



# Leading Innovation in the New Space Economy

Howard L. Lance
President and Chief Executive Officer

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This presentation contains forward-looking statements and information, which reflect the current view of Maxar Technologies with respect to future events, financial performance and operational capabilities. The forward-looking statements in this presentation include statements as to managements' expectations with respect to: the benefits of the transaction and strategic and integration opportunities; the company's plans, objectives, expectations and intentions; expectations for sales growth, synergies, earnings and performance; shareholder value; and other statements that are not historical facts.

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### **Executive Summary**

- Vertically integrated business model with strong technical heritage
- Four commercial space brands with leading positions in growth markets
- Trusted partner for mission-critical complex challenges in the space domain
- Diversified global commercial and government customer base
- Favorable underlying growth trends and market tailwinds outside GEO comsat line of business
- Solid execution of synergy plans underway
- Robust business development pipeline of strategic and actionable opportunities
- Committed to deleveraging as primary use of free cash flow
- Dividend policy unchanged
- Security Control Agreement and Facility Clearance in place for USG classified space programs
- Domestication to U.S. planned by 2019







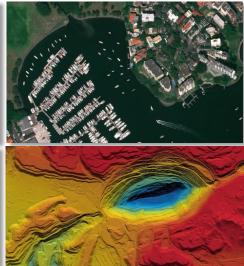
Four companies at the intersection of what's new and what's possible. We do what no other single company can by delivering integrated space solutions to solve our customers most complex challenges

## Four leading commercial space brands



- Communications satellites
- Earth imaging satellites
- Radar satellites and imagery
- Science mission spacecraft
- Satellite ground systems
- Satellite antennas, electronic systems and payloads
- Space robotics
- C4ISR and defense systems
- Enterprise-class information solutions







- High resolution electro-optical imagery and geospatial products for defense, intelligence and commercial markets including mapping, location based services, energy, agriculture and climate analysis
- Leading cloud-based platform with image library >100 petabytes



 Geospatial big data analytics and services for defense, intelligence and commercial markets





### Benefits of the merger

# **Expanded Capabilities**

- Created leading commercial provider of integrated systems and solutions
- Combined radar and high-resolution optical imaging capabilities
- Increased breadth and depth of analytics and value-added services

# Greater Scale and Market Access

- Increased scale to win larger programs and serve complex missions
- Enhanced access to U.S. and International Government customers
- Combined best-in-class technology talent to accelerate innovation

# Diversified Portfolio

- Diversified portfolio with predictable data and services revenue
- Expanded addressable markets in attractive adjacent segments

## Strong Financials

- Strong earnings and operating cash flows profile
- Significant backlog of multi-year contracts and programs

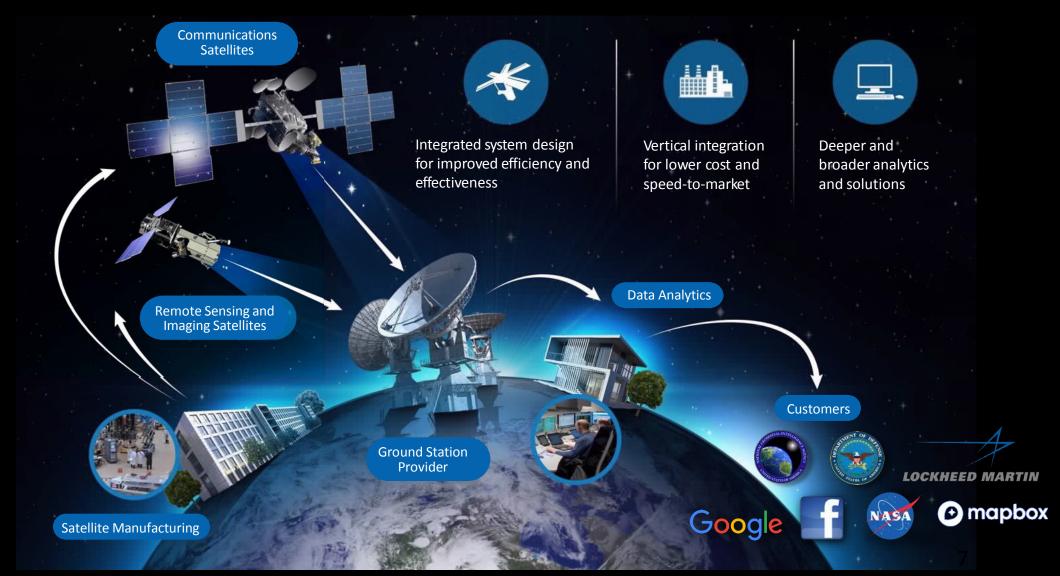
# **Attractive Synergies**

- Revenue synergies through complementary capabilities and channels
- Duplicate public company costs, leverage scale economics
- Leverages SSL manufacturing for future DigitalGlobe satellites





## Our competitive advantage— Integrated systems expertise

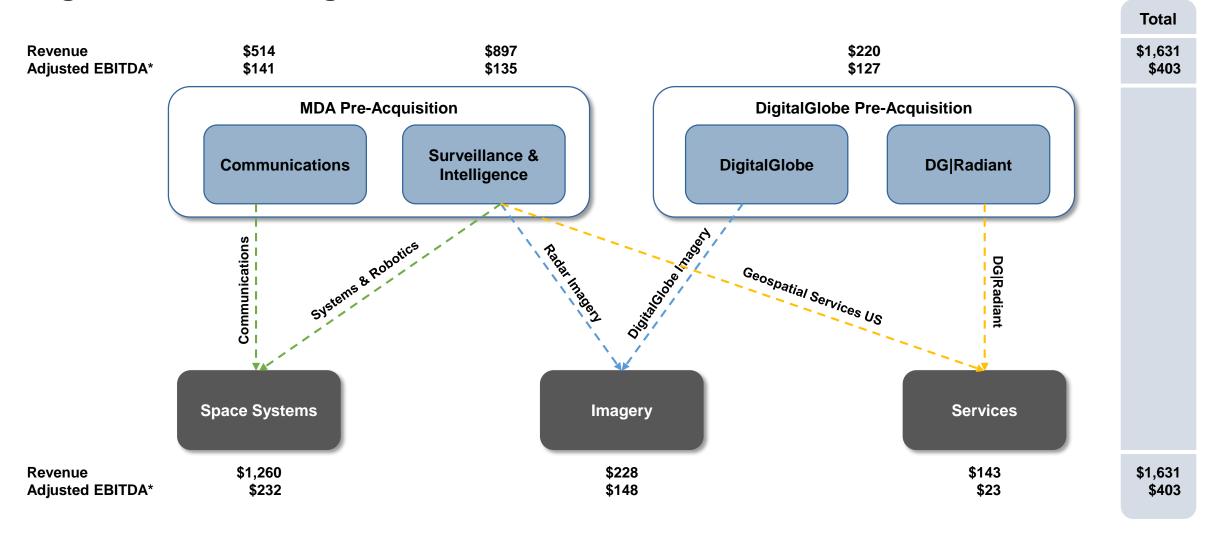






### **Segmentation change**

Reported 2017 financial results (USD in millions)

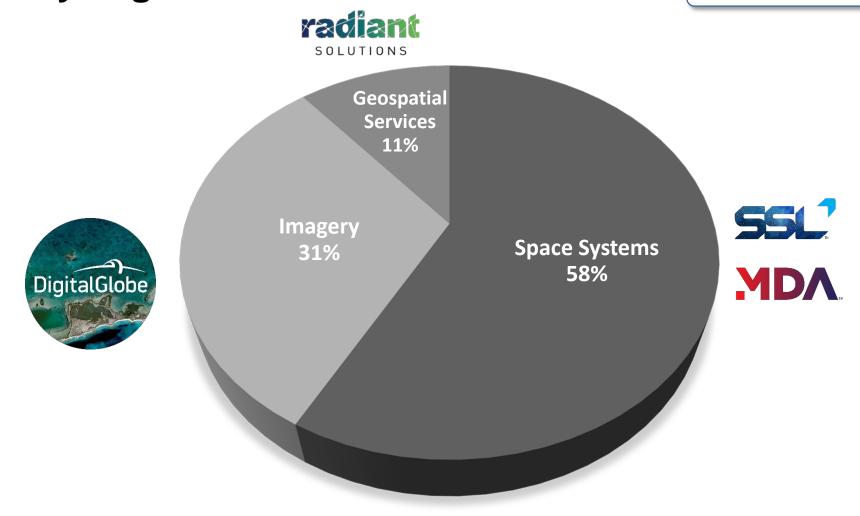


<sup>\*</sup>Adjusted EBITDA amounts exclude allocated corporate expenses of \$(24M)



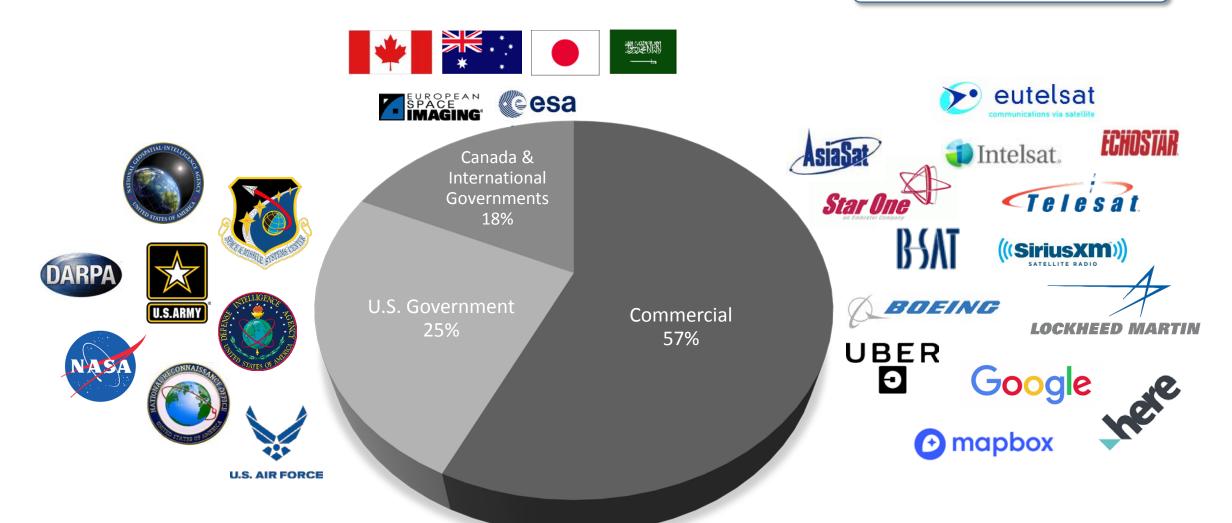


2017 Pro Forma USD \$2.3B



#### **Diversified customer mix**

2017 Pro Forma USD \$2.3B







## **Competitive landscape**

Company	GEO Large	GEO Small	Earth Obs Sats	EO Ground Systems	Space Robotics	Imagery High Res	Imagery Low Res	Geospatial Services
Maxar	#1			#1	#1	#1		
Airbus	0			0				
Boeing	0							
Lockheed	0							
Orbital ATK		0	0					
Thales								
Ball		0	0					0
Millennium								
Planet							0	
Urthecast								
Harris								0
BAE								
Leidos								0





## **Experienced senior leadership team**



Howard Lance
President and Chief Executive Officer
MDA, Blackstone, Harris, Emerson



Anil Wirasekara
Chief Financial Officer (Interim)
MDA, Ernst & Young



Tim Hascall
Chief Operations Officer
DigitalGlobe, TriZetto, Accenture



**Dr. Walter Scott Chief Technology Officer**DigitalGlobe Founder



Dario Zamarian Group President SSL MDA, Cisco, Dell



Mike Greenley Group President MDA MDA, L-3, GD, CAE



Dan Jablonsky
President DigitalGlobe
DigitalGlobe, Law Firms, US Navy



Tony Frazier President Radiant Solutions DigitalGlobe, GeoEye, Cisco



Stephanie Georges Chief Marketing Officer DigitalGlobe, CenturyLink, Morgan Stanley



Bruce Stephenson Chief Strategy Officer MDA, Bain, US Air Force



Michelle Kley General Counsel and Secretary MDA, Law Firms



Andrea Bortner Chief Human Resources Officer MDA, Catalina, Harris





## **Primary locations**





Palo Alto, CA













Tampa, FL radiant





# Distributed operating model benefits from both focus and scale economies

#### **Operating Units**

- Own the Customer
- Own the Strategy
- Own the P&L
- Empowered
- Accountable
- Collaborative

