25804
	521293	114800	406493
NET CASH FLOW	54438	2405	52032
P.V. - NET CASH FLOW	8874	126	8747

LEGEND

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DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION	QUEBEC						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	1272	3268	6457	12966	14979	17875	20868
EQUIPMENT SALVAGE	1272	3268	6457	12966	14979	17875	20868
CASH OUTFLOWS							
INCREMENTAL EXPENSE	1078	2717	5300	10563	11888	14162	16492
CAPITAL EXPENDITURE	772	1031	1716	2829	1337	1297	1376
CAPITAL MAINTENANCE	15	23	39	60	74	78	82
INCOMES TAXES	16	55	153	451	602	852	1117
NET CASH FLOW	1881	3826	7208	13902	13902	16389	19062
P.V.- NET CASH FLOW	-356	-294	-355	-398	411	510	555
CUMULATIVE							
CASH INFLOWS	1272	4541	10997	23963	38942	56817	77685
CASH OUTFLOWS	1881	5707	12915	26818	40720	57109	76175
NET CASH FLOW	-608	-1166	-1918	-2855	-1778	-291	1510
P.V.- NET CASH FLOW	-356	-650	-1005	-1403	-992	-482	73

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	QUEBEC						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	27479	31083	35087	42350	47634	52422	57759
EQUIPMENT SALVAGE	27479	31083	35087	42350	47634	52422	57759
CASH OUTFLOWS							
INCREMENTAL EXPENSE	21871	24654	27766	33523	37653	41287	45376
CAPITAL EXPENDITURE	2237	2865	3779	5087	4056	4231	4227
CAPITAL MAINTENANCE	95	115	136	159	189	222	233
INCOMES TAXES	1577	1733	1827	2090	2268	2551	5617
NET CASH FLOW	1700	1718	1579	1491	3468	4132	20888
P.V.- NET CASH FLOW	470	427	353	299	625	669	3041
CUMULATIVE							
CASH INFLOWS	105164	136247	171333	213683	261318	313739	390081
CASH OUTFLOWS	101954	131320	164827	205687	249853	298143	353596
NET CASH FLOW	3210	4927	6506	7997	11465	15596	36484
P.V.- NET CASH FLOW	543	970	1323	1622	2247	2917	5957

KVA Communications and Electronics Co.

3

ESTIMATED NET CASH FLOWS
(000'S)

REGION	QUEBEC	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE	371499	77685	293814	
EQUIPMENT SALVAGE	18582		18582	
	390081	77685		312396
CASH OUTFLOWS				
INCREMENTAL EXPENSE	294330	62200	232130	
CAPITAL EXPENDITURE	36839	10357	26482	
CAPITAL MAINTENANCE	1519	372	1147	
INCOMES TAXES	20908	3246	17663	
	353596	76175		277421
NET CASH FLOW	36484	1510		34975
P.V. - NET CASH FLOW	5957	73		5885

LEGEND

MRS: MOBILE RADIO SERVICE
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MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

1

ESTIMATED NET CASH FLOWS
(000's)

REGION	ATLANTIC						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	360	976	1829	3372	3516	4091	4661
EQUIPMENT SALVAGE	360	976	1829	3372	3516	4091	4661
CASH OUTFLOWS							
INCREMENTAL EXPENSE	304	812	1497	2738	2772	3236	3680
CAPITAL EXPENDITURE	226	316	466	669	154	240	261
CAPITAL MAINTENANCE	5	7	11	16	19	19	20
INCOMES TAXES	4	16	43	117	146	204	259
NET CASH FLOW	-179	-175	-189	-168	-425	-391	-441
P.V.- NET CASH FLOW	-105	-92	-89	-71	162	134	136
CUMULATIVE							
CASH INFLOWS	360	1336	3165	6537	10053	14144	18805
CASH OUTFLOWS	539	1690	3708	7249	10339	14039	18259
NET CASH FLOW	-179	-354	-543	-711	-286	105	546
P.V.- NET CASH FLOW	-105	-197	-286	-358	-195	-61	75

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	ATLANTIC						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	6009	6743	7748	9446	10675	11648	12771
EQUIPMENT SALVAGE	6009	6743	7748	9446	10675	11648	16809
CASH OUTFLOWS							
INCREMENTAL EXPENSE	4777	5345	6139	7482	8438	9166	10024
CAPITAL EXPENDITURE	487	703	984	1231	799	841	852
CAPITAL MAINTENANCE	23	28	33	39	46	53	56
INCOMES TAXES	351	369	377	429	486	564	1263
NET CASH FLOW	-370	-298	-215	-266	-906	-1024	-4614
P.V.- NET CASH FLOW	102	74	48	53	163	166	672
CUMULATIVE							
CASH INFLOWS	24814	31557	39305	48751	59426	71074	87883
CASH OUTFLOWS	23898	30343	37876	47056	56825	67449	79644
NET CASH FLOW	916	1214	1429	1695	2601	3625	8238
P.V.- NET CASH FLOW	177	251	299	352	516	682	1353

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000'S)

REGION	ATLANTIC	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE		83845	18805	65039
EQUIPMENT SALVAGE		4038		4038
		87883	18805	69078
CASH OUTFLOWS				
INCREMENTAL EXPENSE		66410	15038	51372
CAPITAL EXPENDITURE		8231	2333	5898
CAPITAL MAINTENANCE		376	98	278
INCOMES TAXES		4627	790	3838
		79644	18259	61385
NET CASH FLOW		8238	546	7692
P.V.- NET CASH FLOW		1353	75	1279

LEGEND

MRS: MOBILE RADIO SERVICE
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MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	MANITOBA						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	397	1102	2154	4305	4887	5537	6122
EQUIPMENT SALVAGE	397	1102	2154	4305	4887	5537	6122
CASH OUTFLOWS							
INCREMENTAL EXPENSE	341	925	1781	3535	3907	4411	4859
CAPITAL EXPENDITURE	212	360	566	888	386	290	277
CAPITAL MAINTENANCE	3	7	12	18	23	24	25
INCOMES TAXES	6	20	49	145	193	261	329
	562	1311	2408	4586	4509	4986	5490
NET CASH FLOW	-165	-209	-254	-281	-378	-551	-632
P.V.- NET CASH FLOW	-97	-110	-120	-119	144	189	195
CUMULATIVE							
CASH INFLOWS	397	1498	3653	7958	12844	18381	24503
CASH OUTFLOWS	562	1873	4281	8867	13376	18362	23852
NET CASH FLOW	-165	-375	-628	-909	-531	19	651
P.V.- NET CASH FLOW	-97	-207	-327	-446	-302	-113	81

