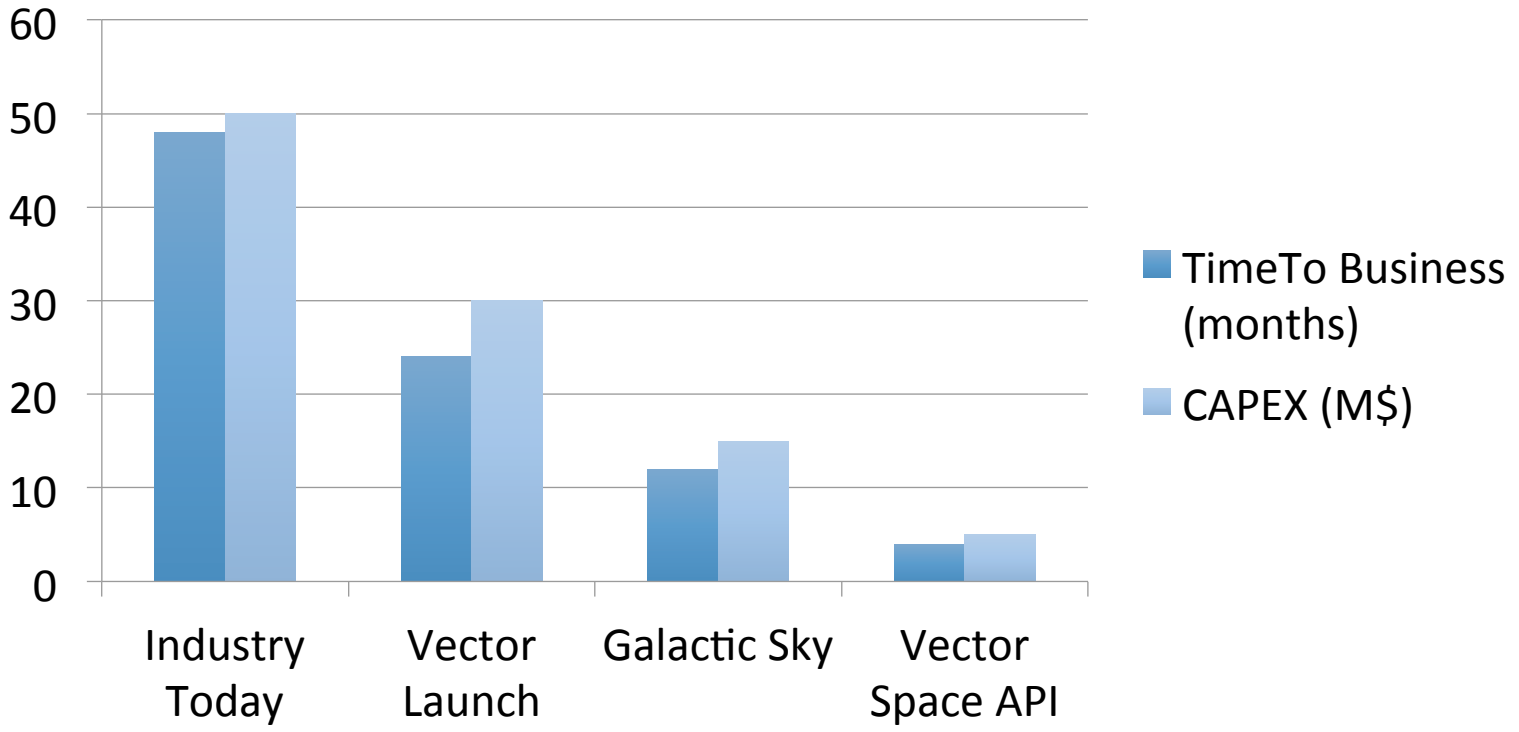
# Business Model: Rapid Deployment

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# Vector Owns End-To-End System

- Product 1: Vector Launch Vehicles
  - Vector-R  50 kg to orbit $1.5M - $2.5M
  - Vector-H 100 kg at $3.0M - $4.0M
- Product 2: Galactic Sky Satellites
  - Software Defined Satellite Toolkit
  - Virtual Machine based Galactic OS / Tools
  - DynoSat Satellite Design Tool
  - Vector Built Micro Satellites with Galactic Sky
- Product 3: Galactic Sky Space API
  - Satellite As Software App
  - Users Develop Software App
  - Vector core applications running on constellation

