

Assignment Iridium

To: Professor Efraim Benmelech
From: Group E, EMBA 141

I. Statement of Problem.

Iridium LLC filed for bankruptcy in August 1999. The immediate challenge is to determine whether Iridium's financial distress was the result of its capital structure or its flawed business model, and what lessons should be drawn for restructuring and for other satellite ventures still under development.

II. Statement of Facts and Assumptions.

Iridium LLC, launched a global satellite communication service via 66 Low Earth Orbit (LEO) satellites.

The company targeted business travelers and remote users with a proposition that failed to meet market needs: \$3,000 handsets and high service rates of \$3.00 to \$7.50 per minute. Despite assuming the capture of 1% of the cellular market (~2.3 million subscribers in 1998), the company recorded only 10,294 total subscribers by March 1999. This was below the financial covenant requirement of

52,000 subscribers, triggering default. Total debt stood at \$2.854 billion, resulting in an unsustainable book leverage of 86%. Projections showed high future revenues (\$6.2B by 2004) and high capital expenditures (~ \$6B between 2000–2004) needed for system upgrades and satellite replacement.

Their stock price was \$39.56 with 141 million share outstanding making their market cap approximately \$5.6 Billion. They had projected revenue and EBITDA in 1999 of \$403 million and negative \$351 million respectively. Projections also showed revenues rising to \$6.2 billion by 2004, with EBITDA more than

Discount rate is precise
B/c it sets CAPM ?
Risk comes from Beta

auspicious consumption →

Need for complete

anthropological complement → not solve?

\$4.9 billion, debt amortized to zero by 2002, but capital expenditures of ~\$6 billion needed between 2000–2004 for system upgrades/replacements.

Finally, in terms of competitors, emerging ventures like Globalstar (with 79% leverage) and ICO (24% leverage) both reported net losses, while established operators PanAmSat (22% leverage) and COMSAT (41% leverage) had profitable operations.

Key assumptions used include WACC of 20%, terminal growth rate of 3%, and NWC projections from Exhibit 5.

III. Analysis.

*Short term debt
as a tripwire*

→ Efficient exit

*Bad firms distract a
good market*

We first calculated the FCF of Iridium (year-end 1998) using the Exhibit 5 projections. See Exhibit 1.

Next, we calculated the DCF Valuation using the 20% WACC and assumed 3% terminal growth rate. See Exhibit 2. Based on projections, Iridium appeared highly valuable in late 1998 (if the subscriber and profitability estimates held true). Enterprise Value is \$9.037 billion, yielding a Value Per Share of \$44.02.

This value is above the market price of \$39.56, which supported the buy recommendations from analysts.

The valuation confirms that if the subscriber and profitability estimates held true, Iridium was highly valuable; the problem was that these projections were fundamentally disconnected from reality.

Next, we looked at the target leverage ratio. Iridium used a 60% debt-to-total-capital target which aligned with utility benchmarks. However, because of the increased project risk, including upfront cost, adoption uncertainty and the technology itself, it would have been better to target a 30-40% debt ratio which is what satellite companies averaged. See Exhibit 3.

Iridium's debt target was initially 50%, rising to a goal of 60% debt-to-total-capital. This target was based on the analogy of a stable utility with predictable, high cash flows. While utility benchmarks (like Local

Telephone Service at 59%) supported this level, Iridium was a highly risky, unproven technology startup facing intense uncertainty regarding adoption, technology, and competition. For an industry characterized by high project risk and upfront cost, a lower ratio was appropriate. Established satellite operators like PanAmSat and COMSAT avg. 37% leverage (based on book values of comparable firms).

Finally, we looked at the capital structure. The fact that Iridium had such high leverage, combined with the restrictive covenants from lenders created a high stakes situation of needing to hit adoption and subscriber numbers every year. Unfortunately, Iridium could not hit their subscriber numbers due to the price of phones, cost of minutes, distribution challenges, and lack of product features.

IV. Recommendation. → Improve "Corporate Governance"

We recommend a comprehensive restructuring approach requiring both strategic financial and operational changes. Iridium must shed the utility model and adopt a venture-style capital structure.

Reduce Leverage: Reduce the Debt-to-Total Capital ratio to 35–40% through massive debt-to-equity conversions. **Increase Liquidity:** Maintain larger cash reserves of at least \$500 million for operational flexibility to cover inevitable delays in system maintenance and market adoption. **Niche Focus:** Redesign the value proposition to focus narrowly on specific, unserved use cases where cellular cannot compete, such as maritime, aviation, and emergency/government services. **Aggressive Pricing:** Reduce per-minute pricing to \$1–\$2 to achieve meaningful market penetration. **Distribution & Product:** Improve distribution immediately via partnerships with existing global telecom operators and develop indoor-capable phones to address a critical product flaw.

The broader industry lesson is that LEO satellite ventures should be treated as high-risk technology startups requiring venture-style equity tolerance rather than debt-heavy utility models, with financing

structures that reflect the inherent uncertainty in proving new technology markets rather than the stable cash flows of established telecommunications operators.

Professor Notes

100% coverage -> false promise

Innovation must maximize value for...



