



GILMOUR SPACE TECHNOLOGIES

LOW COST ACCESS TO SPACE

ADAM GILMOUR, CEO & FOUNDER



WHO

NEW AUSTRALIAN ROCKET COMPANY

GILMOUR SPACE

A stylized map of the Earth from space, showing the continents of Asia and Australia. Two white lines with red circular endpoints point to specific locations: one to Singapore in Southeast Asia and another to the Gold Coast in Queensland, Australia.

SINGAPORE

R&D, SUB-SYSTEMS

GOLD COAST, QUEENSLAND

HQ - ROCKET DEVELOPMENT & LAUNCH





WHAT

GILMOUR SPACE

OUR MISSION

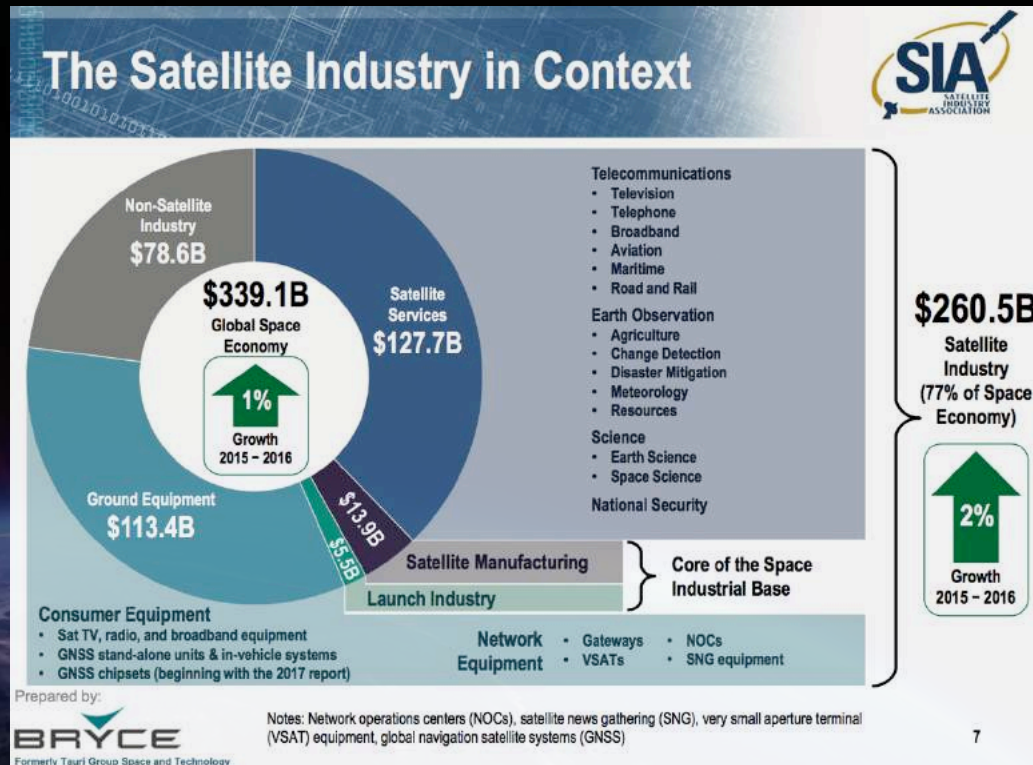
To develop and launch **low-cost** launch vehicles for the fast-growing and underserved **small satellite** industry.

WHY

SPACE IS BIG BUSINESS

US\$345B

None of which would
be possible without
launch.



...AND IT'S GROWING

US\$345B
> \$1 TRILLION

"Space launches now cost
11X less than 5 years ago
and satellites can cost
100X less..."