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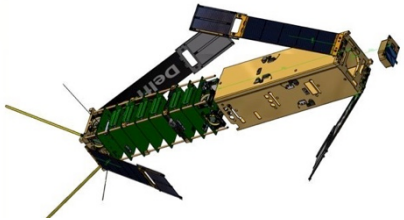
Galactic Sky
Software Defined Satellites



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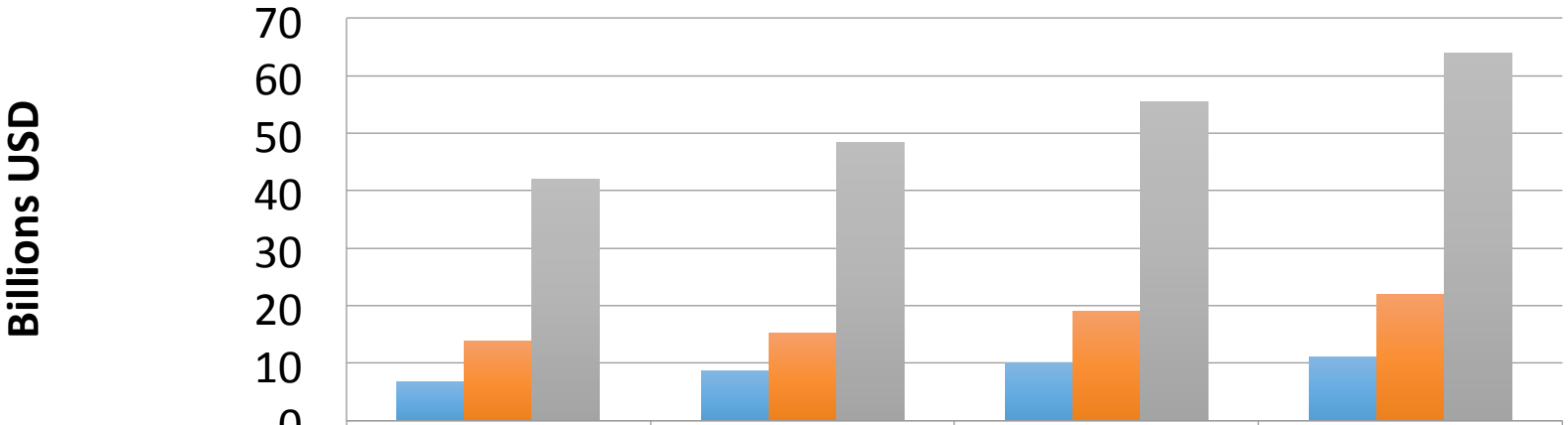
# Vector Total Addressable Markets




| | 2016 | 2018 | 2020 | 2022 |
|---|---|---|---|---|
| Launch | 6.8 | 8.6 | 10.1 | 11 |
| Satellites | 13.9 | 15.3 | 19.1 | 22 |
| Data Analytics | 42.0 | 48.3 | 55.5 | 63.9 |

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# Experienced Management

**Jim Cantrell**
**CEO**
SpaceX, Skybox, StratSpace, Moon Express, JPL, CNES

**John Garvey**
**CTO**
McDonnell Douglas, Sea Launch, Garvey Spacecraft Corp., DCX

**Ken Sunshine**
**CFO**
Orbital Sciences, Virgin Galactic, Moon Express, MDA

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# Results To Date

- ✓ $2.5M In 2016 Contracts & Revenue
- ✓ $19.5M in Proposals In Evaluation
- ✓ $81.7M In Signed Backlog (Launch)
- ✓ Additional $130M Backlog in Negotiation
- ✓ 11 Patents on Propulsion, Sats & Software
- ✓ FIRST VECTOR-R FLIGHT SET FOR 2017