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	MANITOBA						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	7560	7872	8536	10025	11021	11947	13266
EQUIPMENT SALVAGE	7560	7872	8536	10025	11021	11947	12536
	7560	7872	8536	10025	11021	11947	12536
CASH OUTFLOWS							
INCREMENTAL EXPENSE	6034	6250	6779	7968	8748	9451	10481
CAPITAL EXPENDITURE	434	537	894	1339	922	884	953
CAPITAL MAINTENANCE	27	30	34	39	45	52	54
INCOMES TAXES	443	454	445	462	472	530	1242
	6938	7270	8152	9809	10187	10916	12731
NET CASH FLOW	622	602	383	216	834	1032	4771
P.V.- NET CASH FLOW	172	150	86	43	150	167	695
CUMULATIVE							
CASH INFLOWS	32063	39935	48471	58495	69516	81464	98966
CASH OUTFLOWS	30790	38060	46212	56021	66208	77123	89854
NET CASH FLOW	1273	1875	2259	2474	3309	4340	9112
P.V.- NET CASH FLOW	254	403	489	532	683	850	1544

KVA Communications and Electronics Co.

3

ESTIMATED NET CASH FLOWS
(000's \$)

REGION MANITOBA

	TOTAL	1989-1995	1996-2002
CASH INFLOWS			
INCREMENTAL REVENUE	94730	24503	70227
EQUIPMENT SALVAGE	4236		4236
	98966	24503	74463
CASH OUTFLOWS			
INCREMENTAL EXPENSE	75468	19758	55710
CAPITAL EXPENDITURE	8942	2980	5963
CAPITAL MAINTENANCE	393	111	281
INCOMES TAXES	5051	1003	4048
	89854	23852	66002
NET CASH FLOW	9112	651	8461
P.V. - NET CASH FLOW	1544	81	1463

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 2 - Outputs

MRS, MTS, MPS and DACS

KVA Communications and Electronics Co.

3

**ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000'S)**

REGION	CANADA		
	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	1073413	222961	850452
ACCESS FEES	150698	31855	118843
EQUIP. SALES	20393	7879	12514
EQUIP. RENTALS	134936	27906	107030
REPAIR REVENUES	21651	4326	17325
INSTALLATION REV.	47060	11400	35660
	1448152	306328	1141824
MTS AIRTIME FEES	312005	61810	250195
ACCESS FEES	48108	9743	38366
EQUIP. SALES	7174	2940	4233
EQUIP. RENTALS	49670	9722	39948
REPAIR REVENUES	6446	1217	5229
INSTALLATION REV.	13853	3294	10559
	437258	88726	348530
MPS AIRTIME FEES	286140	63623	222517
ACCESS FEES	0	0	0
EQUIP. SALES	3083	984	2099
EQUIP. RENTALS	113319	23926	89393
REPAIR REVENUES	17871	3773	14098
INSTALLATION REV.	0	0	0
	420413	92307	328107
MDS AIRTIME FEES	99674	22259	77415
ACCESS FEES	19437	3865	15572
EQUIP. SALES	9009	3075	5934
EQUIP. RENTALS	58656	11209	47447
REPAIR REVENUES	26959	5063	21896
INSTALLATION REV.	47892	11757	36134
	261626	57228	204397
TOTAL	2567447	544588	2022858
<hr/>			
AGGREGATE			
SHF AIRTIME FEES	1511949	320124	1191825
IHF AIRTIME FEES	259283	50529	208754
ACCESS FEES	218243	45463	172781
EQUIP. SALES	39659	14879	24780
EQUIP. RENTALS	356581	72764	283817
REPAIR REVENUES	72926	14379	58547
INSTALLATION REV.	108805	26451	82353
TOTAL	2567447	544588	2022858
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LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.
**ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE**
(000's)

REGION	CANADA		
INCREMENTAL EXPENSE			
	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	869838	181364	688474
TELESAT ACCESS COST	108800	22739	86062
ADV./PROM./SELLING	91085	24368	66717
BILLING/COLLECTING	8035	1605	6430
REPAIR EXPENSE	34597	6912	27684
INSTALATION/REMOVAL	44005	10388	33617
OTHER EXPENSES	893	178	714
	1157254	247556	909698
MTS AIRTIME COSTS	249486	49330	200156
TELESAT ACCESS COST	32389	6386	26003
ADV./PROM./SELLING	28157	7518	20639
BILLING/COLLECTING	2392	452	1941
REPAIR EXPENSE	10300	1945	8356
INSTALATION/REMOVAL	12975	2992	9984
OTHER EXPENSES	266	50	216
	335966	68671	267294
MPS AIRTIME COSTS	228788	50774	178014
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	52113	13237	38876
BILLING/COLLECTING	48739	10291	38448
REPAIR EXPENSE	94770	20010	74760
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	424409	94312	330098
MDS AIRTIME COSTS	79738	17807	61932
TELESAT ACCESS COST	15078	2977	12101
ADV./PROM./SELLING	38571	9466	29105
BILLING/COLLECTING	3341	627	2713
REPAIR EXPENSE	43060	8087	34973
INSTALATION/REMOVAL	52357	12042	40315
OTHER EXPENSES	371	70	301
	232517	51076	181440
TOTAL	2150145	461615	1688531
AGGREGATE			
SHF AIRTIME COSTS	1219208	258588	960620
JHF AIRTIME COSTS	208643	40687	167956
TELESAT ACCESS COST	156267	32101	124166
ADV./PROM./SELLING	209927	54589	155338
BILLING/COLLECTING	62507	12975	49532
REPAIR EXPENSE	182726	36954	145772
INSTALATION/REMOVAL	109338	25422	83916
OTHER EXPENSES	1530	298	1232
TOTAL	2150145	461615	1688531

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

3

**ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000's)**

REGION	CANADA	TOTAL	1989-1995	1996-2002
CAPITAL EXPENDITURE				
 FIXED CAPITAL				
INVESTMENT	17150	6848	10302	
REPLACEMENT	0	0	0	
	17150	6848	10302	
 USER CAPITAL				
MRS RENTAL UNITS	81533	31532	50001	
REPLACEMENT	76901	12682	64220	
STOCK	4077	1577	2500	
	162511	45791	116720	
MTS RENTAL UNITS	28691	11763	16929	
REPLACEMENT	28610	4376	24234	
STOCK	2869	1176	1693	
	60170	17315	42855	
MPS RENTAL UNITS	69890	22310	47580	
REPLACEMENT	63300	10522	52778	
STOCK	6989	2231	4758	
	140179	35064	105115	
MDS RENTAL UNITS	36030	12302	23729	
REPLACEMENT	33081	4841	28240	
STOCK	1802	615	1186	
	78913	17757	53156	
TOTAL	450924	122775	328148	
AGGREGATE				
 FIXED CAPITAL				
 USER CAPITAL	17150	6848	10302	
 433774	115927		317847	
AGGREGATE	450924	122775	328148	

LEGENDMRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE**DOLLAR TYPE: CURRENT**

KVA Communications and Electronics Co.