# **Enterprise-Wide Support Services**

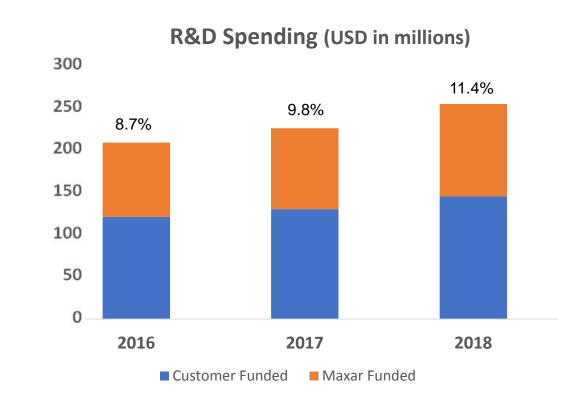
 Best-in-class processes and lowest cost

# **Corporate** MDA DigitalGlobe SOLUTIONS Information Systems Procurement Marketing and Communications Finance and Accounting Human Resources



## Leading innovation in the new space economy

- Jupiter 3 UHTS satellite advances for GEO comsat market featuring higher capacity and lower cost/Gbps
- Digital payloads that transform communications satellites into flexible broadband distribution systems
- WorldView Legion E/O satellites with increased capacity, resolution and revisit capabilities
- Integrated optical and radar imagery for 24/7 all-weather land and maritime surveillance
- On-orbit spacecraft servicing offers inspection, repair, relocation, assembly and refueling
- Machine learning algorithms for rapid geospatial imagery data analysis and refresh
- 3D elevation imagery allowing telecom providers to optimize 5g network performance







## Key elements of our strategy

#### **Continue growth in Imagery and Services**

- Extend market lead with WorldView Legion and Scout (KSA JV) constellations
- New products for International government and commercial customers
- Leveraging GBDX cloud-based imagery platform and advanced AI capabilities

#### **Return to growth in Space Systems**

- GEO Comsat market at or near the bottom and now marginalized (<10% of EBITDA)</li>
- U.S. Government revenue growing and multiple opportunities with recent FCL in place
- SmallSats for commercial and government LEO communications and E/O applications
- Attractive Canada space and defense pipeline

#### **Deliver revenue and cost synergies**

- International government and commercial satellite/imagery combinations
- Integrated optical and radar imagery products and cross-sell
- Scale cost reductions in procurement, real estate, public company expenses
- Enterprise shared services for marketing, IT, accounting, human resources

## Improve free cash flows with priority to pay down debt and reduce leverage

Increased near-term capex for WorldView Legion construction





## Strong tailwinds across majority of the portfolio

#### Spending growth across U.S., Canada and International defense and space markets

- Concerns expand beyond global terrorism to include renewed nation-state threats from China, Iran, North Korea and Russia
- □ Need for increased persistence and resiliency of remote-sensing space assets
- Strong desire to partner with commercial providers to accelerate innovation, shorten production cycles and lower costs

#### Commercial imagery and geospatial services markets continues to grow

□ Increasing demand from defense and intelligence, location-based services, autonomous vehicles, telecom, agriculture and climate applications enabled by machine learning advances

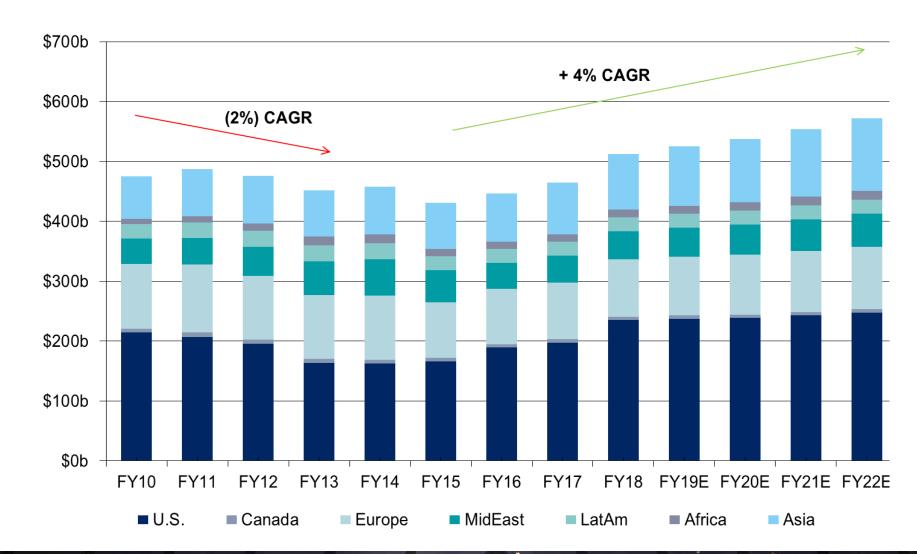
#### GEO and RCM headwinds are waning

- Impact of lower GEO market orders in 2015-2017 has run its course through the satellite build cycle with revenue now at or near the bottom
- □ RCM program launch expected in 2018





## Positive defense spending trends in U.S. and Canada





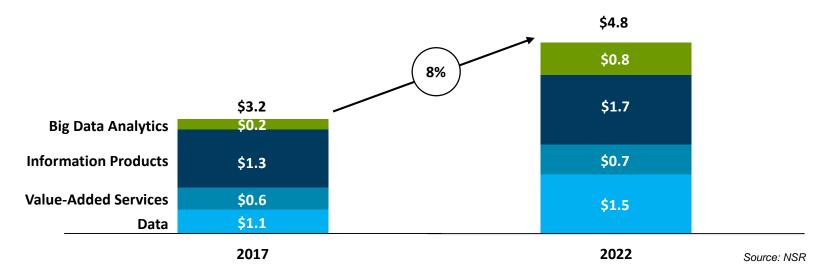
Source: SIPRI, USG DoD, Citi



## Expanding need for information / analytic based solutions

#### Growth rate of 8%+ driven by 25%+ growth in Big Data Analytics

**Satellite-based Earth Observation Industry Segments and Revenues** (\$ in billions)



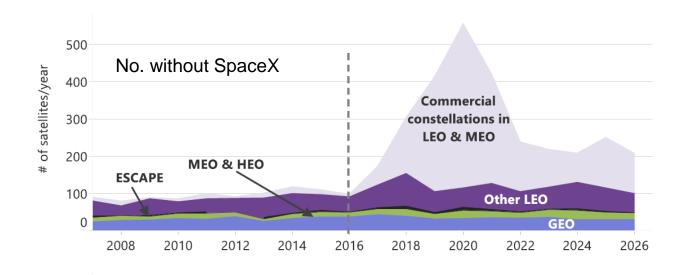
- Data imagery and related products
- Value Added Services processing and applications that transform raw data into information
- Information Products processing and applications-specific analysis from imagery
- Big Data Analytics analysis of multiple images and a wide variety of datasets in order to extract information not apparent in the base data



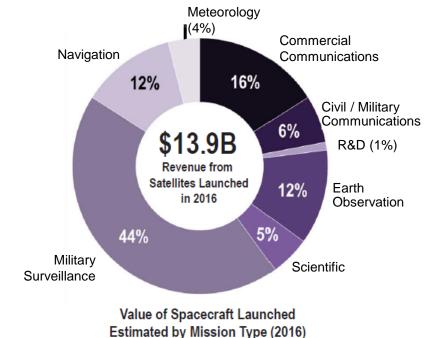


#### Future outlook for satellite markets

- GEO communications markets are at or near the bottom
- Future will focus on video replacement and hybrid video/data multi-band satellites
- Next-generation LEO and MEO communications constellations will focus on providing high-speed global internet access (OneWeb, Telesat, LeoSat)



Source: Euroconsult



Source: Satellite Industry Association

- SmallSat demand will be driven by expanded government and commercial remote-sensing segment
- Maxar well positioned to benefit from increased commercial focus





## Multiple large growth opportunities in our pipeline

#### **Space Systems**

- □ LEO communications satellites (~\$2B)
- □ USG satellites (~\$500M)
- Multiple international government and commercial satellite/imagery programs (~\$100M to \$170M each)
- □ Canadian ship program (\$1B to \$2B)
- □ Canadarm 3 for deep space gateway (~\$1B)
- □ RCM radar continuity program (~\$1B)
- □ Enhanced polar communications (~\$400M)
- □ Land information enterprise systems (~\$200M)

#### **Imagery**

- U.S. Government extension of Enhanced View SLA contract
- □ Growth of DAP installed base (5 to 7 new)
- □ Expansion of Secure Watch in IDI market

#### **Services**

- U.S. Government programs to support:
- □ Geospatial data production (~\$200M)
- Machine learning and data analytics (~\$200M)
- □ Cloud application development (~\$100M)
- □ Radar data analytics (~\$100M)

(\$USD) estimated total program award values





## Financial outlook

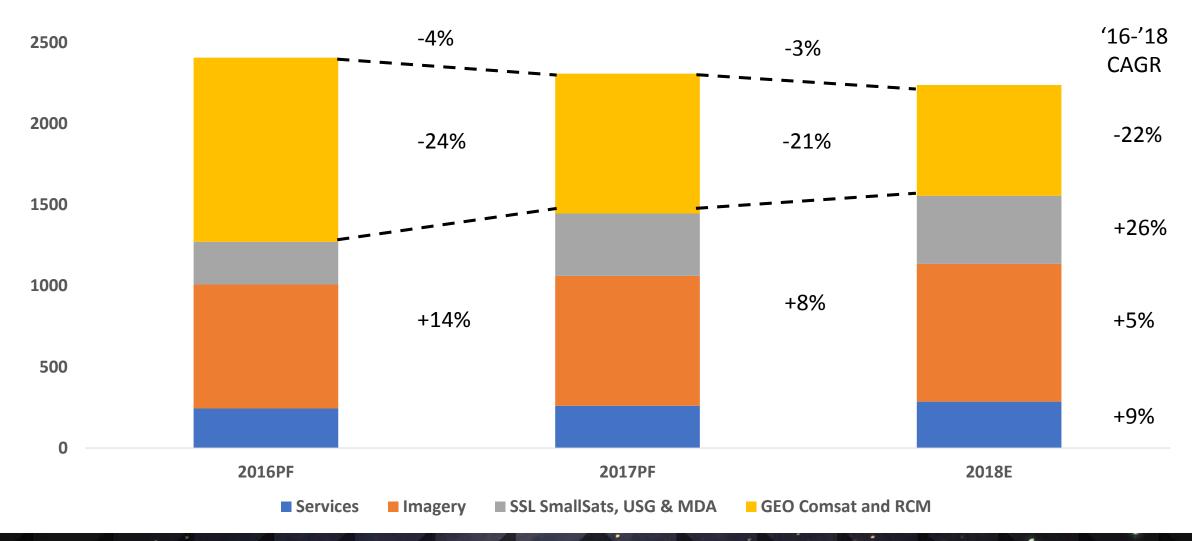
		2017PF	2018E	% Chg	
Imaging Revenue		\$ 802	\$ 850	6.0%	New products for Int'l defense and Comm'l
EBITDA		\$ 512	\$ 542	5.9%	
	Margin	63.8%	63.8%		Stable margins
Space Systems Revenue		\$ 1247	\$ 1103	-11.5%	GEO comsat market and RCM program
EBITDA		\$ 230	\$ 185	-19.6%	
	Margin	18.4%	16.8%		Lower volumes and '17 RCM reserve releases
Services Revenue		\$ 260	\$ 286	10.0%	USG demand and new prodcuts
EBITDA		\$ 32	\$ 34	6.3%	
	Margin	12.3%	11.9%		Stable margins
Corporate Expense		\$ (34)	\$ (33)		
Total Revenue		\$ 2308	\$ 2239	-3.0%	
Adjusted EBITDA		\$ 739	\$ 728	-1.5%	
	Margin	32.0%	32.5%		Stable margins
Adjusted EPS		\$4.87	\$4.60	-5.5%	





## Underlying revenue growth in the business is strong

Revenue (USD in millions)

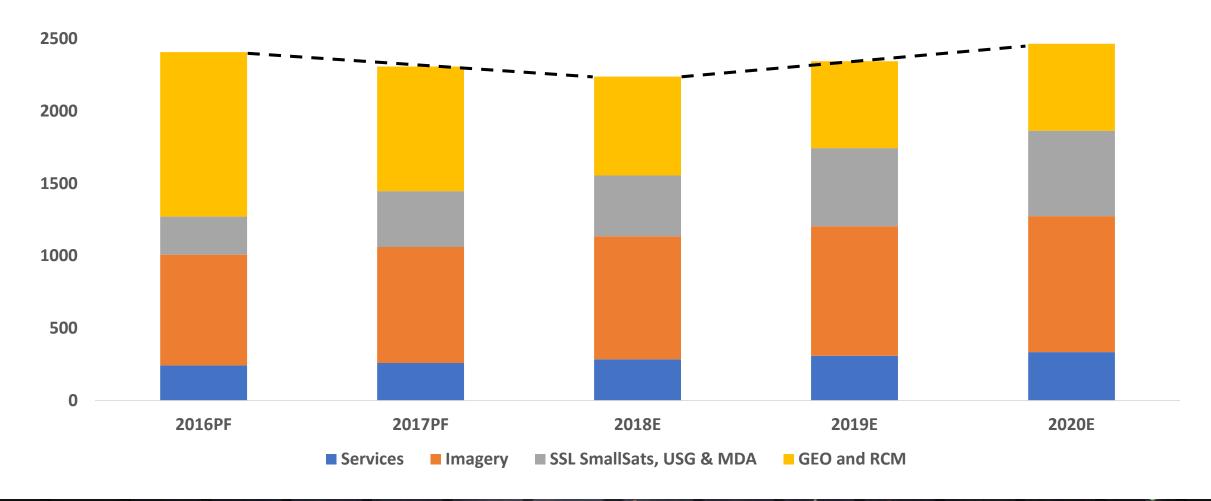






# Revenue growth expected beyond 2018 as GEO comsat revenue bottoms and RCM program ends

Revenue (USD in millions)