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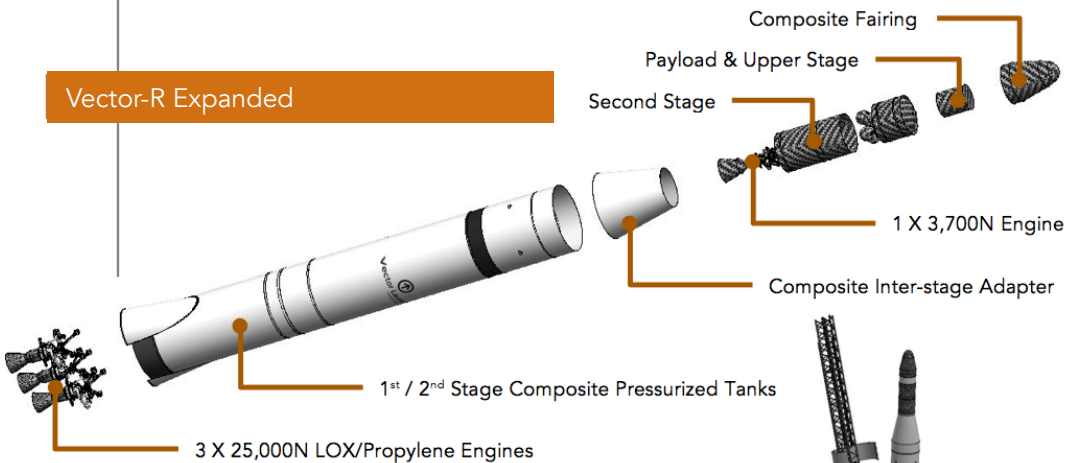
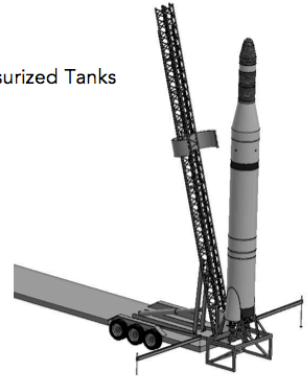
## Vector-R Expanded




Transport To Launch Site



Transportable Launch Erector

## Vehicle Summary

- Overall length 12 meters
- First stage diameter 1.2 meters
- Gross Lift Off Weight (GLOW): 5000 kg
- Pressurized fuel feed systems
- No explosive ordinance
- Autonomous flight termination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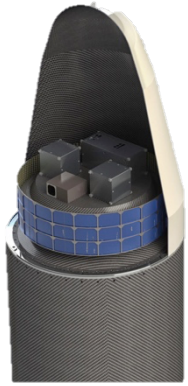
# Vector Launch Family

| | Vector-R | Vector-H |
|---|---|---|
| Mass to Orbit[1] | 50 kg | 100 kg |
| Height | 12 meters | 16 meters |
| Cost[2] | $1.5M | $3.0M |
| Cost w/ 3rd stage | $2.0M | $3.5M |
| Flight Rate / Year | 100 | 25 |
| Reusable 1st stage | Yes | Yes |
| Availability | 2018 | 2019 |
| Competitor | None | Electron |

Vector-R Vector-H



- Optional Electric 3rd Stage for extended altitude
- Makes small launcher equivalent of much larger launcher