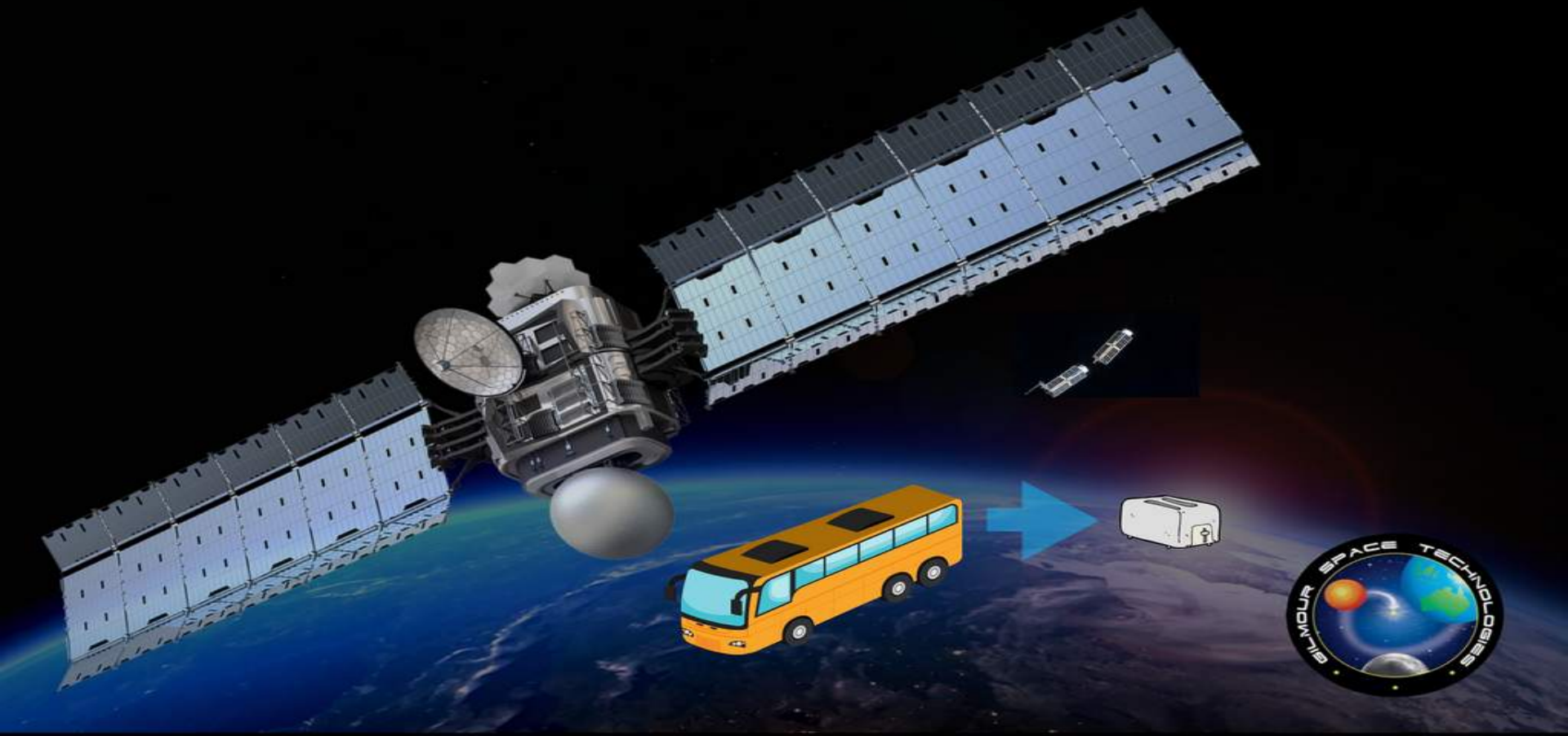
- GOLDMAN SACHS, DEC 2015

SPACE 2.0 | NEW SPACE



WHY

SPACE 2.0 - THE FINAL FRONTIER



DEMAND > SUPPLY FOR LAUNCH

40



\$3B



6200



BIG PROBLEM: LAUNCH COST & ACCESS

WHY

THE PROBLEM

COST-TO-LAUNCH REMAINS PROHIBITIVE

40 dollars in USD



HEAVY \$60-100 Mio
Payloads >1000 kg

MEDIUM \$20-37 Mio
Payloads 500 - 1000 kg

SMALL \$15-40 Mio
Payloads <500 kg

CHALLENGES OF BEING SMALL

Main players	Cost / Mass, kg
Pegasus (Orbital ATK)	\$40 Mio / 450 kg
PSLV (ISRO)	\$15 Mio / 800 kg
*LauncherOne (Virgin Galactic)	*\$10 Mio / 300 kg
*Alpha (Firefly)	*\$8 Mio / 200 kg
*Electron (Rocket Lab)	*\$6.9 Mio / 165 kg
*Eris 1 (G Space Tech)	Mio / 380 kg

Access is limited with few launch providers

Secondary payload "ride-sharing" may be cheaper, but lacks certainty & flexibility – re orbital placement, final cost, launch schedule, needs of primary client

Integration services are still expensive. E.g. Spaceflight Industries charges \$1.75 million for 50 kg to LEO.

*It costs a lot to launch a rocket into space.