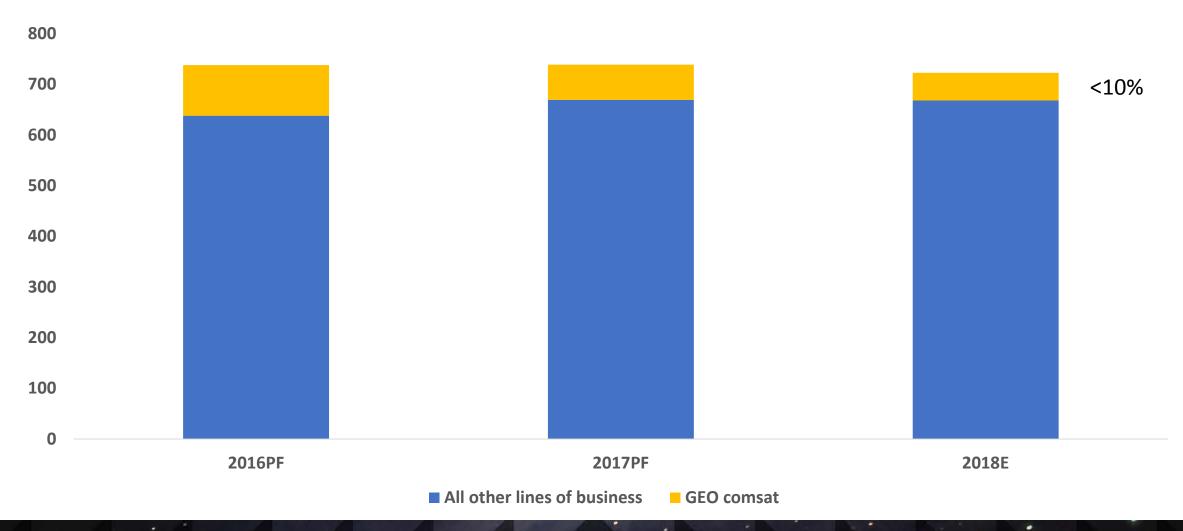






## GEO Comsat business contribution has been marginalized

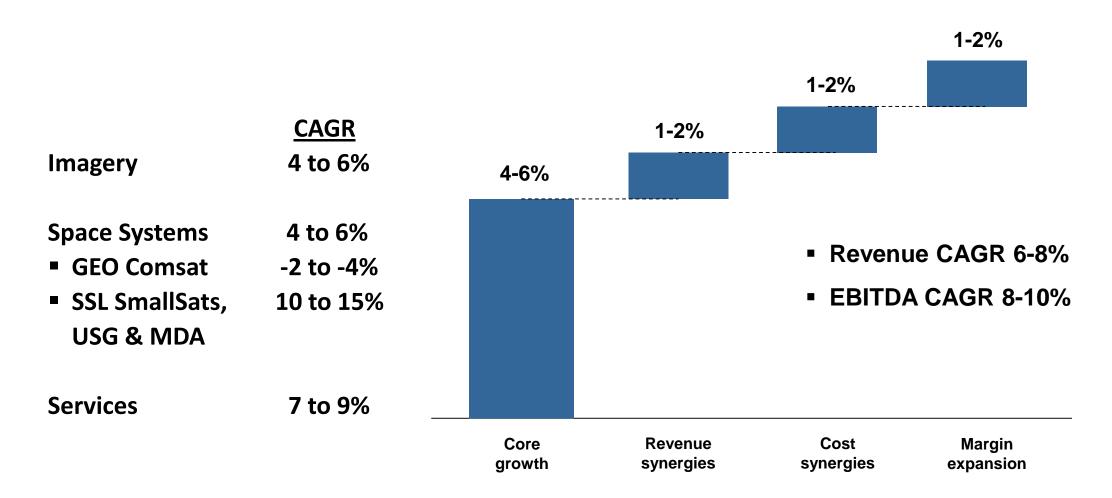
EBITDA (USD in millions)







## Targeting double-digit 5-year earnings growth profile











Anil Wirasekara

Executive Vice President & Interim Chief Financial Officer

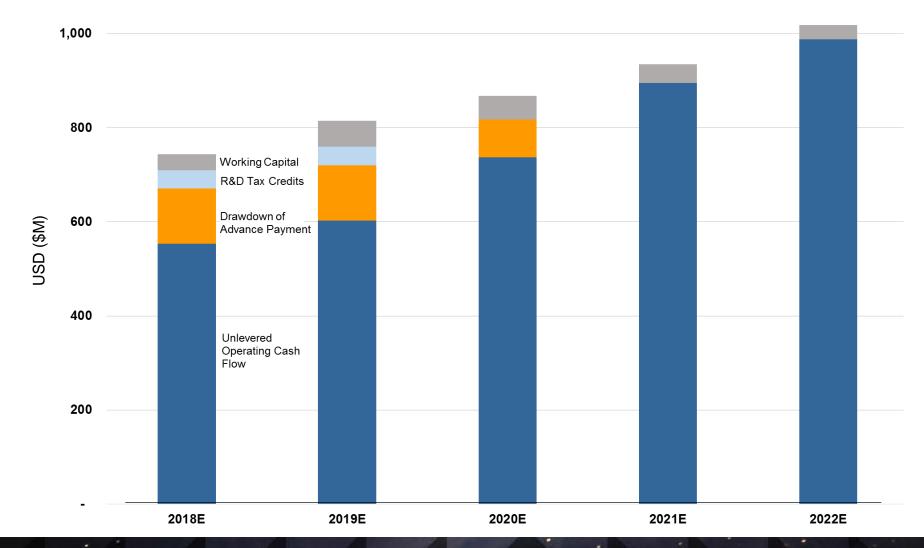
#### Financial overview and commitments

- Solid Q4 and year end 2017
- Stable outlook for 2018 despite continued headwinds from GEO and RCM
- Longer term outlook is very strong as we complete our major capital expenditure programs and execute on our U.S. space plan
- Cash flow improved quarter-over-quarter throughout 2017 with strong Q4
- We have generated positive EBITDA and cash flow from every business in 2017
- We are committed to ensuring that operating cash flows provide an appropriate dividend to our shareholders, while covering our debt servicing and capex requirements – every year
- We are committed to running our business so that our cash flows will also result in deleveraging, even in those years where we are required to make heavy capital expenditures related to our satellite programs
- We will continue to invest in infrastructure and R&D out of our internally generated cash flow to further strengthen our market leadership and deliver attractive long term returns





## Adjusted EBITDA to unlevered cash flow reconciliation







## **Key reconciling items**

#### **Customer Advance Payments**

- Customer advance payments have been a significant source of financing in the past,
   but have also been misunderstood in evaluating the performance of the Company
- Advance payments by the USG were crucial to our construction program in the past, enabling us to build the satellites, move into our current leadership position, and to generate significant cash returns
- Today, post acquisition, we have the legacy of having received these cash prepayments, which results in revenue streams greater than our cash inflows as deferred revenue on our balance sheet is burned down
- In the future, we will be paying for our capacity out of our own internal cash flows. The renewal of our USG contract will not likely include a significant prepayment element, and accordingly our cash flows will be more closely aligned with annual revenues. This will commence in about two years





### **Key reconciling items**

#### **R&D Tax Credits**

- Relates primarily to Canadian operations and Canadian tax benefits
- Included in EBITDA when earned (reduction of direct costs) but is effectively realized as a cash item when applied against taxes payable in current or future year

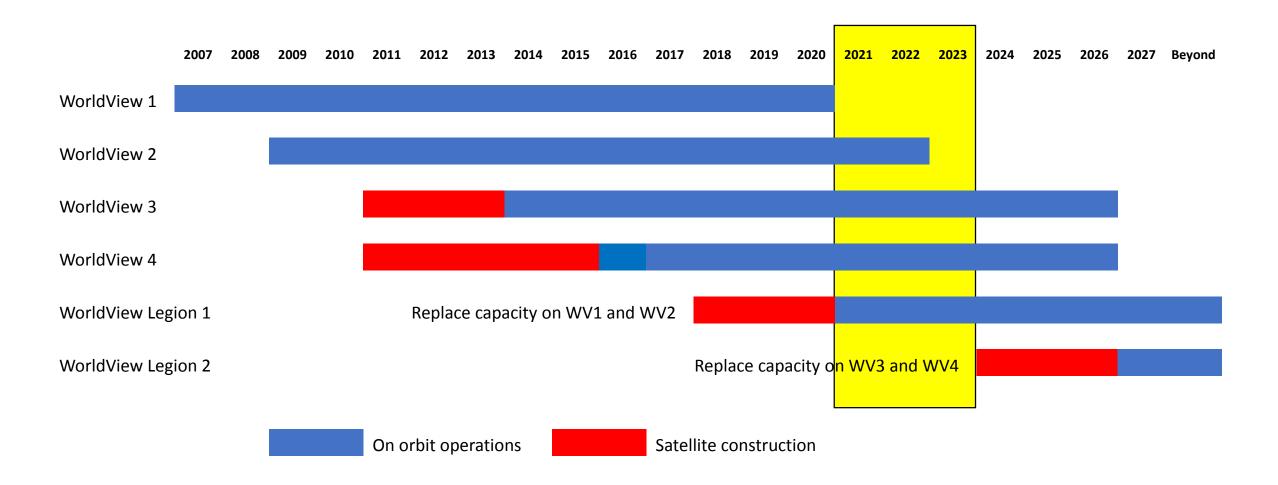
#### **Working Capital**

- Growth in our operating activity and the nature of our business (i.e. Construction contracts and Government contracts) requires us to invest in working capital each year
- A key priority across the company is to counterbalance the needs for working capital build-up as we grow our business with prudent cash management strategies, just in time inventory improvements, efficiency enhancement programs, revised supplier payment terms and more rigorous management of customer payment terms and vendor finance





## On-orbit satellites construction and operations timeline

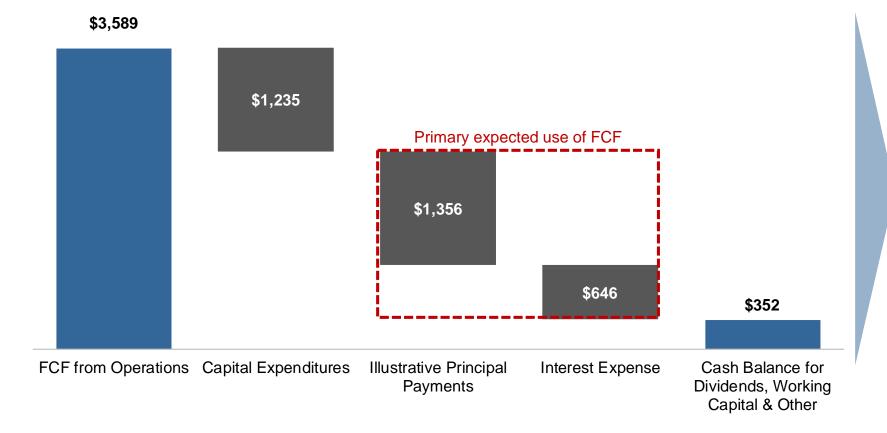






#### Cash Flow Outlook 2018 to 2022

**USD** in millions



#### **Key Takeaways**

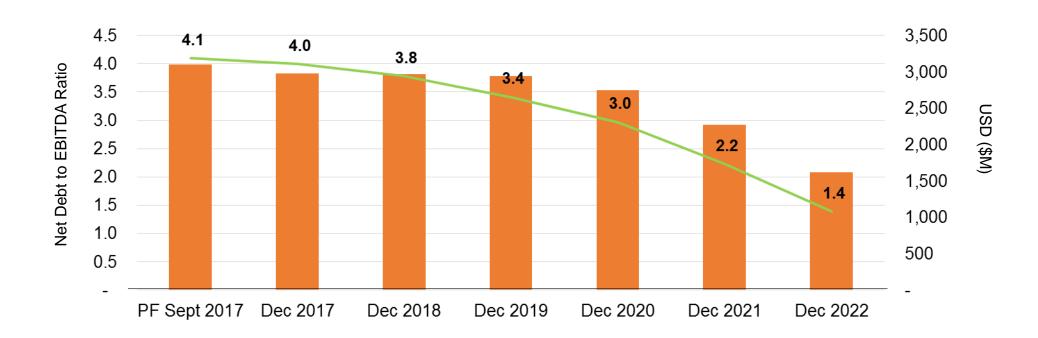
- Ample Free Cash Flow from existing operations to support all business operations and capital structure commitments
- Internally funded WorldView Legion constellation (expected completion by end of 2020)
- Deleveraging remains the primary objective as 100% of excess FCF is used to pay down debt and keep leverage well below current covenants
- Interest Expense in line with conservative paydown of existing debt load