1

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995	
INCREMENTAL REVENUE	16894	28417	47863	86946	101854	121095	141519	
EQUIPMENT SALVAGE								
	16894	28417	47863	86946	101854	121095	141519	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	16912	25300	41503	73898	85041	100966	117994	
CAPITAL EXPENDITURE	14439	8625	13536	22194	18760	20902	24319	
CAPITAL MAINTENANCE	82	132	216	321	401	421	442	
INCOMES TAXES	-1472	-1444	-1216	-226	-525	-682	-1032	
	29961	32612	54040	96187	103677	121607	141723	
NET CASH FLOW								
	-13068	-4194	-6177	-9241	-1823	-512	-204	
P.V.- NET CASH FLOW								
	-7651	-2206	-2920	-3924	-696	-175	-63	
CUMULATIVE								
CASH INFLOWS	16894	45311	93174	180120	281974	403069	544588	
CASH OUTFLOWS	29961	62573	116613	212800	316477	438084	579806	
NET CASH FLOW								
	-13068	-17262	-23439	-32680	-34503	-35014	-35218	
P.V.- NET CASH FLOW								
	-7651	-9857	-12777	-16701	-17397	-17572	-17635	

2

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002	
INCREMENTAL REVENUE	184884	211520	238967	290179	325041	360484	411784	
EQUIPMENT SALVAGE								
	184884	211520	238967	290179	325041	360484	643085	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	154430	176491	199293	241899	271125	300834	344459	
CAPITAL EXPENDITURE	29286	34295	38853	44912	51956	58716	70130	
CAPITAL MAINTENANCE	516	629	742	871	1023	1199	1259	
INCOMES TAXES	-52	-718	-1709	-1168	-2696	-4715	22181	
	184179	210697	237179	286514	321407	356033	438029	
NET CASH FLOW								
	704	823	1788	3665	3634	4450	205057	
P.V.- NET CASH FLOW								
	195	205	399	736	655	721	29851	
CUMULATIVE								
CASH INFLOWS	729472	940992	1179959	1470138	1795179	2155662	2798748	
CASH OUTFLOWS	763986	974683	1211862	1498377	1819784	2175817	2613845	
NET CASH FLOW								
	-34514	-33691	-31903	-28238	-24605	-20154	184902	
P.V.- NET CASH FLOW								
	-17440	-17235	-16836	-16100	-15445	-14724	15127	

KVA Communications and Electronics Co.

3

ESTIMATED NET CASH FLOWS
(000'S)

REGION	CANADA	TOTAL	1989-1995	1996-2002
<u>CASH INFLOWS</u>				
INCREMENTAL REVENUE	2567447	544588	2022858	
EQUIPMENT SALVAGE	231301		231301	
	-----	-----	-----	2254159
<u>CASH OUTFLOWS</u>				
INCREMENTAL EXPENSE	2150145	461615	1688531	
CAPITAL EXPENDITURE	450924	122775	328148	
CAPITAL MAINTENANCE	8252	2014	6238	
INCOMES TAXES	4525	-6597	11122	
	-----	-----	-----	2034039
<u>NET CASH FLOW</u>		184902	35218	220120
<u>P.V.- NET CASH FLOW</u>		15127	-17635	32762

LEGENDMRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICEDOLLAR TYPE: CURRENTDISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 3 - Outputs

Market Sensitivity

KVA Communications and Electronics Co.
ESTIMATED INCREMENTAL MSA
REVENUES BY SERVICE TYPE
(000'S)

REGION	CANADA		
INCREMENTAL REVENUE	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	865309	179748	685561
ACCESS FEES	119956	25357	94599
EQUIP. SALES	16233	6272	9961
EQUIP. RENTALS	107409	22213	85196
REPAIR REVENUES	17234	3443	13791
INSTALLATION REV.	37460	9074	28385
	-----	1163601	246108
			917493
MTS AIRTIME FEES	391560	77570	313990
ACCESS FEES	38294	7755	30539
EQUIP. SALES	5710	2340	3370
EQUIP. RENTALS	39537	7739	31798
REPAIR REVENUES	5131	969	4162
INSTALLATION REV.	11027	2622	8405
	-----	491260	98995
			392265
MPS AIRTIME FEES	296098	65837	230261
ACCESS FEES	0	0	0
EQUIP. SALES	2454	783	1671
EQUIP. RENTALS	90202	19045	71156
REPAIR REVENUES	14225	3004	11222
INSTALLATION REV.	0	0	0
	-----	402979	88669
			314310
MDS AIRTIME FEES	103142	23033	80109
ACCESS FEES	15472	3076	12395
EQUIP. SALES	7171	2448	4723
EQUIP. RENTALS	46690	8922	37768
REPAIR REVENUES	21459	4030	17429
INSTALLATION REV.	38122	9359	28763
	-----	232056	50869
			181187
TOTAL	2289897	484641	1805255
AGGREGATE			
SHF AIRTIME FEES	1424980	301012	1123969
UHF AIRTIME FEES	231129	45177	185952
ACCESS FEES	173722	36188	137534
EQUIP. SALES	31569	11844	19725
EQUIP. RENTALS	283839	57920	225919
REPAIR REVENUES	58049	11446	46603
INSTALLATION REV.	88608	21055	65533
TOTAL	2289897	484641	1805255

LEGEND

MRS:MOBILE RADIO SERVICE
MPS:MOBILE PAGING SERVICE

MTS:MOBILE TELEPHONE SERVICE
MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

3

**ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000's)**

REGION CANADA

INCREMENTAL EXPENSE	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	701084	146178	554906
TELESAT ACCESS COST	86605	18100	68505
ADV./PROM./SELLING	72781	19459	53322
BILLING/COLLECTING	6396	1278	5118
REPAIR EXPENSE	27539	5502	22037
INSTALATION/REMOVAL	35028	8269	26759
OTHER EXPENSES	711	142	569
	930145	198929	731216

MTS AIRTIME COSTS	313100	61908	251192
TELESAT ACCESS COST	25782	5083	20699
ADV./PROM./SELLING	26052	6752	19300
BILLING/COLLECTING	1904	360	1545
REPAIR EXPENSE	8199	1548	6651
INSTALATION/REMOVAL	10328	2381	7947
OTHER EXPENSES	212	40	172
	385577	78072	307505