[1]To a 250 km 28 degree orbit
[2]Base price. On demand launch +$1M

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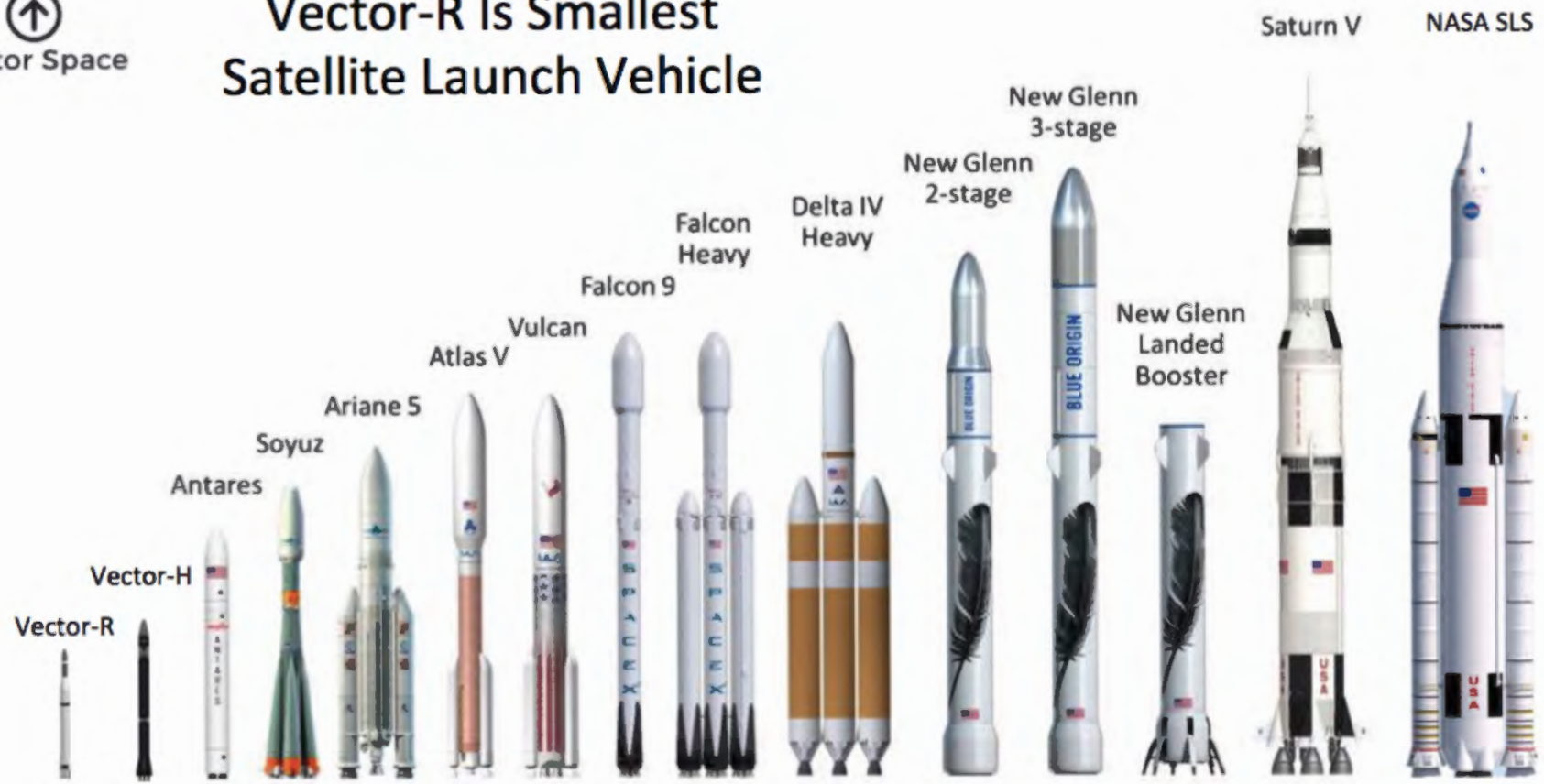