## Leverage outlook

#### Net Debt and Leverage Ratio









#### MAXAR TECHNOLOGIES



radiant





# 2018 INVESTOR DAY

# **Space Systems**

Howard L. Lance
President and Chief Executive Officer

# **Space Systems Overview**

#### **Key Business Metrics**

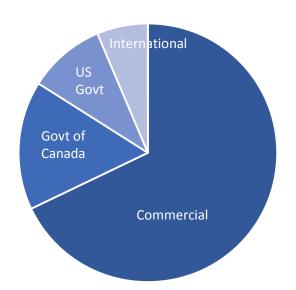
\$1.1B in Revenue 11.5% Decline

16.5% EBITDA Margin

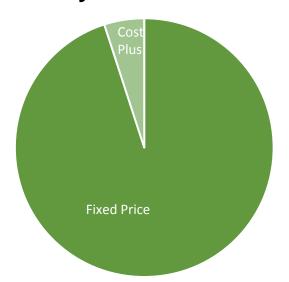
- #1 market leading positions:
- Commercial communication and radar satellites; space robotics
- End-to-end systems for commercial space imagery
- Accelerating growth: Successfully pursuing new US Gov't opportunities
- Strong cost position: Optimizing manufacturing infrastructure

#### **Revenue Mix**

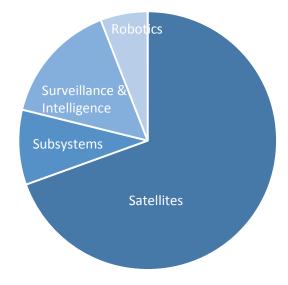
#### **Sales by Customers**



#### **Sales by Business Models**



#### **Sales by Lines of Business**









# **Bottom Line Up Front: The MDA Business**



### Canada

Responsible for Space Systems, Imagery, & Services



# Global Merchant Supplier

Evolve productized solutions from systems experience, for global export to the new space economy



### **Maxar Solutions**

Contribute key elements (ground systems, radar, robotics, satellite components and payloads) cost-effectively to Maxar end-to-end solutions





#### **MDA Overview**



Radar / SAT Radar



**SAT Ground Stations** 



**Robotics** 



SAT Components & Payloads



**Defence Systems** 

- Satellite and Defence Radar Systems
- RadarSat Systems, Services, and Imagery
- Government of Canada and Global Exports
- Earth Observation Ground Stations
- Optical and Radar Imagery
- Canada, DigitalGlobe, and Global Export Customers
- Robotic Manipulators, Rovers, and Visual Sensor Systems
- Space Station, Space Vehicles, Servicing Satellites
- Canada Space Agency, ESA, DARPA, Commercial Customers
- Leading Independent SAT Antenna & Component Manufacturer
- Engineering Design and Production of Payloads, Electronics etc.
- Global Commercial Customer Base including SSL
- Complex Systems Engineering, Development & Support
- ISR, EW, Command & Control, Communications
- Canada DND and Global Exports





# **MDA Market Dynamics**

Radar / SAT Radar

**SAT Ground Stations** 

**Robotics** 

SAT Components & Payloads

**Defence Systems** 

#### **OLD Space & Defence Economy**

- Primarily Government Customers
- Bespoke Program Solutions
- Prefer Home Country Supplier
- Decreasing in Frequency
- Canada New Defence Strategy "Strong, Secure, Engaged"
- Planned Increase to Defence Space Program Spending
- New CSA Space Strategy Seeking Government Funding & Support

#### **NEW Space & Defence Economy**

- Increasing Commercial Customer
   Observation, Coms, Exploration
- Government Leveraging Commercial Suppliers
- Less Low Volume Large GEO,
   More High Volume Small LEO
- More Aggressive Business Models with Less Up Front Capital and More Variable \$\$
- Variable Expenses Drive New Business Models. SaaS. CaaS







# CANADIAN SURFACE COMBATANT

\$1-2B over 15 years





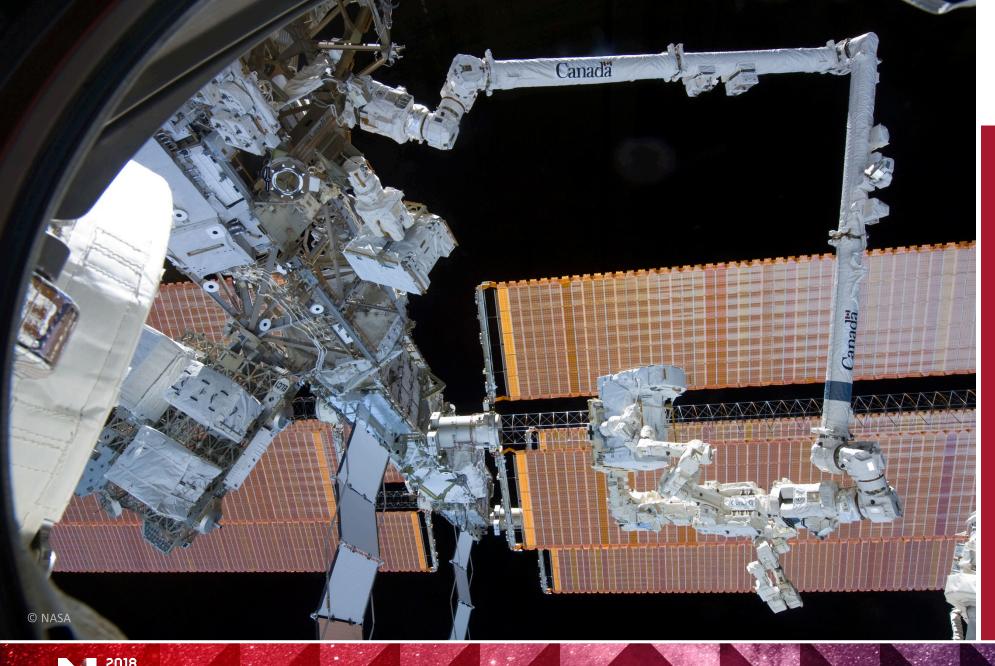


# RADARSAT DATA CONTINUITY

> \$1B over 10 years.



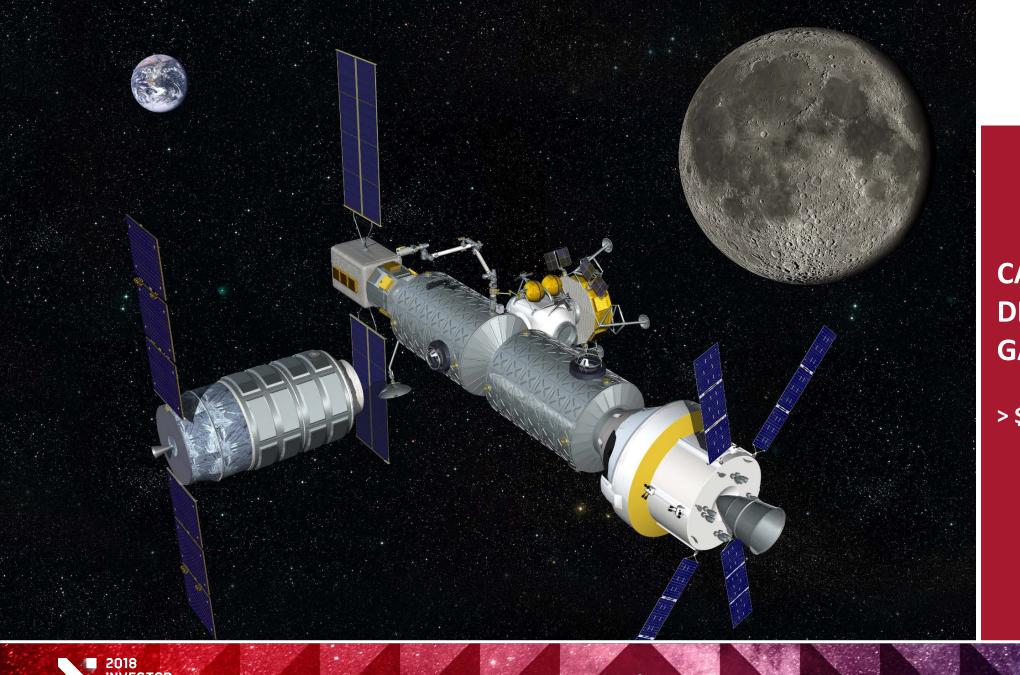




LEGACY SPACE STATION ROBOTICS







# CANADARM FOR DEEP SPACE GATEWAY

> \$1B over 15 years.







# POLAR COMMUNICATIONS

> \$500M over 8 years.



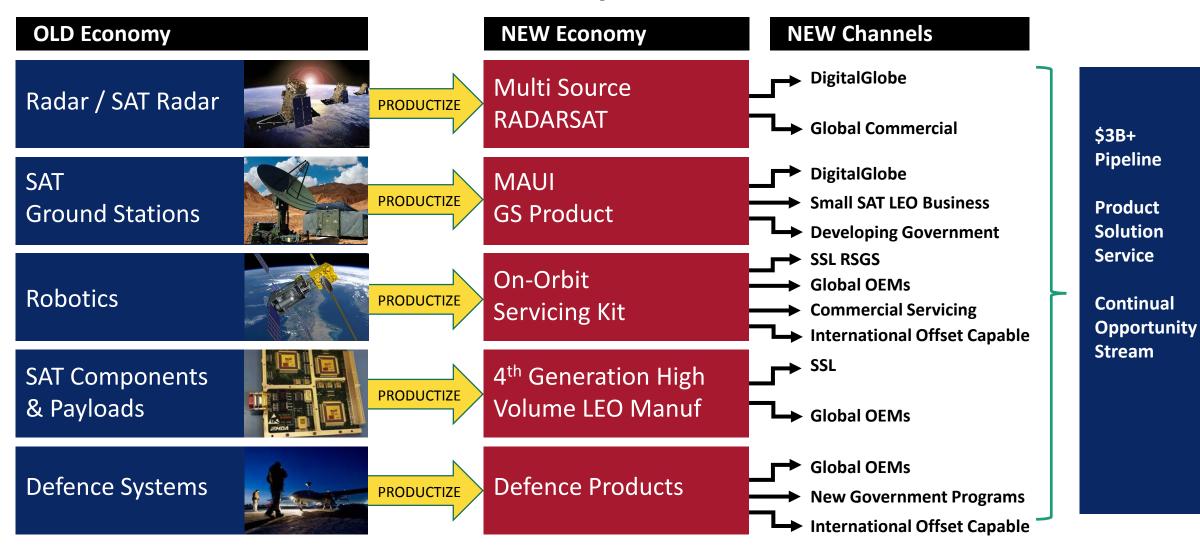




# UAS SURVEILLANCE SERVICE

> \$800M over 7 years

# **Growth Drivers in the New Economy**







# The MDA Business: Summary



### Canada

We are Canada's predominant prime contractor
The Canadian government is initiating significant new spending



# Global Merchant Supplier

Global opportunity for productized global-leadership technologies



## **Maxar Solutions**

A key part of delivering unique and competitive end-to-end solutions









**Dario Zamarian** 

SSL Group President

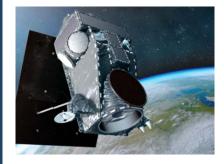


#### **SSL** lines of business



### **Commercial Communications**

Prime provider of satellite communications



### Commercial Earth Observation

Provider of innovative Earth observation and cost-effective small satellite solutions