We believe we can do it cheaper & better.*

*New entrants. Expected launch 2017-2018. *G. LauncherOne 2017.

Adam Gilmour, CEO | adam@gilmour.spacecorp.co | www.gspacetechnology.com | Private & Confidential © Gilmour Space Technologies

Ridesharing?

HIGH COST

LIMITED ACCESS

WAIT TIMES CAN BE LONG

PRIMARY PAYLOAD IN CONTROL

ORBITAL PLACEMENT, LAUNCH SCHEDULE, FINAL COSTS, OTHERS

OTHERS

RIDESHARE INTEGRATION COSTS, BUSINESS RISK

LOW COST ACCESS

HOW

SOLUTION: SMALL SAT LAUNCH PROVIDERS



Rocket Lab

Target Start Dates:

2018



Virgin Orbit

2019



Gilmour Space

2018, 2020



Vector

2018, 2019

RESEARCH PAPER:

"Absent a compelling strategic rationale, countries should be wary of undertaking a program to field an indigenous launch capability."

- Global Space Strategies and Best Practices, Bryce Space and Technology, LLC

RESEARCH PAPER:

1.

"The commercial market is already crowded and prone to demand swings."

LOOKING BACK...

SPACE 2.0 | NEW SPACE



LOOKING FORWARD...

RESEARCH PAPER:

NOT OURS...

~\$100+ MILLION

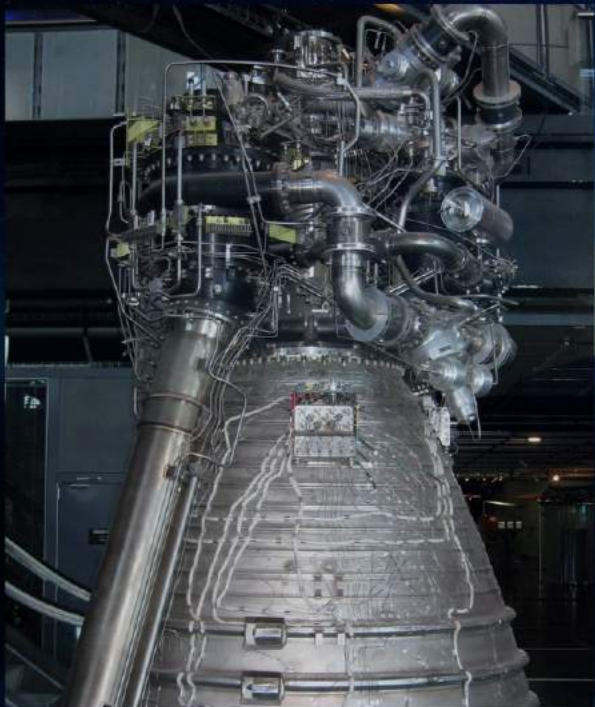
#2.