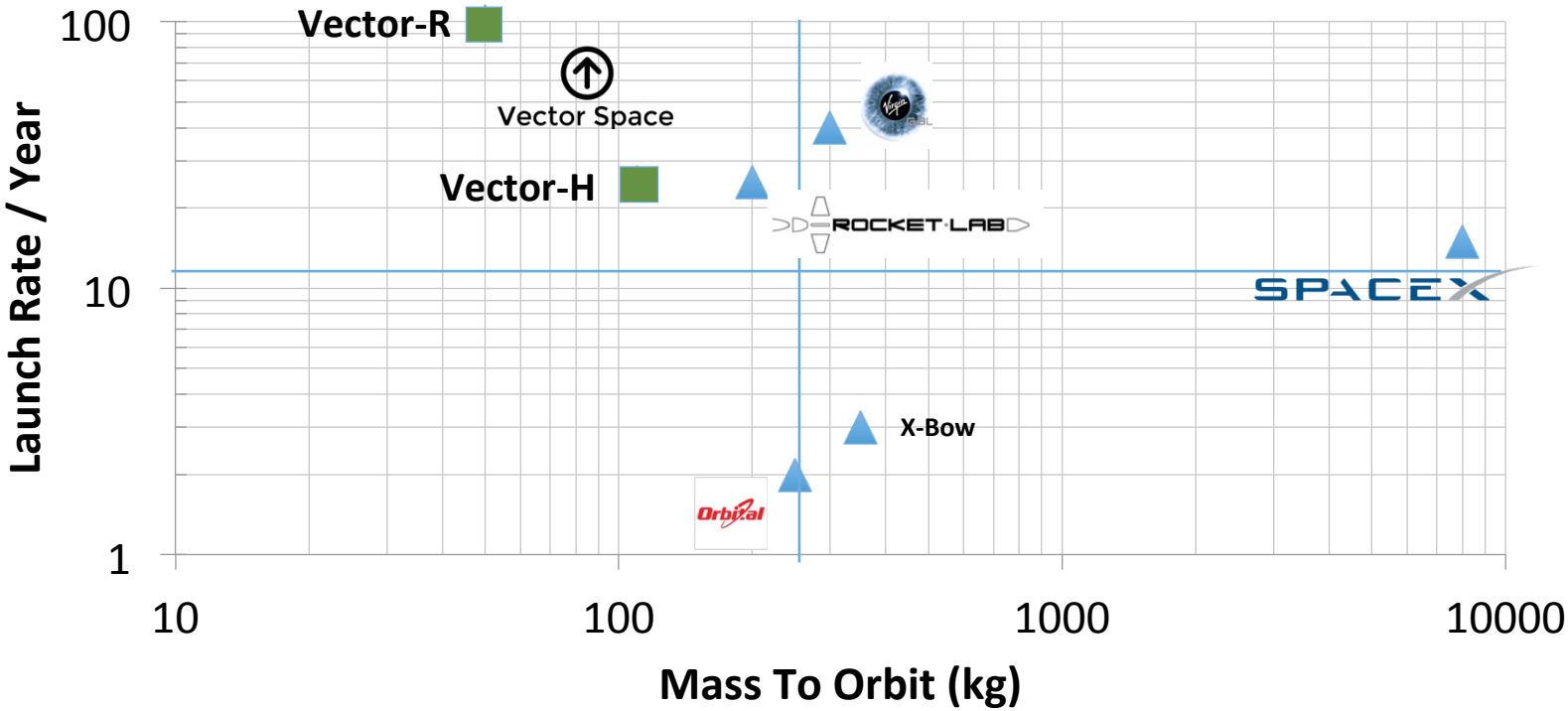
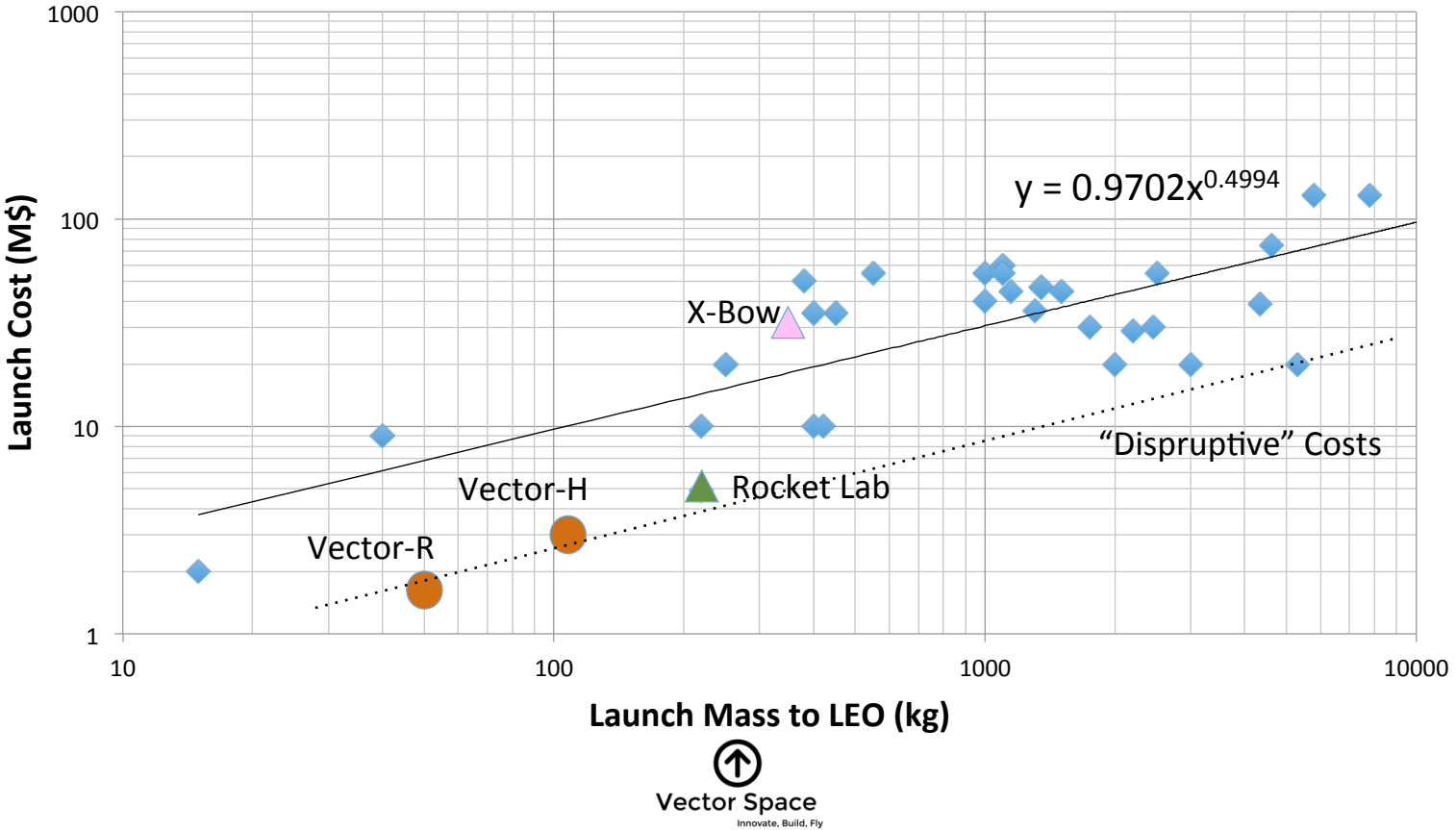
# Vector-R Is Smallest Satellite Launch Vehicle