MPS AIRTIME COSTS	236750	52541	184209
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	43258	10985	32274
BILLING/COLLECTING	38796	8191	30604
REPAIR EXPENSE	75437	15928	59509
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	394241	87645	306596

MDS AIRTIME COSTS	82513	18426	64087
TELESAT ACCESS COST	12002	2370	9632
ADV./PROM./SELLING	31314	7684	23630
BILLING/COLLECTING	2659	499	2160
REPAIR EXPENSE	34276	6438	27838
INSTALATION/REMOVAL	41676	9586	32091
OTHER EXPENSES	295	55	240
	204736	45058	159678

TOTAL	1914699	409704	1504995
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AGGREGATE

SHF AIRTIME COSTS	1147586	242712	904874
UHF AIRTIME COSTS	185862	36342	149520
TELESAT ACCESS COST	124389	25553	98836
ADV./PROM./SELLING	173406	44880	128525
BILLING/COLLECTING	49756	10328	39427
REPAIR EXPENSE	145450	29416	116035
INSTALATION/REMOVAL	87033	20236	66797
OTHER EXPENSES	121B	237	980
	1914699	409704	1504995

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

3

ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000'S)

REGION	CANADA		
	TOTAL	1989-1995	1996-2002
CAPITAL EXPENDITURE			
FIXED CAPITAL			
INVESTMENT	13651	5451	8200
REPLACEMENT	0	0	0
	-----	-----	-----
USER CAPITAL	13651	5451	8200
MRS RENTAL UNITS			
REPLACEMENT	64900	25100	39801
STOCK	61214	10095	51119
	3245	1255	1990
	-----	-----	-----
	129359	36449	92809
MTS RENTAL UNITS			
REPLACEMENT	22838	9363	13475
STOCK	22773	3483	19290
	2284	936	1348
	-----	-----	-----
	47896	13783	34113
MPS RENTAL UNITS			
REPLACEMENT	55633	17759	37874
STOCK	50387	8376	42011
	5563	1776	3787
	-----	-----	-----
	111583	27911	83672
MDS RENTAL UNITS			
REPLACEMENT	28680	9792	18888
STOCK	26332	3853	22479
	1434	490	944
	-----	-----	-----
	56447	14135	42312
TOTAL	358935	97729	261206
AGGREGATE	-----	-----	-----
FIXED CAPITAL	13651	5451	8200
USER CAPITAL	345284	92278	253006
AGGREGATE	358935	97729	261206
LEGEND	-----	-----	-----

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

1

ESTIMATED NET CASH FLOWS
(000's)

REGION CANADA

CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	15098	25289	42219	77282	90746	107872	126136
EQUIPMENT SALVAGE							
	15098	25289	42219	77282	90746	107872	126136
CASH OUTFLOWS							
INCREMENTAL EXPENSE	14860	22375	36465	65502	75654	89821	105028
CAPITAL EXPENDITURE	11493	6865	10775	17667	14933	16638	19358
CAPITAL MAINTENANCE	65	105	172	256	319	335	351
INCOMES TAXES	-1045	-934	-622	517	437	471	370
	25374	28411	46790	83941	91343	107265	125107
NET CASH FLOW							
	-10276	-3123	-4571	-6859	-597	-607	-1029
P.V.- NET CASH FLOW	-6016	-1643	-2160	-2828	-228	208	317
CUMULATIVE							
CASH INFLOWS	15098	40387	82606	159888	250633	358505	484641
CASH OUTFLOWS	25374	53785	100575	184516	275858	383123	508230
NET CASH FLOW							
	-10276	-13398	-17969	-24628	-25225	-24618	-23589
P.V.- NET CASH FLOW	-6016	-7659	-9819	-12647	-12875	-12667	-12350

2

ESTIMATED NET CASH FLOWS
(000's)

REGION CANADA

CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	165326	189113	213541	259476	290244	321585	365970
EQUIPMENT SALVAGE							
	165326	189113	213541	259476	290244	321585	365970
CASH OUTFLOWS							
INCREMENTAL EXPENSE	137907	157600	177879	216058	241812	268042	305696
CAPITAL EXPENDITURE	23312	27299	30927	35750	41357	46738	55824
CAPITAL MAINTENANCE	410	501	591	693	814	954	1002
INCOMES TAXES	1547	1243	680	1564	611	722	20998
	163177	186643	210077	254056	284594	315012	363519
NET CASH FLOW							
	-2150	-2470	-3464	-5410	-5650	-6574	-165567
P.V.- NET CASH FLOW	595	614	774	1086	1019	1065	24246
CUMULATIVE							
CASH INFLOWS	649968	839080	1052622	1312098	1602341	1923927	2474012
CASH OUTFLOWS	671407	858049	1068127	1322192	1606786	1921798	2305317
NET CASH FLOW							
	-21439	-18969	-15505	-10095	-4445	2128	168695
P.V.- NET CASH FLOW	-11755	-11141	-10367	-9281	-8262	-7197	17051

KVA Communications and Electronics Co.

3

ESTIMATED NET CASH FLOWS
(000'S)

REGION CANADA

	TOTAL	1989-1995	1996-2002
CASH INFLOWS			
INCREMENTAL REVENUE	2289897	484641	1805255
EQUIPMENT SALVAGE	184116		184116
	2474012	484641	1989371
CASH OUTFLOWS			
INCREMENTAL EXPENSE	1914699	409704	1504995
CAPITAL EXPENDITURE	358935	97729	261206
CAPITAL MAINTENANCE	6568	1603	4965
INCOMES TAXES	25115	807	25921
	2305317	508230	1797087
NET CASH FLOW	188695	-23589	192284
P.V.- NET CASH FLOW	17051	-12350	29401

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 4 - Outputs

Market Sensitivity

KVA Communications and Electronics Co.
ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000's)