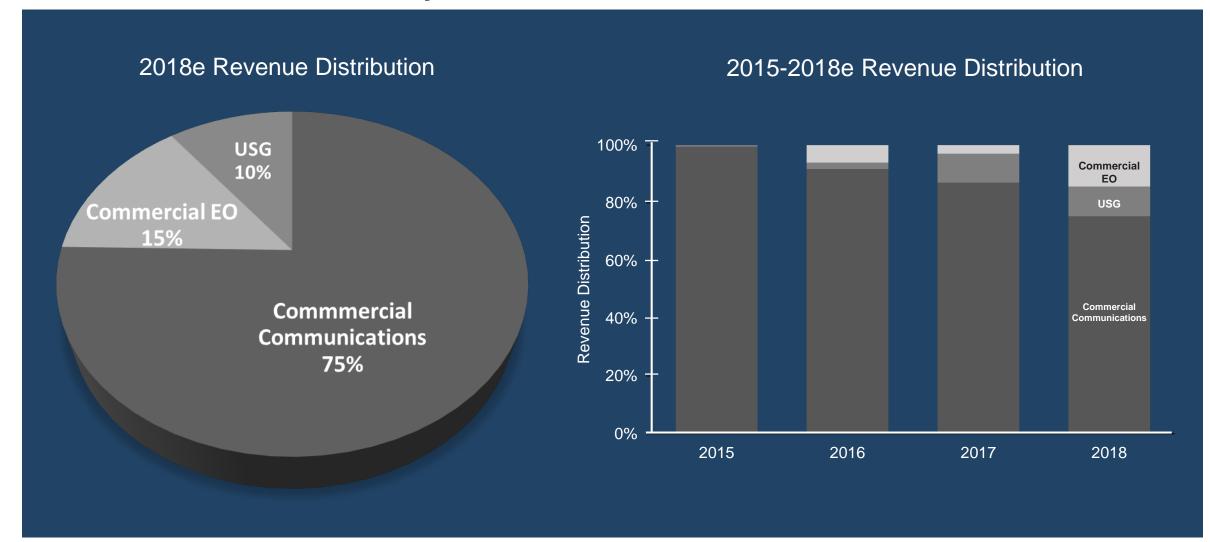
## **US** Government

Provider of cost-effective government space infrastructure solutions





# Revenue distribution by line of business

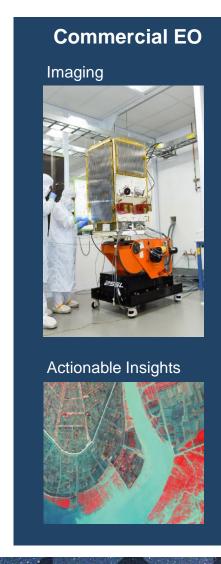






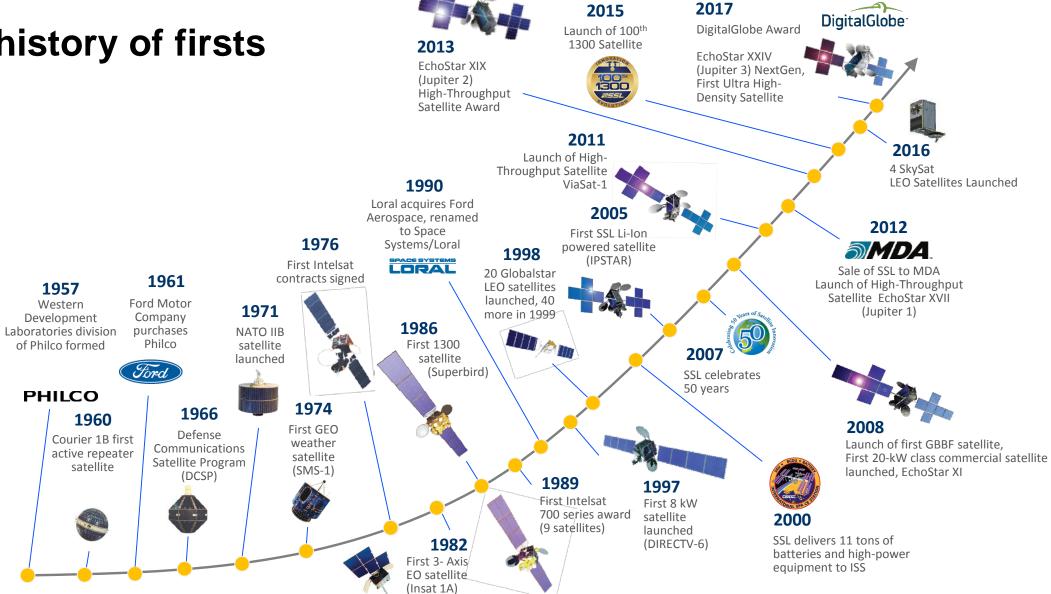
# **SSL** solutions and capabilities

# **Commercial Communications Direct Broadcast** Two-Way Broadband Entertainment Internet Access





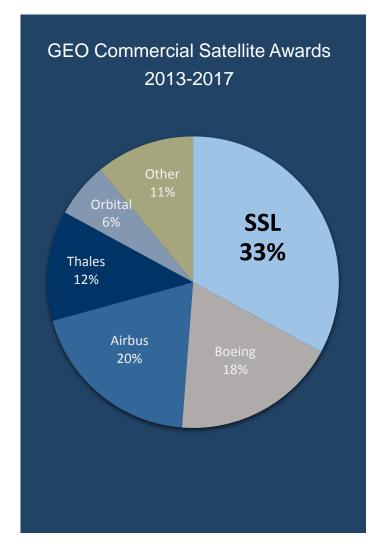
# A history of firsts

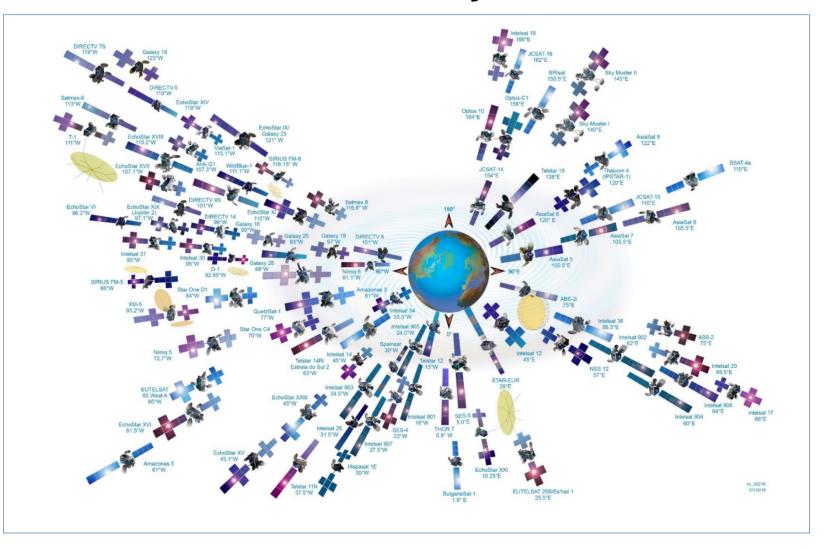






# 86 on-orbit GEO satellites – most in the industry









# SSL has a diversified customer portfolio both in the US and internationally







hispasat 🤭



















**telenor** 



SESA



**劉BulgariaSat** 





**OPTUS** 



planet.











THAICOM



nbn









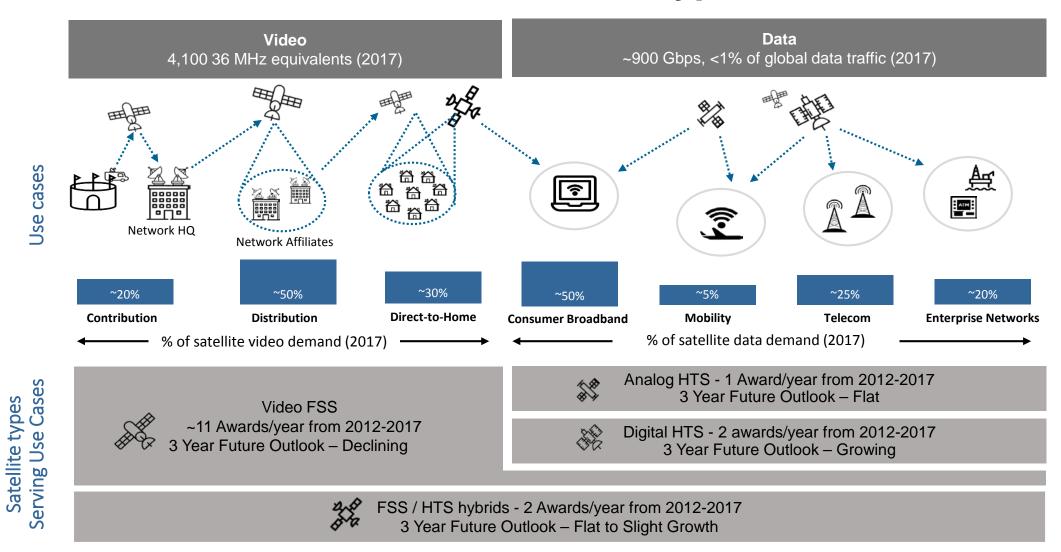








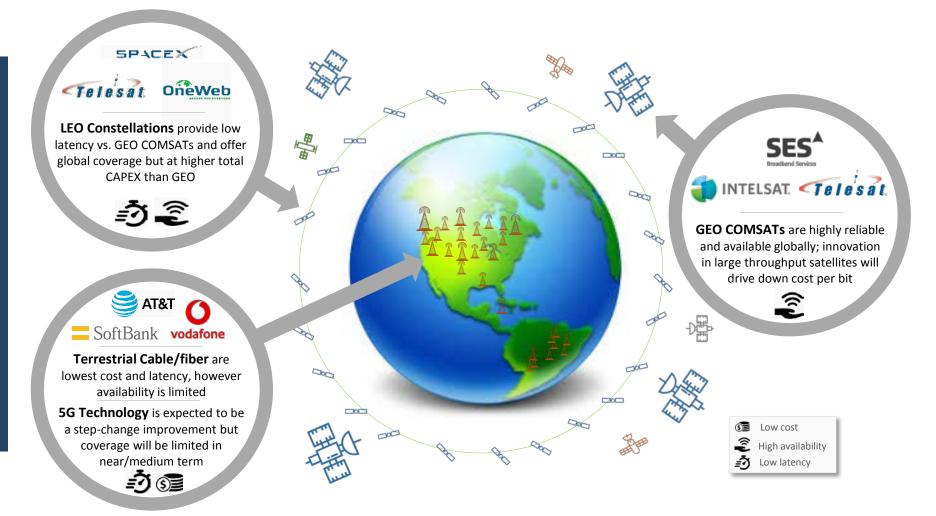
# **GEO COMSAT** use cases and satellite types







Future COMSAT systems will require a complex interplay between GEO, MEO, LEO, and terrestrial 5G

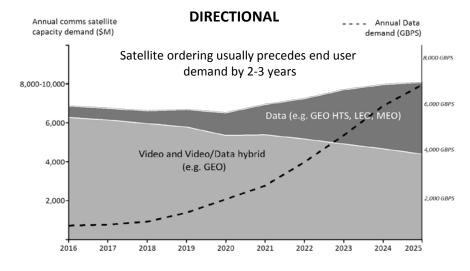




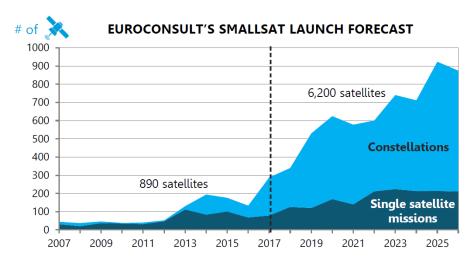


#### 2018 market outlook

- The GEO market is transitioning as usage shifts from video distribution to data-centric applications
- Growth in mobile data needs and replacement satellites will drive market stabilization followed by growth in the 2020s
- The communications market will drive needs for various satellite form factors and technologies, with an emphasis on efficient, standardized satellites enabled by digitization
- New constellations will offer tremendous capacity for new services and grow the smallsat market
- The smallsat market will see further growth as the US Government places more emphasis on resiliency and persistence of the smaller satellites



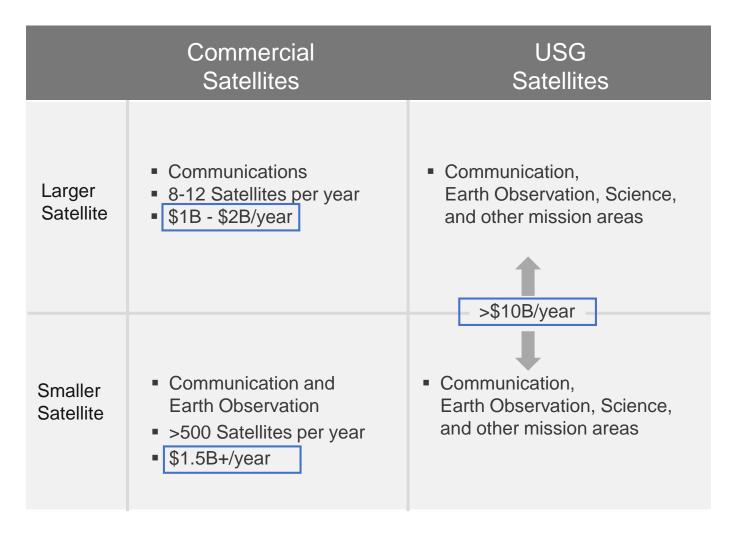
Note: \$ demand assumes 2-5% CAGR price reduction for video from C-band 2016 average pricing; average data satellite price \$.5-.7M/GBPS by 2025; does not include US Gov't Source: NSR, Euroconsult, expert interviews, Bain analysis