# Vector Unique Positioning



# Vector Lowest Priced Single Launch



## VECTOR-R

50 kg to LEO
Weekly launch
1.5-2.5 M$
Lead: 3 mo.
Alaska, CCAFS

## ELECTRON

150 kg to LEO
Monthly launch
5 M$
Lead: 24 mo.
NZ Launch


## VECTOR-H

100 kg to LEO
25 launches/yr
3 M$
Lead: 3 mo.
Alaska, CCAFS

## FALCON 9X

8000 kg to LEO
10 Launches/yr
75 M$
Lead: 36 mo.
US launch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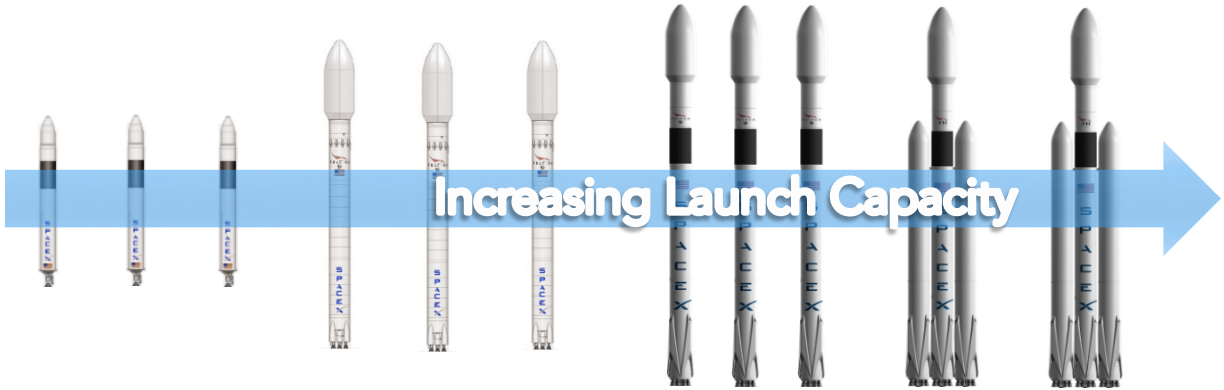
# Unique Monetization Strategy