REGION	CANADA		
INCREMENTAL REVENUE	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	675328	139589	535739
ACCESS FEES	175865	37175	138690
EQUIP. SALES	23799	9195	14604
EQUIP. RENTALS	157470	32567	124904
REPAIR REVENUES	25266	5048	20218
INSTALLATION REV'S.	54919	13304	41615
	----- 1112648	236878	875770
MTS AIRTIME FEES	309109	61236	247873
ACCESS FEES	56143	11370	44773
EQUIP. SALES	8372	3431	4940
EQUIP. RENTALS	57965	11346	46619
REPAIR REVENUES	7522	1420	6102
INSTALLATION REV'S.	16166	3844	12323
	----- 455277	92637	362630
MPS AIRTIME FEES	233748	51973	181775
ACCESS FEES	0	0	0
EQUIP. SALES	3598	1149	2450
EQUIP. RENTALS	132243	27922	104321
REPAIR REVENUES	20855	4403	16452
INSTALLATION REV'S.	0	0	0
	----- 390445	85447	304997
MDS AIRTIME FEES	81423	18183	63240
ACCESS FEES	22682	4510	18172
EQUIP. SALES	10513	3589	6924
EQUIP. RENTALS	68452	13081	55371
REPAIR REVENUES	31461	5909	25552
INSTALLATION REV'S.	55889	13721	42169
	----- 270422	58493	211429
TOTAL	2228791	473965	1754826
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AGGREGATE			
SHF AIRTIME FEES	1118033	235561	882472
UHF AIRTIME FEES	181575	35420	146155
ACCESS FEES	254690	53055	201635
EQUIP. SALES	46283	17364	28919
EQUIP. RENTALS	416130	84916	331215
REPAIR REVENUES	85105	16781	68324
INSTALLATION REV'S.	126975	30868	96106
TOTAL	2228791	473965	1754826
<hr/>			
LEGEND			
MRS:MOBILE RADIO SERVICE	MTS:MOBILE TELEPHONE SERVICE		
MPS:MOBILE PAGING SERVICE	MDS:MOBILE DATA SERVICE		
DOLLAR TYPE:CURRENT			

KVA Communications and Electronics Co.

3

ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000'S)

REGION CANADA

INCREMENTAL EXPENSE	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	553456	115397	438058
TELESAT ACCESS COST	126970	24536	100434
ADV./PROM./SELLING	91573	25133	66440
BILLING/COLLECTING	9377	1874	7504
REPAIR EXPENSE	40374	8067	32307
INSTALATION/REMOVAL	51354	12123	39231
OTHER EXPENSES	1042	208	834
	-----	874146	189338
			684809
MTS AIRTIME COSTS	247170	48872	198298
TELESAT ACCESS COST	37798	7452	30346
ADV./PROM./SELLING	31462	8478	22983
BILLING/COLLECTING	2792	527	2265
REPAIR EXPENSE	12020	2269	9751
INSTALATION/REMOVAL	15142	3491	11651
OTHER EXPENSES	310	59	252
	-----	346654	71149
			275546
MPS AIRTIME COSTS	186897	41478	145420
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	58211	14790	43421
BILLING/COLLECTING	56878	12009	44869
REPAIR EXPENSE	110546	23352	87245
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	-----	412582	91628
			320954
MDS AIRTIME COSTS	65138	14546	50592
TELESAT ACCESS COST	17596	3474	14122
ADV./PROM./SELLING	44116	10828	33288
BILLING/COLLECTING	3899	732	3167
REPAIR EXPENSE	50251	9438	40813
INSTALATION/REMOVAL	61101	14053	47048
OTHER EXPENSES	433	81	352
	-----	242534	53153
			189381
TOTAL	1875957	405268	1470689
AGGREGATE	-----	-----	-----
SHF AIRTIME COSTS	905936	191604	714333
UHF AIRTIME COSTS	146725	28689	118036
TELESAT ACCESS COST	182364	37462	144902
ADV./PROM./SELLING	225362	59229	166133
BILLING/COLLECTING	72946	15142	57804
REPAIR EXPENSE	213242	43126	170116
INSTALATION/REMOVAL	127597	29667	97930
OTHER EXPENSES	1785	348	1437
TOTAL	1875957	405268	1470689
LEGEND	-----	-----	-----
MRS:MOBILE RADIO SERVICE			
MPS:MOBILE PAGING SERVICE			
MDS:MOBILE DATA SERVICE			
DOLLAR TYPE:CURRENT	-----	-----	-----

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000'S)

REGION	CANADA		
	TOTAL	1989-1995	1996-2002
CAPITAL EXPENDITURE			
FIXED CAPITAL			
INVESTMENT	20014	7992	12022
REPLACEMENT	0	0	0
-----	20014	7992	12022
USER CAPITAL			

MRS RENTAL UNITS	95149	36798	58351
REPLACEMENT	89744	14800	74944
STOCK	4757	1840	2918
-----	189651	53438	136213
MTS RENTAL UNITS	33483	13727	19756
REPLACEMENT	33388	5107	28281
STOCK	3348	1373	1976
-----	70219	20207	50012
MPS RENTAL UNITS	81562	26036	55526
REPLACEMENT	73871	12280	61591
STOCK	8156	2604	5553
-----	163589	40920	122670
MDS RENTAL UNITS	42048	14356	27692
REPLACEMENT	38605	5649	32956
STOCK	2102	718	1385
-----	82755	20723	62032
TOTAL	526228	143279	382749
AGGREGATE			
FIXED CAPITAL	20014	7992	12022
USER CAPITAL	506214	135287	370927
AGGREGATE	526228	143279	382749
-----	-----	-----	-----

LEGEND

MRS:MOBILE RADIO SERVICE
MPS:MOBILE PAGING SERVICEMTS:MOBILE TELEPHONE SERVICE
MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS		1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	15948	25307	41936	75661	87760	104603	122751	
EQUIPMENT SALVAGE		15948	25307	41936	75661	87760	104603	122751
CASH OUTFLOWS								
INCREMENTAL EXPENSE	16546	22941	36853	64893	73638	87603	102794	
CAPITAL EXPENDITURE	16850	10065	15797	25901	21893	24393	28381	
CAPITAL MAINTENANCE	96	153	253	375	467	491	515	
INCOMES TAXES	-2006	-2322	-2589	-2493	-3362	-4041	-4953	
	31486	30838	50314	88675	92636	108446	126737	
NET CASH FLOW		-15538	-5531	-8378	-13013	-4877	-3843	-3986
P.V.- NET CASH FLOW		-9097	-2910	-3960	-5526	-1861	-1317	-1228
CUMULATIVE								
CASH INFLOWS	15948	41255	83190	158852	246611	351214	473965	
CASH OUTFLOWS	31486	62324	112637	201312	293949	402394	529131	
NET CASH FLOW		-15538	-21069	-29447	-42461	-47337	-51180	-55166
P.V.- NET CASH FLOW		-9097	-12007	-15967	-21493	-23354	-24671	-25899