They supplied a lot
But when it was
the Demand.

Define +
Validate

BOD
- Incentives!

Does it have good corp

① Enail Todd Richardson ^{Gov.}

② OCT coordination in STL

③ Spoulding Chicago

④ Denny Fund?

LA powder -> Invest
in work max

#H - ? = 25 contributions

How to
market
skillcraft

Complement

3 Boards

- Skillcraft

- CTS

- ceA X

Stadium

-> idium²

8/3

Ex of top-down idea that wasn't bottom-up refined

He used APV) look at the APV slides

change in capital structure

ROCA

Exhibit 1. Iridium - FCF (1999 - 2007)

Year	EBITDA	Less: Taxes	Less: CapEx	Less: Δ NWC	Free Cash Flow
1999	(\$351)	\$0	\$927	\$290	(\$1,568)
2000	\$1,339	\$0	\$1,349	\$63	(\$73)
2001	\$2,809	\$176	\$1,246	(\$102)	\$1,489
2002	\$3,859	\$337	\$1,258	(\$81)	\$2,345
2003	\$4,611	\$520	\$1,274	(\$54)	\$2,871
2004	\$4,973	\$580	\$385	(\$28)	\$4,036
2005	\$5,100	\$612	\$391	(\$12)	\$4,109
2006	\$5,084	\$633	\$413	(\$4)	\$4,042
2007	\$5,001	\$646	\$844	(\$1)	\$3,512

Don't overkey Big Decisions onto each other

'99

Amazon shareholder letter

Lack is the residue of design

S.C

CAC -> Market speed + salaries

Exhibit 2. Iridium - DCF Model (1999 - 2007)

	1998A	1999E	2000E	2001E	2002E	2003E	2004E	2005E	2006E	2007E
REVENUE & OPERATING METRICS										
Voice Subscribers (000s)	5	600	1,475	2,525	3,675	4,550	5,275	5,900	6,525	7,150
Paging Subscribers (000s)	0	50	125	225	325	425	525	600	650	690
Total Revenue	\$0	\$403	\$2,183	\$3,748	\$4,994	\$5,821	\$6,249	\$6,435	\$6,495	\$6,481
OPERATING PERFORMANCE										
EBITDA	-\$436	-\$351	\$1,339	\$2,809	\$3,859	\$4,611	\$4,973	\$5,100	\$5,084	\$5,001
Depreciation/Amortization	\$552	\$811	\$966	\$1,213	\$1,333	\$1,084	\$1,109	\$1,020	\$822	\$605
EBIT	-\$988	\$1,162	\$373	\$1,596	\$2,526	\$3,527	\$3,864	\$4,080	\$4,262	\$4,396
Interest Expense, net	\$265	\$387	\$454	\$424	\$278	\$59	\$0	\$0	\$39	\$92
Pre-Tax Income	\$1,253	\$1,549	-\$81	\$1,172	\$2,248	\$3,468	\$3,864	\$4,080	\$4,223	\$4,304

VC incentive to oversight

5 -> Syndications don't have incentive to merit

Taxes @ 15%	\$0	\$0	\$0	\$176	\$337	\$520	\$580	\$612	\$633	\$646
Net Income	\$1,253	\$1,549	-\$81	\$996	\$1,911	\$2,948	\$3,284	\$3,468	\$3,590	\$3,658
FREE CASH FLOW CALCULATION										
EBITDA	-\$436	-\$351	\$1,339	\$2,809	\$3,859	\$4,611	\$4,973	\$5,100	\$5,084	\$5,001
Less: Taxes (Cash)	\$0	\$0	\$0	\$176	\$337	\$520	\$580	\$612	\$633	\$646
Less: Capital Expenditures	\$716	\$927	\$1,349	\$1,246	\$1,258	\$1,274	\$385	\$391	\$413	\$844
Less: Incr. in Net Working Capital	-\$398	\$290	\$63	-\$102	-\$81	-\$54	-\$28	-\$12	-\$4	-\$1
FREE CASH FLOW	-\$754	\$1,568	-\$73	\$1,489	\$2,345	\$2,871	\$4,036	\$4,109	\$4,042	\$3,512
DCF VALUATION										
Discount Factor @ 20%	1	0.833	0.694	0.579	0.482	0.402	0.335	0.279	0.233	0.194
Present Value of FCF	-\$754	\$1,306	-\$51	\$862	\$1,130	\$1,154	\$1,352	\$1,146	\$942	\$681
PV of Explicit FCF (1999-2007)										\$4,910
2008 FCF (3% growth)										\$3,617
Terminal Value										\$21,276
PV of Terminal Value										\$4,127
ENTERPRISE VALUE										\$9,037
Less: Net Debt										-\$2,829
EQUITY VALUE										\$6,208
Shares Outstanding (millions)										141
VALUE PER SHARE										\$44.02
Market Price (12/31/98)										\$39.56

Exhibit 3. Debt-to Total Capital Comparable Ratio

Debt
 ↳ Amount
 ↳ Total

Globalstar	79%
ICO Global	24%
Gilat Satellite Networks	26%
PanAmSat	22%
COMSAT	41%
Orbital Sciences	29%
Average	37%