Traditional




Primary Challenges

- High CAPEX
- Large Scales
- High Costs

Vector


Primary Challenges

- Range Flow
- Manufacturing

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# First Launch – First To Market

150 kg
5 M$


Rocket Lab

50 kg
1.5 M$

Vector-R

200 kg
10-15 M$

Launcher One

100 kg
3 M$

Vector-H

25 kg
2.5M$

Arion 2

2017 | 2018 | 2019

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# Financial

- ✓ $2.5M Seed Rounds 2016
- ✓ $2.6M In New Contracts and 2016 Revenue
- ✓ Launch Manifest
  - ✓ 41 Firm Launches Signed
  - ✓ $81.7M In Backlog (Launch/Platform)
  - ✓ Additional $130M backlog in Negotiation
- ✓ Acquired Garvey Spacecraft Corp. (15 years Prior R&D worth $20M)
- ✓ A Round close anticipated Q4 2016

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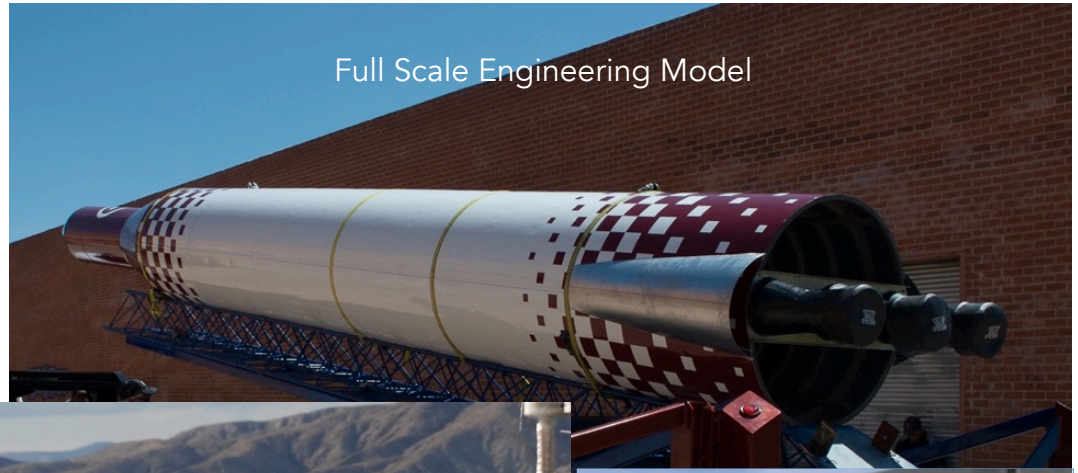
# Technical Progress




1st Stage 5000 lbf. Engine Test

2nd Stage Engine (500 lbf.) Test


P-20 Flight Test


Mobile Transporter Erector Launcher

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# Facilities/Site

- Discussions underway with launch sites / Regulatory authorities
  - Alaska launch range coming under contract
  - NASA offering several launch pads
  - FAA regulatory process underway
  - Barge ops pathfinder September 2016
- Pima County (Tucson) In negotiation to build Vector factory in Aero Park near Raytheon
  - Bonds/Capitalization/Permitting
  - Long term lease
- Facility build out in Huntington Beach begins once A round closed


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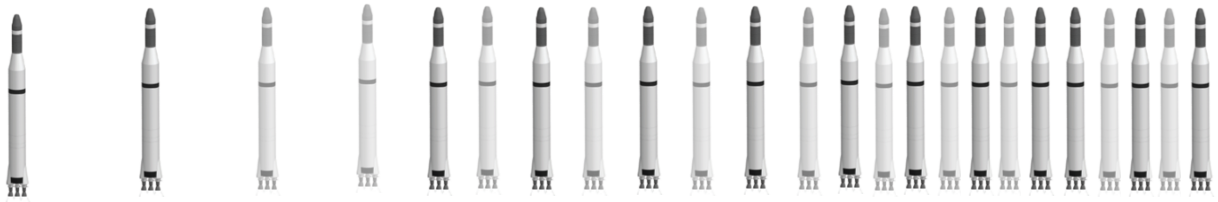
# Vector-R Flight Manifest