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ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA							
CASH INFLOWS		1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	158958	182625	207195	250831	282000	313770	359447	
EQUIPMENT SALVAGE		158958	182625	207195	250831	282000	313770	359447
CASH OUTFLOWS								
INCREMENTAL EXPENSE	133359	152984	173439	209854	236112	262869	302072	
CAPITAL EXPENDITURE	34177	40023	45342	52413	60632	68521	81842	
CAPITAL MAINTENANCE	602	734	866	1017	1193	1399	1469	
INCOMES TAXES	-5031	-6457	-8266	-9046	-11662	-14858	-15288	
	163106	187283	211381	254238	286275	317931	400671	
NET CASH FLOW		-4148	-4659	-4186	-3407	-4275	-4162	-228704
P.V.- NET CASH FLOW		-1148	-1158	-935	-684	-771	-674	-33294
CUMULATIVE								
CASH INFLOWS	632923	815548	1022743	1273574	1555574	1869344	2498719	
CASH OUTFLOWS	692237	879520	1090901	1345139	1631414	1949346	2350017	
NET CASH FLOW		-59314	-63973	-68158	-71565	-75840	-80002	-148702
P.V.- NET CASH FLOW		-27047	-28205	-29140	-29824	-30595	-31269	-2025

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE	2228791	473965	1754826	
EQUIPMENT SALVAGE	269928		269928	
	2498719	473965		2024754
CASH OUTFLOWS				
INCREMENTAL EXPENSE	1875957	405268	1470689	
CAPITAL EXPENDITURE	526228	143279	382949	
CAPITAL MAINTENANCE	9630	2350	7279	
INCOMES TAXES	-61798	-21766	-40032	
	2358017	529131		1820886
NET CASH FLOW	148702	55166		203868
P.V. - NET CASH FLOW	2025	-25899		27923

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICEMTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 5 - Outputs

Market Sensitivity

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000's)

REGION	CANADA		
INCREMENTAL REVENUE	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	591344	122627	468717
ACCESS FEES	106996	22617	84379
EQUIP. SALES	18823	7272	11551
EQUIP. RENTALS	124546	25758	98788
REPAIR REVENUES	15372	3071	12301
INSTALLATION REV'S.	33413	8094	25318
	-----	-----	-----
	890494	189440	701054
MTS AIRTIME FEES	268659	53223	215436
ACCESS FEES	34157	6917	27240
EQUIP. SALES	6621	2714	3907
EQUIP. RENTALS	45845	8974	36872
REPAIR REVENUES	4577	864	3713
INSTALLATION REV'S.	9836	2339	7497
	-----	-----	-----
	365694	75030	294664
MPS AIRTIME FEES	203159	45172	157987
ACCESS FEES	0	0	0
EQUIP. SALES	2846	908	1937
EQUIP. RENTALS	104593	22084	82509
REPAIR REVENUES	12688	2679	10009
INSTALLATION REV'S.	0	0	0
	-----	-----	-----
	323287	70844	252443
MDS AIRTIME FEES	70768	15804	54965
ACCESS FEES	13800	2744	11056
EQUIP. SALES	8315	2839	5477
EQUIP. RENTALS	54140	10346	43794
REPAIR REVENUES	19141	3595	15546
INSTALLATION REV'S.	34003	8348	25655
	-----	-----	-----
	200167	43675	156492
TOTAL	1783643	378988	1404655
	=====	=====	=====
AGGREGATE			
SHF AIRTIME FEES	975617	205903	769714
UHF AIRTIME FEES	158314	30923	127391
ACCESS FEES	154953	32278	122674
EQUIP. SALES	36606	13733	22872
EQUIP. RENTALS	329124	67161	261963
REPAIR REVENUES	51778	10209	41568
INSTALLATION REV'S.	77251	18780	58471
	-----	-----	-----
TOTAL	1783643	378988	1404655
	=====	=====	=====

LEGEND

MRS:MOBILE RADIO SERVICE MTS:MOBILE TELEPHONE SERVICE
MPS:MOBILE PAGING SERVICE MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

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**ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000's)**

REGION CANADA

INCREMENTAL EXPENSE	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	481030	100296	380734
TELESAT ACCESS COST	77248	16144	61104
ADV./PROM./SELLING	61166	16538	44628
BILLING/COLLECTING	5705	1140	4565
REPAIR EXPENSE	24564	4908	19656
INSTALLATION/REMOVAL	31244	7376	23868
OTHER EXPENSES	634	127	507
	-----	681591	146529
			535062
MTS AIRTIME COSTS	214825	42477	172349
TELESAT ACCESS COST	22996	4534	18462
ADV./PROM./SELLING	21499	5665	15834
BILLING/COLLECTING	1699	321	1378
REPAIR EXPENSE	7313	1381	5932
INSTALLATION/REMOVAL	9212	2124	7088
OTHER EXPENSES	189	36	153
	-----	277733	56536
			221197
MPS AIRTIME COSTS	162440	36050	126390
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	37644	9554	28089
BILLING/COLLECTING	34604	7306	27298
REPAIR EXPENSE	67286	14207	53079
INSTALLATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	-----	301974	67118
			234857
MDS AIRTIME COSTS	56614	12643	43971
TELESAT ACCESS COST	10705	2114	8592
ADV./PROM./SELLING	27760	6811	20949
BILLING/COLLECTING	2372	446	1927
REPAIR EXPENSE	30573	5742	24831
INSTALLATION/REMOVAL	37174	8550	28624
OTHER EXPENSES	264	50	214
	-----	165461	36354
			129107
TOTAL	1426760	306537	1120223
AGGREGATE			
SHF AIRTIME COSTS	787385	166531	620855
UHF AIRTIME COSTS	127524	24935	102589
TELESAT ACCESS COST	110950	22792	88158
ADV./PROM./SELLING	148069	38568	109501
BILLING/COLLECTING	44380	9213	35168
REPAIR EXPENSE	129736	26238	103498
INSTALLATION/REMOVAL	77630	18050	59580
OTHER EXPENSES	1086	212	874
TOTAL	1426760	306537	1120223

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

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ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000'S)

REGION	CANADA		
CAPITAL EXPENDITURE	TOTAL	1989-1995	1996-2002
FIXED CAPITAL			
INVESTMENT REPLACEMENT	12176 0	4862 0	7314 0
USER CAPITAL	12176	4862	7314
MRS RENTAL UNITS	75255	29104	46151
REPLACEMENT STOCK	70980	11705	59275
	3763	1455	2308
	149998	42265	107733
MTS RENTAL UNITS	26482	10857	15625
REPLACEMENT STOCK	26407	4039	22368
	2648	1086	1563
	55537	15982	39555
MPS RENTAL UNITS	64509	20592	43916
REPLACEMENT STOCK	58426	9712	48714
	6451	2059	4392
	129386	32364	97022
MDS RENTAL UNITS	33256	11354	21902
REPLACEMENT STOCK	30534	4468	26066
	1663	568	1095
	65453	18390	49063
TOTAL	412550	111863	300687
AGGREGATE			
FIXED CAPITAL	12176	4862	7314
USER CAPITAL	400373	107001	293372
AGGREGATE	412550	111863	300687