#### **Market structure**



- Satellite market can be segmented by customer and satellite type
- Largest segment of the market is US Government satellites
- US Government is placing more emphasis on smaller and commercial satellites for
  - Affordability
  - Resilience
  - Persistence





# Competition

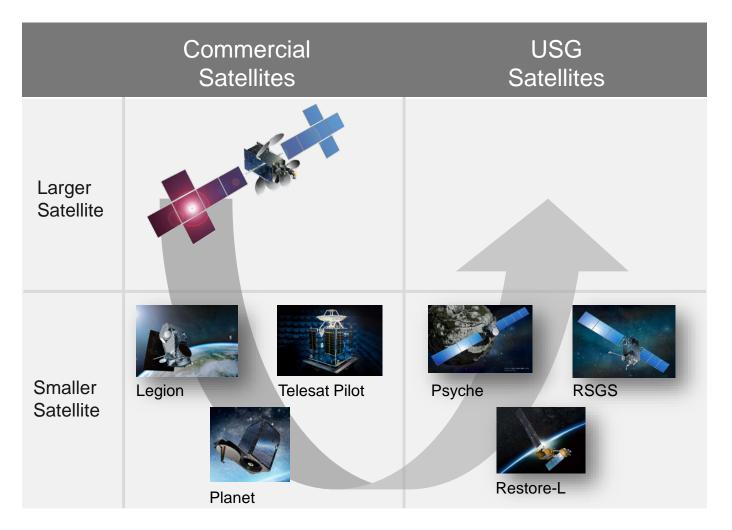


- SSL is the market leader in commercial satellites due to agility and low cost position
  - SSL has maintained leadership in GEO market share
  - Widest commercial customer base and penetration
  - Broadest power range and capacity range
  - Unique Ultra-High-Through-Put Satellite technologies
- Traditional defense primes dominate the Larger USG Satellite Segment but are less competitive in commercial and smaller satellite segments





# **SSL** growth trajectory



- Leverage strong commercial heritage to grow into adjacent markets
- Demonstrated ability to cost-effectively produce small satellites for Planet and other small satellites
- Expanded Earth Observation satellite capabilities with Legion award
- Uniquely positioned to be preferred partner for USG customers
  - Can offer an "Affordable, Persistent and Resilient" set of capabilities
- Providing space servicing solutions to NASA and DARPA
- Providing interplanetary solutions with JPL Psyche program











# **Summary**

- Strong position in the GEO communication market
  - 33% market share
  - 61 years heritage of performance and reliability
  - 275+ satellites launched
  - Most on-orbit GEO satellites in the industry
- Rightsizing the factory to align costs with market projections
- Continuing strong growth in our USG and commercial Earth Observation markets
- Demonstrated early success with our adjacency growth strategy
  - Psyche interplanetary program
  - NASA Restore-L program
  - DARPA RSGS servicing mission
  - 15 LEO satellites in current backlog









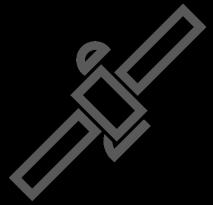


# Accelerating innovation for the new space economy

Dr. Walter Scott, CTO



# **Imagery & Analysis**



Satellites



**Space infrastructure** 

# DigitalGlobe satellite imagery is ubiquitous







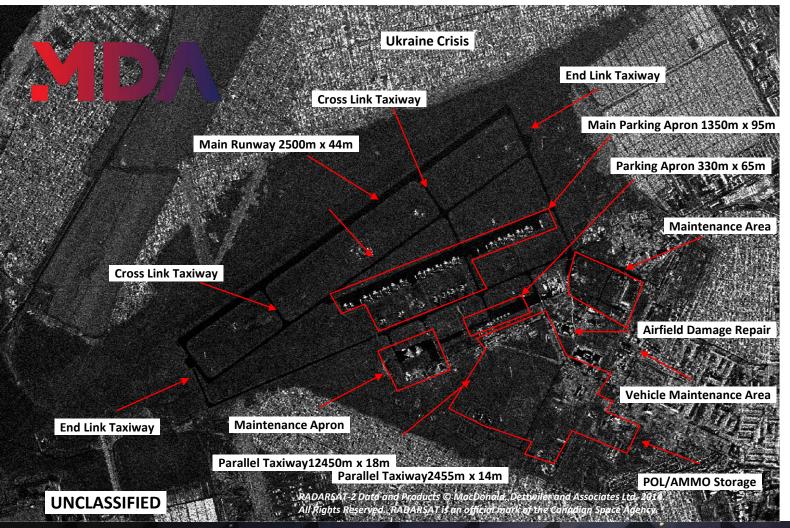
You've used
DigitalGlobe
imagery or
maps derived
from it if you've
ever:

- Searched for directions
- Called for an Uber
- Found a trailhead





# Radarsat-2: Weather Independent Surveillance of Targets of Interest



#### **Taganrog Air Base Overview**

Taganrog, Rostov, Russia
DOI: 23 Mar 14 SEN: RADARSAT 2 GEO: 0471438N / 385037E
DOP: 26 Mar 14

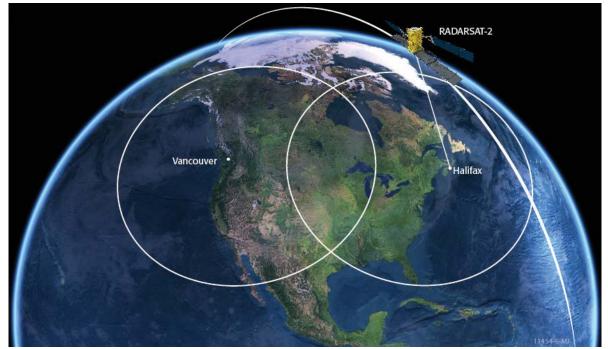


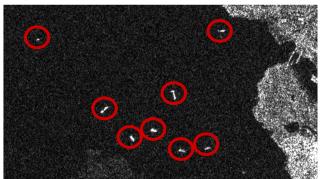
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# Polar Epsilon: Canadian Coastal Security Using Radarsat-2







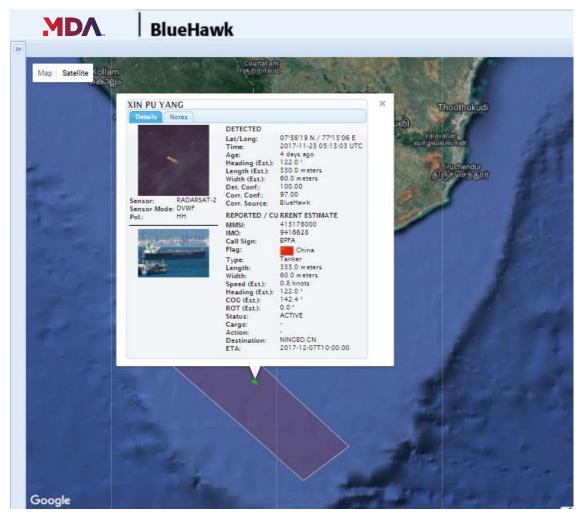
Canada's Polar Epsilon program revolutionized knowledge of marine traffic:

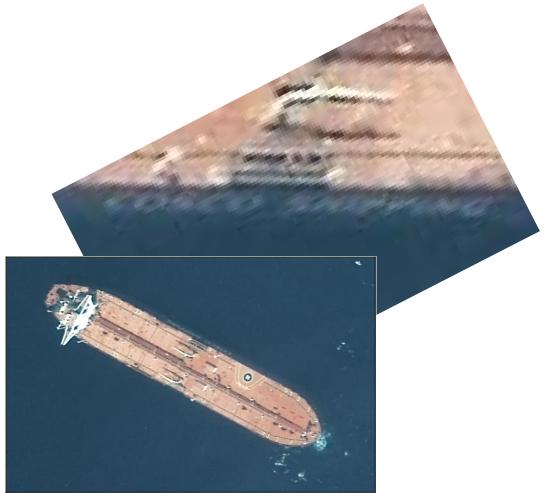
- Surveillance of Canada's maritime approaches using RADARSAT-2
- Millions of square kilometers analyzed daily
- Ground Stations on East and West coasts for real-time downlink
- Ship position, length, course, into maritime C2 system <15 minutes from imaging
- Delivers only derived ship information not imagery





# Combining Radarsat-2 and WorldView to track and identify vessels of interest

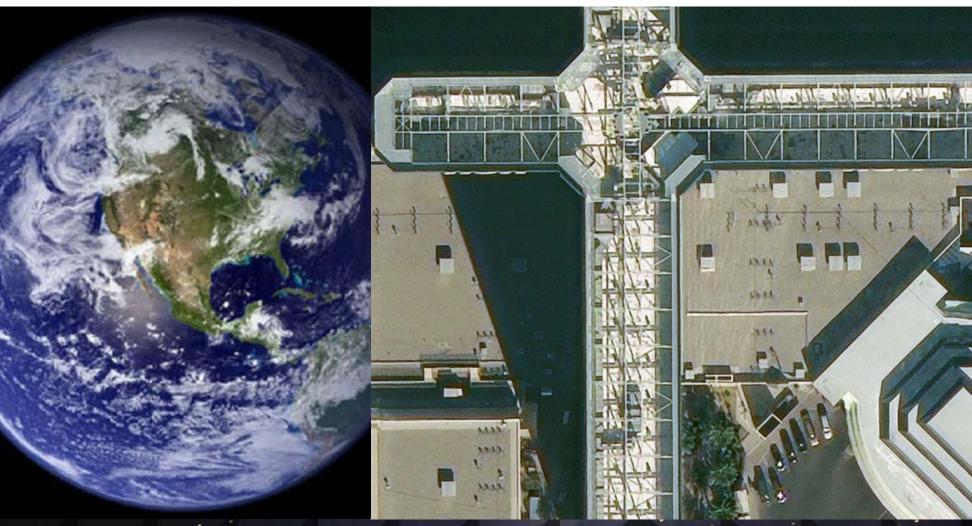








# It's a BIG planet

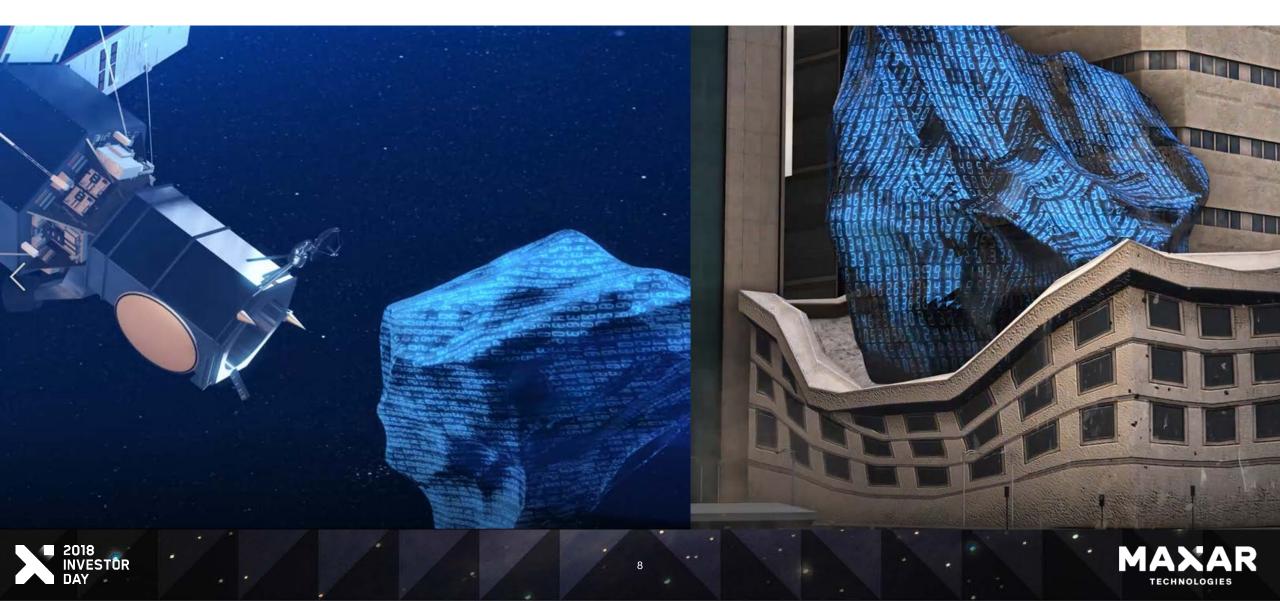


- Each image detailed down to less than a foot
- But same detail across every square foot of the planet