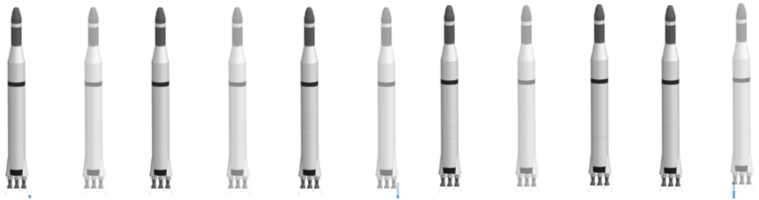
## Pacific Spaceport Complex Alaska (PSCA)

First Vector R Flight 2017



Open

## Cape Canaveral Air Force Station (CCAFS)



Sold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# Press To Date

| Activity | Results | |
|---|---|---|
| Press Releases / Announcements | • SpaceX Founding Team Launches Vector Space Systems to Redefine Space Commerce<br>• Vector Space Systems Completes Successful Test of Second Stage Engine in Advance of First Sub-Orbital Test Flight<br>• Vector Space Completes 3D Printed Rocket Engine Test in Mojave<br>• Vector Space Systems Completes Acquisition of Garvey Spacecraft Corporation to Enhance Micro Satellite Launch Capabilities | |
| Press Briefings | • Motley Fool – Richard Smith<br>• Forbes – Alex Knapp<br>• Quartz – Tim Fernholz<br>• Washington Post – Christian Davenport<br>• New Space Global – David Bullock<br>• Aviation Week – Graham Warwick<br>• Business Insider – Ali Sundermier<br>• NY Observer – Robin Seemangal | • Vice/Motherboard – Jason Koebler<br>• ABC News – Alyssa Newcomb<br>• CNET – Luke Lancaster<br>• Entrepreneur – Marty Jerome<br>• BBC Live – Andrew Castle<br>• Quartz – Michael Coren<br>• TechCrunch – Devin Coldewey<br>• Ars Technica – Eric Berger<br>• CNN – Jackie Wattles |
| Coverage Secured | • Motley Fool<br>• Popular Science<br>• Aviation Week<br>• Business Insider<br>• TechCrunch | • Fast Company<br>• CNET<br>• BBC Live<br>• Ars Technica<br>• Business Insider |

# Action Plan

## Seed Funding
- Reduce key risks
- Engine testing
- Thruster chambers
- Vehicle design
- Range safety initiative
- Pathfinder launch
- LOI's

## Design/Manufacturing
- Team building
- Engine completion
- Flight software/Avionics
- Vehicle prototypes
- Regulatory approvals
- Manufacturing Facilities
- Sales activities

## Initial Operations
- Low rate production
- In house tank fab.
- Test launches Alaska
- Florida launch facility
- Enterprise software
- Recovery systems
- Sales activities

## Operational Launch
- Full rate production of 50-100 per year
- Vector 2.0 SLV
- Electric Upper Stages
- Extended vertical integration in sats


## *Seed Rounds 2M$ (Q2/316)*
- 1st /2nd stage engine test
- Pathfinder launch EF-1,2
- S1 Propulsion Qual.
- Vehicle design complete
- Vehicle prototype

## *Series A 10M$ (Q416)*
- S2 Propulsion Qual.
- S2/S1 Engine Prod.
- Tucson Factory
- Vector-R EFT-1 Flight

## *Series B 25M$ (Q4 2017)*
- Limited production
- Vector-R EFT-2,3,4
- Vector-R Operational
- Vector-R OF-1,2,3

## *Self Funding (2019)*
- Vector-H EFT-1
- 12 / year 2019
- 48 / year 2020
- Satellite Platforms
- Space API

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# Thank You !