LEGEND

MRS:MOBILE RADIO SERVICE
MPS:MOBILE PAGING SERVICE

MTS:MOBILE TELEPHONE SERVICE
MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.
ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA						
CASH INFLOWS	1989	1990	1991	1992	1993	1994	1995
INCREMENTAL REVENUE	12483	20184	33454	60456	70374	83807	98230
EQUIPMENT SALVAGE							
	12483	20184	33454	60456	70374	83807	98230
CASH OUTFLOWS							
INCREMENTAL EXPENSE	11705	17006	27537	49039	56221	66804	78226
CAPITAL EXPENDITURE	12997	7779	12179	20108	17061	19293	22447
CAPITAL MAINTENANCE	58	93	154	228	284	299	314
INCOMES TAXES	-923	-1111	-989	-364	-975	-1230	-1635
	23837	23767	38880	69011	72591	85166	99351
NET CASH FLOW							
	-11354	-3583	-5426	-8556	-2217	-1358	-1121
P.V.- NET CASH FLOW	-6647	-1885	-2565	-3633	-846	-466	-345
CUMULATIVE							
CASH INFLOWS	12483	32667	66121	126577	196950	280758	378988
CASH OUTFLOWS	23837	47604	86484	155495	228086	313252	412604
NET CASH FLOW							
	-11354	-14937	-20363	-28919	-31136	-32495	-33616
P.V.- NET CASH FLOW	-6647	-8532	-11097	-14730	-15576	-16042	-16387

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA						
CASH INFLOWS	1996	1997	1998	1999	2000	2001	2002
INCREMENTAL REVENUE	127600	146436	165937	201011	225714	250949	287007
EQUIPMENT SALVAGE							210827
	127600	146436	165937	201011	225714	250949	497834
CASH OUTFLOWS							
INCREMENTAL EXPENSE	102209	116987	132282	160420	179930	199808	228585
CAPITAL EXPENDITURE	26822	31303	35532	41086	47521	53693	64730
CAPITAL MAINTENANCE	366	446	527	618	726	851	894
INCOMES TAXES	-1223	-1880	-2794	-2755	-4121	-5894	18286
	128175	146856	165548	199389	224057	248458	312495
NET CASH FLOW							
	-575	-420	-389	-1642	-1657	-2491	-185339
P.V.- NET CASH FLOW	-159	-104	87	330	299	404	26981
CUMULATIVE							
CASH INFLOWS	506588	653024	818962	1019972	1245687	1496636	1994470
CASH OUTFLOWS	540779	687635	853183	1052551	1276608	1525066	1837561
NET CASH FLOW							
	-34190	-34610	-34221	-32579	-30922	-28430	156909
P.V.- NET CASH FLOW	-16546	-16651	-16564	-16234	-15935	-15532	11449

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000'S)

REGION	CANADA	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE	1783643	378988	1404655	
EQUIPMENT SALVAGE	210827		210827	
	1994470	378988		1615482
CASH OUTFLOWS				
INCREMENTAL EXPENSE	1426760	306537	1120223	
CAPITAL EXPENDITURE	412550	111863	300687	
CAPITAL MAINTENANCE	5859	1430	4429	
INCOMES TAXES	-7607	-7226	-380	
	1837561	412604		1424958
NET CASH FLOW	156909	33616		190524
P.V. - NET CASH FLOW	11449	-16387		27836

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

KVA Communications and Electronics Co.

MSAT Economic Model

RUN 6 - Outputs

Market Sensitivity

KVA Communications and Electronics Co.

ESTIMATED INCREMENTAL MSAT
REVENUES BY SERVICE TYPE
(000's\$)

REGION CANADA

INCREMENTAL REVENUE	TOTAL	1989-1995	1996-2002
MRS AIRTIME FEES	1000288	207430	792859
ACCESS FEES	180989	38258	142731
EQUIP. SALES	17145	6624	10521
EQUIP. RENTALS	113441	23461	89980
REPAIR REVENUES	26003	5195	20807
INSTALLATION REV.	56519	13692	42827
	-----	1394384	294659
			1099725
MTS AIRTIME FEES	454449	90029	364421
ACCESS FEES	57778	11701	46077
EQUIP. SALES	6031	2472	3559
EQUIP. RENTALS	41757	8173	33584
REPAIR REVENUES	7742	1462	6280
INSTALLATION REV.	16637	3956	12682
	-----	584395	117792
			466603
MPS AIRTIME FEES	343654	76411	267244
ACCESS FEES	0	0	0
EQUIP. SALES	2592	827	1765
EQUIP. RENTALS	95267	20115	75152
REPAIR REVENUES	21463	4532	16931
INSTALLATION REV.	0	0	0
	-----	462977	101885
			361092
MDS AIRTIME FEES	119708	26733	92976
ACCESS FEES	23343	4642	18702
EQUIP. SALES	7574	2585	4988
EQUIP. RENTALS	49312	9423	39889
REPAIR REVENUES	32378	6081	26297
INSTALLATION REV.	57518	14121	43397
	-----	289833	63585
			226248
TOTAL	2731588	577921	2153667
AGGREGATE	-----	-----	-----
SHF AIRTIME FEES	1650304	348295	1302010
UHF AIRTIME FEES	267795	52307	215488
ACCESS FEES	262110	54600	207510
EQUIP. SALES	33342	12509	20833
EQUIP. RENTALS	299778	61173	238605
REPAIR REVENUES	87585	17270	70315
INSTALLATION REV.	130674	31768	98906
TOTAL	2731588	577921	2153667