# Our satellites create enough data to crush most IT departments





We manage an archive of 100 petabytes, which we've stored in the Amazon (AWS) cloud

## How big *is* 100 petabytes?

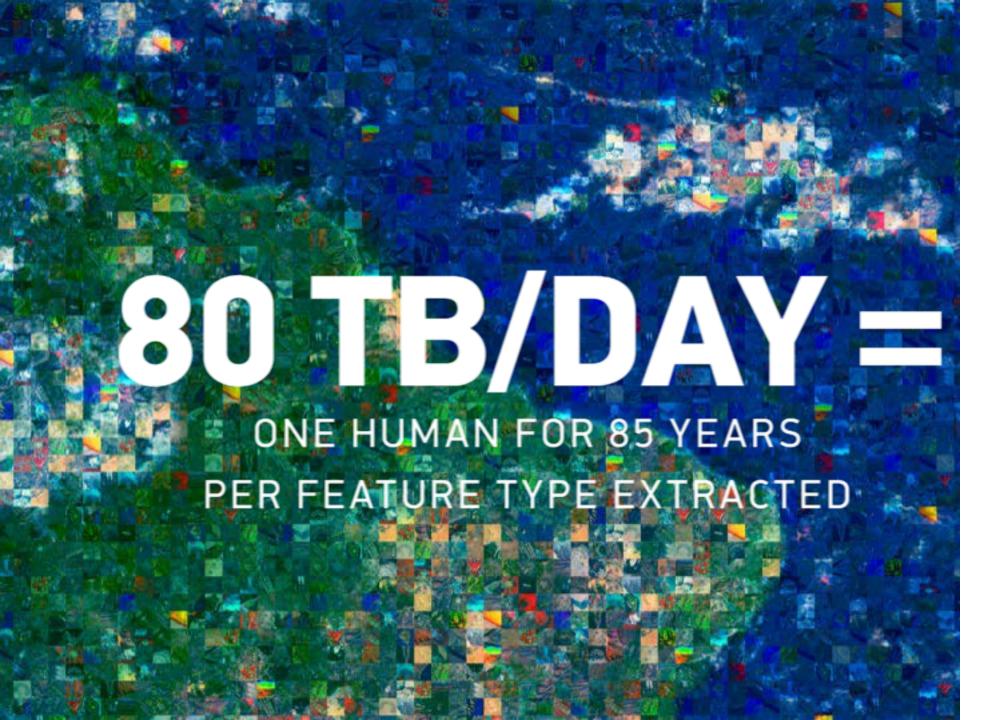
# 1 byte





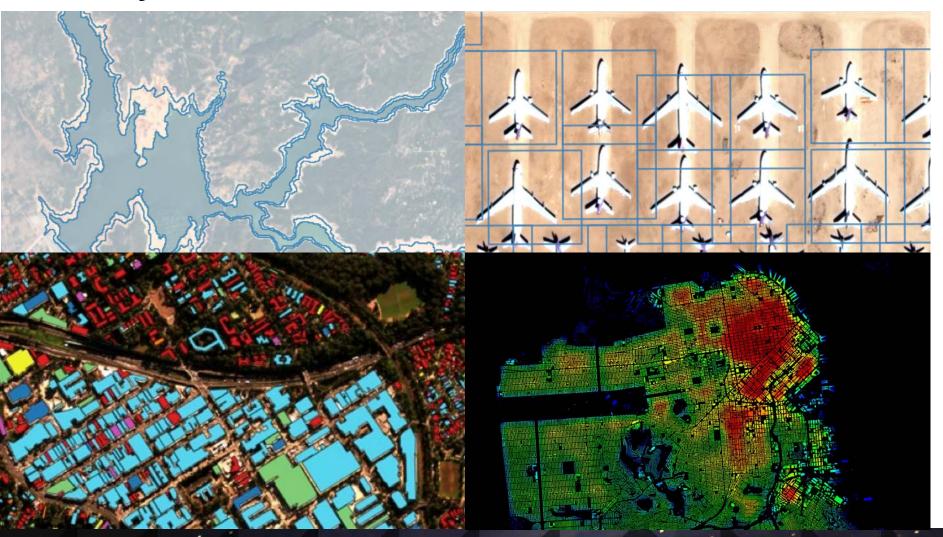






- DigitalGlobe satellites collect 80 TB/day
- Too much for humans to analyze
- Requires machine learning

# Geospatial Big Data (GBDX) platform converts imagery into usable, analyzable information



- Cloud based
- Leverages an ecosystem of Maxar and external algorithm developers
- 2,000+ cuttingedge developers on the platform





#### Continent-scale mapping project for PSMA Australia



Mapped at a tiny fraction of the cost of traditional methods

#### Leveraged:

- Machine Learning
- Crowdsourcing





## GeoScape: Continent-scale mapping project for PSMA Australia

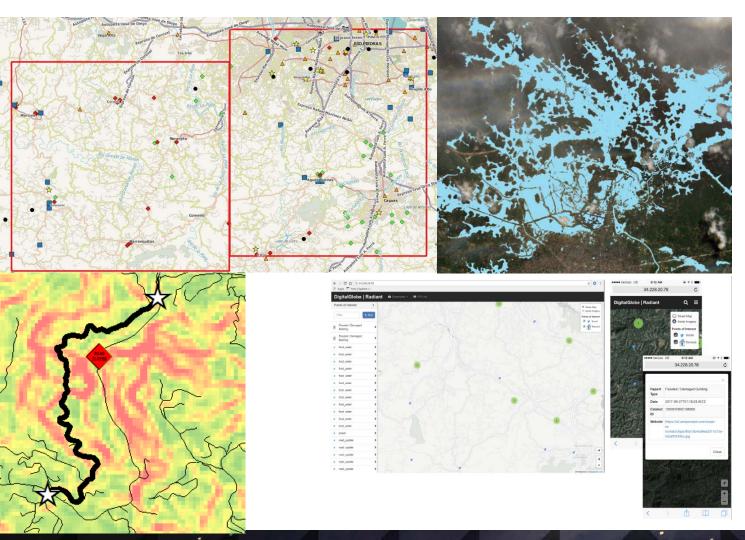


- Building footprints and heights
- Trees and heights
- Roof materials
- Swimming pools
- Solar panels
- Land cover
- **.** . . .





## Radiant Solutions supported hurricane response in Puerto Rico



- Crowdsourcing assessed building damage
- Algorithms detected flooded areas
- Terrain analytics determined for fastest routes
- Social media tools found disaster points of interest
- Web service delivered in 48 hours





## All of Maxar contributes to the Imagery & Analysis value chain



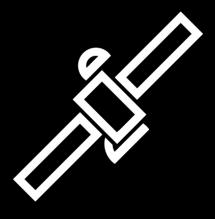
**Satellites** 

**Ground stations DAF installations Radar** 

Integrator Operator Sales Analytics
Machine Learning
Products
Ground systems



## **Imagery & Analysis**

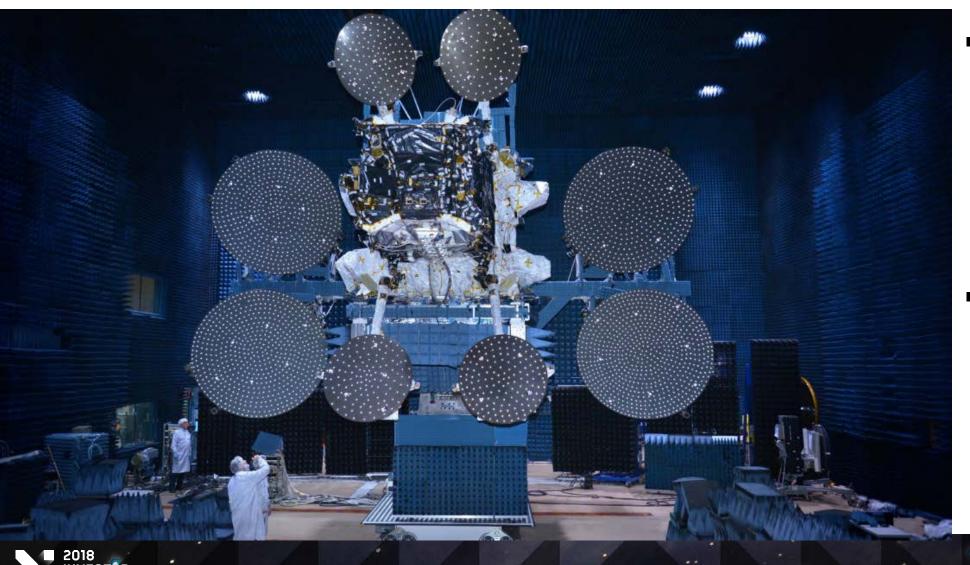


## Satellites



**Space infrastructure** 

#### SSL is the world leader in commercial satellites



- Large and powerful communication satellites serve applications such as broadcast television & high-speed internet
- 49 geosynchronous satellites built by SSL have been launched since 2010

#### SSL is the world leader in commercial satellites



- Company has built 11 small imaging satellites for Planet
- 8 more under construction



#### Digital payloads dynamically adapt to changing bandwidth needs



- Previous generation spacecraft have relatively fixed coverage areas
- SSL technology can concentrate capacity over the regions that need it most, and dynamically adjust it from minute to minute

#### MDA is the leading merchant supplier of satellite antennas



- MDA provided antennas for O3B and Iridium Next communications constellations
- Now under contract with
   OneWeb to deliver
   3,600 antenna subsystems for integration on 900 satellites





#### MDA is building the RADARSAT Constellation Mission

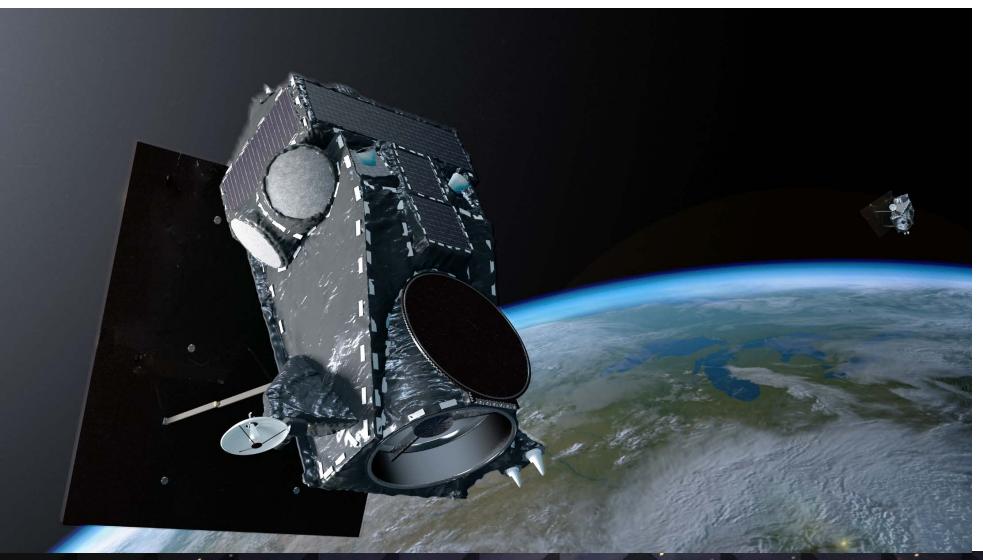


- RCM is nearing completion in Montreal
- Large area radar collection
- Will be delivered to Canadian government





## **WorldView Legion**



- DigitalGlobe's next-generation multi-satellite constellation
- Construction began mid 2017
- Launches begin early 2021



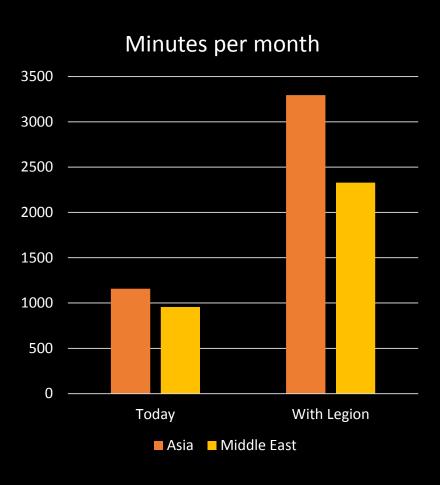


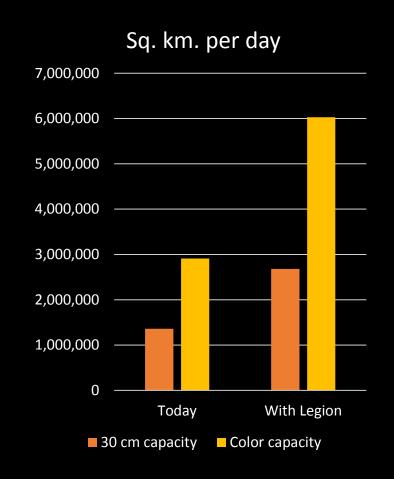
# WorldView Legion provides more usable capacity per dollar invested