"Launcher development programs can be very challenging and expensive."



OUR DIFFERENCE:

LIQUID



HYBRID



LOW COST ACCESS

HOW

WE DESIGN FOR COST:



Rocket Lab

Target Start Dates: **2018**

US\$ 32K per Kg

150 Kg to 500 Km SSO
225 Kg to LEO



Virgin Orbit

2019

\$ 40K per Kg

300 Kg to 500 Km SSO



Gilmour Space

2018, 2020/21

\$ 21K per Kg

Suborbital launches (2018)
40 Kg to LEO (2020)
380 Kg to LEO (2021)



Vector

2018, 2019

\$ 22K per Kg

66 Kg to LEO (2018)
160 Kg to LEO (2019)

OUR PROGRESS:

2016



Developed proprietary 3D printed fuel.

Jun 2016



Successful launch of test rocket, demonstrating our technology.

Jun 2017



A\$5 mio Series-A funding.

Government grants in Australia & Singapore.



>15 engine tests (10 since July).

Dec 2017



Getting ready for the big test in Dec.



2018



SOUNDING ROCKETS

EST. PRICE	\$9,000 / KG
MAX PAYLOAD	160 KG
ALTITUDE	Up to 180 KM
DIAMETER	Up to 68 cm





SMALL SATS TO LEO

ORBITAL LAUNCHES

EST. PRICE	\$21-38K / KG
MAX PAYLOAD	380 KG
ALTITUDE	LEO (350 KM)
DIAMETER	Up to 160 cm



RESEARCH PAPER:

*"Launch vehicle design, manufacture and test...
Not an obvious area of potential."*

- Australian Space Industry Capability - A Review, ACIL Allen Consulting

DEMAND > SUPPLY FOR LAUNCH

40



\$3B



6200



FAMOUS LAST WORDS



"It's one more entrant into an already very busy space with lots of choice for consumers..."

But in terms of a sea-change for BlackBerry, I would think that's overstating it."

- RIM's co-CEO Jim Balsillie on Apple's launch in 2007 (Blackberry).

"\$500? Fully subsidized? With a plan? That is the most expensive phone in the world. And it doesn't appeal to business customers because it doesn't have a keyboard, which makes it not a very good email machine." - Microsoft CEO, Steve Ballmer

FAMOUS LAST WORDS



“Amazon.com is a very interesting retail concept, but wait till you see what Wal-Mart is gearing up to do.”

“IBM is already generating more revenue, and certainly more profit, than all of the top Internet companies combined.” – IBM chairman, Louis Gerstner Jr.

“Neither RedBox nor Netflix are even on the radar screen in terms of competition.” – Blockbuster CEO, Jim Keyes in 2008

“It’s a little bit like, is the Albanian army going to take over the world? I don’t think so.” – Time Warner CEO, Jeffrey Newkes in

2010



FAMOUS LAST WORDS

The Google logo, featuring the word "Google" in its signature multi-colored font (blue, red, yellow, blue, green, red).

"Google's not a real company. It's a house of cards."

- Microsoft CEO, Steve Ballmer

The SpaceX logo, featuring the word "SPACEX" in blue capital letters with a stylized grey swoosh, and the tagline "Space Exploration Technologies" in smaller blue text below it.

"NASA must have a safe and reliable way of getting astronauts into orbit if it is to have a future. Right now, NASA's traditional suppliers are the only companies who can credibly claim to meet that need."

- Loren Thompson, Forbes contributor in 2011 article

PAST VS. PRESENT VS. FUTURE



ENABLING NEW
SPACE

COMPETITIVE:
LOW COST
ACCESS



HIGH-TECH
JOBS

NATIONAL
INTEREST &
SECURITY



ADDRESSING A
REAL NEED IN
MARKET



PRIVATE &
PUBLIC
PARTNERSHIPS

LAUNCH PAD IN
RURAL OZ



UP & DOWNSTREAM
INDUSTRIES

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