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

**ESTIMATED INCREMENTAL MSAT
EXPENSES BY SERVICE TYPE
(000'S)**

REGION CANADA

INCREMENTAL EXPENSE	TOTAL	1989-1995	1996-2002
MRS AIRTIME COSTS	813686	169656	644030
TELESAT ACCESS COST	130669	27309	103360
ADV./PROM./SELLING	100588	27251	73337
BILLING/COLLECTING	9650	1928	7722
REPAIR EXPENSE	41550	8302	33249
INSTALATION/REMOVAL	52850	12476	40374
OTHER EXPENSES	1072	214	858
	1150067	247136	902930
MTS AIRTIME COSTS	363388	71851	291536
TELESAT ACCESS COST	38899	7669	31230
ADV./PROM./SELLING	35318	9330	25988
BILLING/COLLECTING	2873	542	2331
REPAIR EXPENSE	12371	2335	10035
INSTALATION/REMOVAL	15583	3593	11990
OTHER EXPENSES	319	60	259
	468752	95382	373370
MPS AIRTIME COSTS	274775	60980	213795
TELESAT ACCESS COST	0	0	0
ADV./PROM./SELLING	61499	15632	45866
BILLING/COLLECTING	58535	12359	46176
REPAIR EXPENSE	113818	24032	89786
INSTALATION/REMOVAL	0	0	0
OTHER EXPENSES	0	0	0
	508627	113003	395623
MDS AIRTIME COSTS	95766	21386	74380
TELESAT ACCESS COST	18108	3575	14533
ADV./PROM./SELLING	45691	11217	34475
BILLING/COLLECTING	4012	754	3259
REPAIR EXPENSE	51715	9713	42002
INSTALATION/REMOVAL	62881	14463	48418
OTHER EXPENSES	446	84	362
	278620	61191	217429
TOTAL	2406065	516712	1889352
AGGREGATE			
SHF AIRTIME COSTS	1331901	281695	1050206
UHF AIRTIME COSTS	215713	42179	173535
TELESAT ACCESS COST	187677	38554	149123
ADV./PROM./SELLING	243096	63430	179666
BILLING/COLLECTING	75071	15583	59488
REPAIR EXPENSE	219454	44382	175072
INSTALATION/REMOVAL	131315	30532	100783
OTHER EXPENSES	1837	358	1479
TOTAL	2406065	516712	1889352

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

KVA Communications and Electronics Co.

3

ESTIMATED INCREMENTAL CAPITAL
EXPENDITURES BY SERVICE TYPE
(000's)

REGION	CANADA			
		TOTAL	1989-1995	1996-2002
CAPITAL EXPENDITURE				
FIXED CAPITAL				
INVESTMENT		20597	8225	12372
REPLACEMENT		0	0	0
USER CAPITAL		20597	8225	12372
MRS RENTAL UNITS		68545	26509	42036
REPLACEMENT		64651	10662	53989
STOCK		3427	1325	2102
		138623	38496	98127
MTS RENTAL UNITS		24121	9889	14232
REPLACEMENT		24052	3679	20373
STOCK		2412	989	1423
		50585	14557	36028
MPS RENTAL UNITS		58757	18756	40000
REPLACEMENT		53216	8846	44370
STOCK		5876	1876	4000
		117849	29478	88371
MDS RENTAL UNITS		30291	10342	19949
REPLACEMENT		27811	4070	23742
STOCK		1515	517	997
		59616	14929	44688
TOTAL		385271	105685	279586
AGGREGATE				
FIXED CAPITAL		20597	8225	12372
USER CAPITAL		364674	97460	267214
AGGREGATE		385271	105685	279586

LEGEND

MRS:MOBILE RADIO SERVICE
MPS:MOBILE PAGING SERVICE

MTS:MOBILE TELEPHONE SERVICE
MDS:MOBILE DATA SERVICE

DOLLAR TYPE:CURRENT

KVA Communications and Electronics Co.

ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA	1989	1990	1991	1992	1993	1994	1995
CASH INFLOWS								
INCREMENTAL REVENUE	18076	30057	50268	92205	108192	128643	150479	
EQUIPMENT SALVAGE								
	18076	30057	50268	92205	108192	128643	150479	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	19650	28603	46365	82660	94829	112674	131931	
CAPITAL EXPENDITURE	12697	7558	11913	19296	16202	17573	20445	
CAPITAL MAINTENANCE	99	158	260	386	481	505	530	
INCOMES TAXES	-2080	-1919	-1930	-1171	-1152	-1368	-1774	
	30366	34400	56608	101172	110361	129383	151133	
NET CASH FLOW								
	-12290	-4343	-6340	-8966	-2169	-741	-653	
P.V. - NET CASH FLOW								
	-7195	-2284	-2997	-3808	-827	-254	-201	
CUMULATIVE								
CASH INFLOWS	18076	48134	98402	190607	298799	427442	577921	
CASH OUTFLOWS	30366	64766	121374	222545	332906	462290	613422	
NET CASH FLOW								
	-12290	-16632	-22972	-31939	-34107	-34848	-35501	
P.V. - NET CASH FLOW								
	-7195	-9480	-12476	-16284	-17112	-17366	-17567	

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ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA	1996	1997	1998	1999	2000	2001	2002
CASH INFLOWS								
INCREMENTAL REVENUE	197190	225574	254731	309615	346327	383625	436607	
EQUIPMENT SALVAGE								
	197190	225574	254731	309615	346327	383625	436607	
CASH OUTFLOWS								
INCREMENTAL EXPENSE	172426	197337	223113	270598	303474	336963	385441	
CAPITAL EXPENDITURE	24973	29427	33221	38381	44413	50211	58958	
CAPITAL MAINTENANCE	619	755	891	1046	1228	1440	1512	
INCOMES TAXES	-775	-1589	-2756	-2290	-4110	-6411	-16484	
	197244	225935	254721	307735	345006	382263	462346	
NET CASH FLOW								
	-54	-357	-260	-1579	-1321	-1421	-173177	
P.V. - NET CASH FLOW								
	-15	-89	58	377	238	230	25205	
CUMULATIVE								
CASH INFLOWS	775111	1000685	1255416	1565030	1911357	2294982	2930548	
CASH OUTFLOWS	810666	1036596	1291067	1598802	1943809	2326012	2788407	
NET CASH FLOW								
	-35555	-35912	-35651	-33772	-32451	-31030	142142	
P.V. - NET CASH FLOW								
	-17582	-17670	-17612	-17235	-16997	-16766	8443	

KVA Communications and Electronics Co.

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ESTIMATED NET CASH FLOWS
(000's)

REGION	CANADA	TOTAL	1989-1995	1996-2002
CASH INFLOWS				
INCREMENTAL REVENUE	2731588	577921	2153667	
EQUIPMENT SALVAGE	198960		198960	
	2930548	577921	2352627	
CASH OUTFLOWS				
INCREMENTAL EXPENSE	2406065	516712	1889352	
CAPITAL EXPENDITURE	385271	105685	279586	
CAPITAL MAINTENANCE	9910	2419	7492	
INCOMES TAXES	-12839	-11393	-1445	
	2788407	613422	2174985	
NET CASH FLOW	142142	35501	177643	
P.V. - NET CASH FLOW	8443	-17567	26010	

LEGEND

MRS: MOBILE RADIO SERVICE
MPS: MOBILE PAGING SERVICE

MTS: MOBILE TELEPHONE SERVICE
MDS: MOBILE DATA SERVICE

DOLLAR TYPE: CURRENT

DISCOUNT RATE: .113
TAX RATE : .500

CACC / CCAC



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