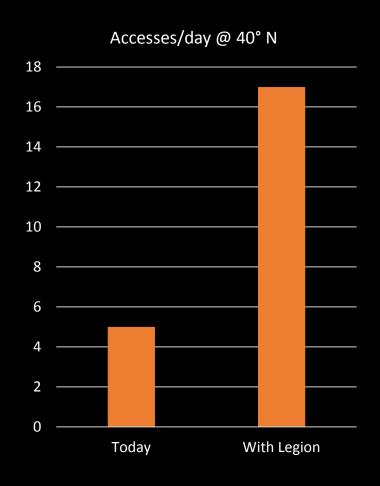
More high-demand capacity

More 30 cm capacity

More frequent revisit







#### All of Maxar participates in WorldView Legion



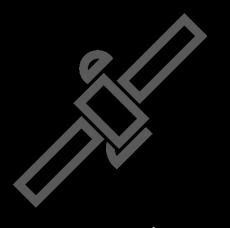
**WorldView Legion** 

**Ground stations DAF installations Radar** 

Integrator Operator Sales Analytics
Machine Learning
Products
Ground systems



## **Imagery & Analysis**



Satellites



**Space infrastructure** 

## What if planes were treated the same way as satellites?





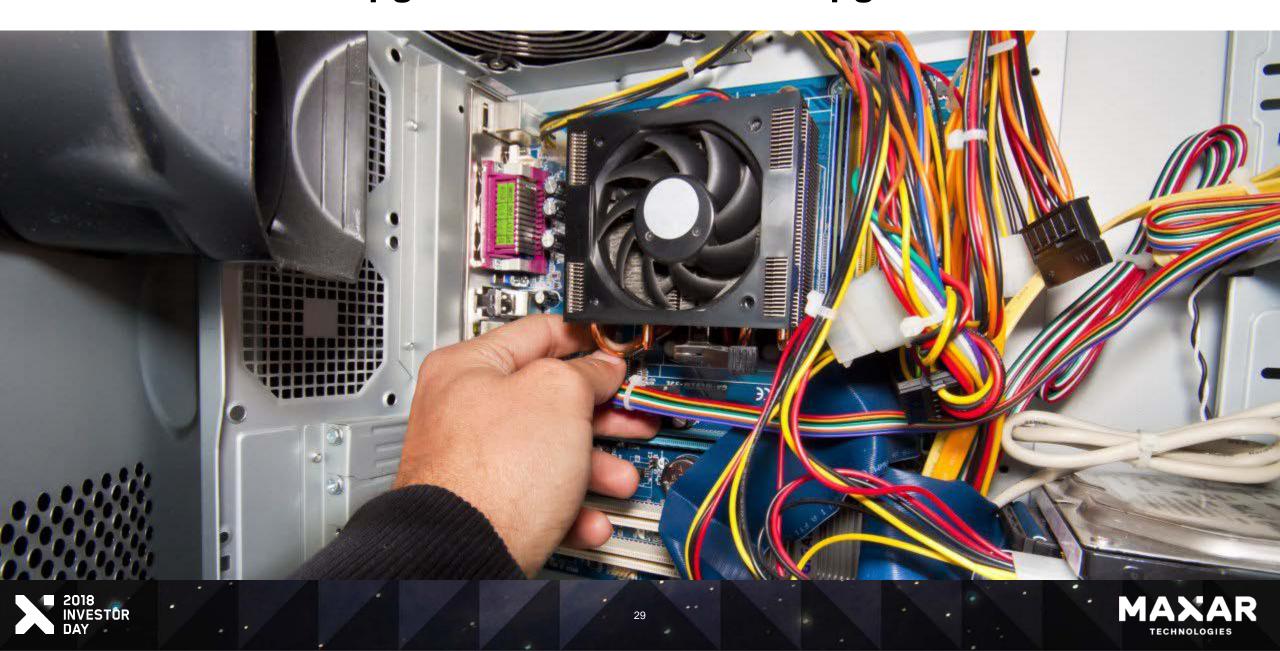








## What if we could upgrade satellites like we upgrade PCs?



#### MDA brings a key technology: space robotics



- We have a long history here
- MDA was
   responsible for the
   Canadarm, a robot
   arm on the Space
   Shuttle that was
   essential to many
   missions, including
   the Hubble repairs
- Canadarm-2, a.k.a. Dextre, is operating on the International Space Station.





#### **Restore-L**



 Restore-L is a first step to refuel a satellite in low Earth orbit for NASA – a few hundred miles up.





## Robotic Servicing of Geosynchronous Satellites (RSGS)



- RSGS is a publicprivate partnership with DARPA.
- It's a flying space robot with multiple arms and tools for manipulating and repairing satellites.

#### Please visit our kiosks at the break for more information



















#### MAXAR TECHNOLOGIES



radiant





# 2018 INVESTOR DAY

## Update on Post-Merger Integration

Tim Hascall, Maxar COO

# We expect to achieve \$60M-\$120M in run-rate EBITDA synergies by the end of 2019

#### **Cost Synergies**

- Elimination of duplicate public company costs
- Procurement savings
- Operational benefits of increased scale and enterprise support services
- Scale efficiencies from satellite vertical integration

\$60M-\$120M in EBITDA Run-rate Synergies by Year-end 2019

#### **Revenue Synergies**

- Optical and radar imagery data cross-selling opportunities
- Remote sensing satellite manufacturing opportunities
- End-to-end international system sales
- Large geospatial services contracts opportunities

We have line-of-sight to reaching our 2018 AOP cost synergy target of \$25M and have achieved \$20M in EBITDA run-rate synergies since closing.





# Applying best practices, we've established operational synergy initiatives to achieve our synergy objectives

Synergy Initiative	Synergy Objective	Increase Revenue	Reduce Cost
Enterprise Support Services	Provide cross-Business Unit functional services to the business while reducing cost, and increasing scalability for future growth		✓
Strategic Sourcing	Enable procurement savings through increased buying power		✓
Enterprise Investment Governance	Optimize capital spend and corporate capital portfolio investment across the New Space enterprise		✓
Cross-Business Unit Collaboration	Enhance collaboration and support Business Unit communication to increase velocity and sales process efficiency	✓	✓
Marketplace Success	Accelerate leading provider of end-to-end satellite, ground systems, imagery and geospatial solutions through expanded capabilities and scale	✓	
Corporate Domestication	Enable access to United States government classified programs	✓	





#### Our synergy initiatives cut across our geographic footprint







# We are creating a cross-functional enterprise-wide shared services capability to drive cost synergy



- Aggregate buying power
- Eliminate duplicative support services
- Setup functional centers of excellence
- Drive synergy in sales support costs





# An optimized end-to-end ground systems architecture will drive cost and revenue synergy







## We will continue to focus on specific actions to achieve our synergy targets

Actions

**Cost Synergies** 



- Renegotiate vendor contracts
- Optimize real estate footprint
- Integrate information technologies
- Establish cross-BU support services in the IT, HR,
   Finance, Procurement and Marketing functional groups
- Eliminate duplicative capital programs

**Revenue Synergies** 



- Provide end-to-end space system solutions to international governments and select commercial customers
- Capture U.S. Government programs through DoD and IC contract vehicles
- Cross-sell radar data (RADARSAT) and high-resolution optical imagery (WorldView) through an integrated global sales channel





## We expect to achieve \$60M-\$120M in run-rate synergies by the end of 2019

#### **Cost Synergies**

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- Procurement savings
- Operational benefits of increased scale and enterprise support services
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## 2018 INVESTOR DAY

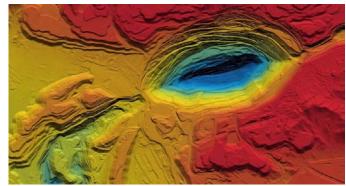
## **Imagery**

Dan Jablonsky, President



## We are the leader in Earth observation and geospatial solutions







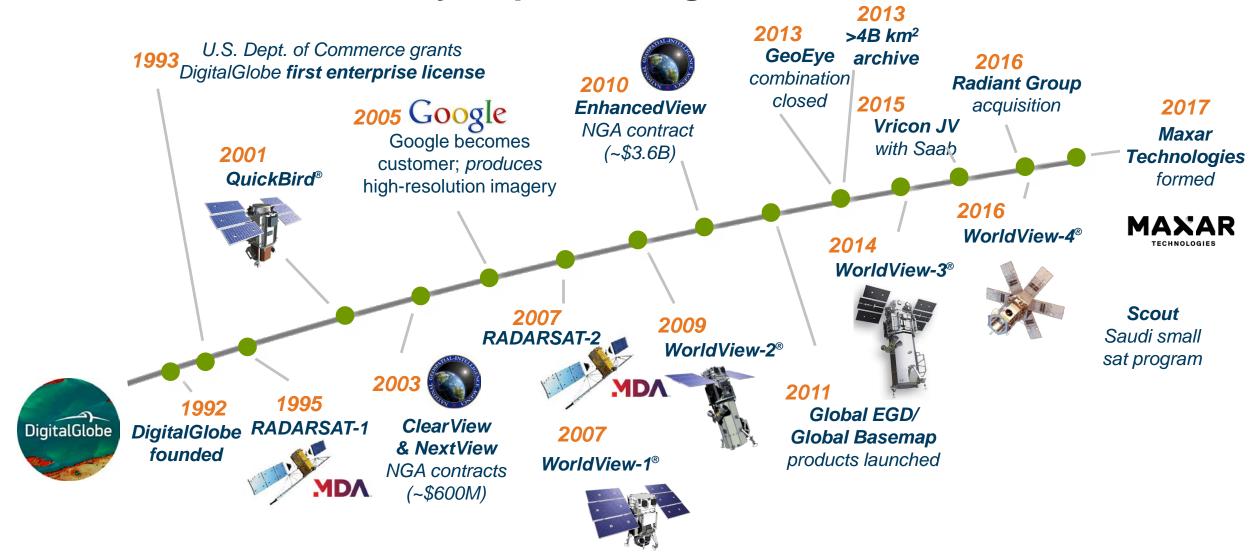


- Global leader with sustainable technology advantages, highest quality commercially-available imagery, 100 petabyte historical image library, integrated into workflows across governments and commercial users
- Now building a scalable ecosystem of content providers, application developers and end-users in the cloud to unlock new markets
- Developing innovative new geospatial solutions that help customers harness the full power of "The DigitalGlobe"
- Serving customers across the geospatial intelligence value chain with innovative Ground, Machine Learning, Deep Learning and Data Analytics





# We have a rich history of pioneering achievements







# **Imagery overview**

#### **Key Business Metrics**

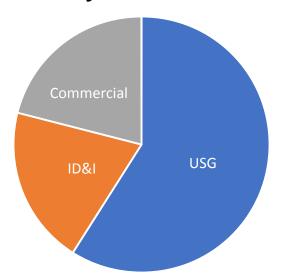
\$850M in Revenue 5% Growth

63.5% EBITDA Margin

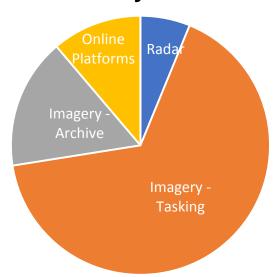
- Global leader: Highest-quality, commercially-available imagery with 100 petabyte historical image library
- Platform: Integrated into workflows of customers
- Reducing capital intensity: Worldview-Legion constellation
- Extending technology lead: Higher revisit, more insights at scale

#### **Revenue Mix**

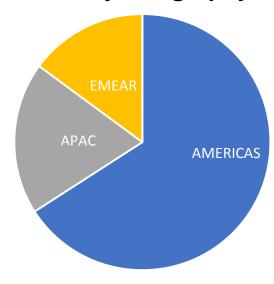
## **Sales by Lines of Business**



## **Sales by Product**



### Sales by Geography







# **Imagery growth drivers**

## WorldView Legion

- Highest resolution, accuracy and capacity
- Highest revisit in high demand areas
- Near real-time distribution

## "The DigitalGlobe"

- Automated feature extraction and data layers at scale
- Automated analysis of multiple images and datasets
- Scalable ecosystem of content, apps and users in the cloud
- Machine learning and artificial intelligence applications for high end analytics

#### **New Products**

- Rapid Access,SecureWatch andEarthWatch
- Elevation and land-use / land-cover data sets
- Metro base map
- End-to-End solutions, including Legion-X





# Large players continue to win as startups have struggled

#### **Large Players**

- Established competitors
- Key competitor announced high





- resolution imageryAerial/UAVs offer very high quality
- Quick for small projects

data

 Currently not a scalable model







## **Small Players**

A number of startups



- Many constellations still need funding
- Struggling with the costs of operations, reliability, worldwide networks, and distribution channels
- Influx of 1 meter+ supply may reduce prices
- High revisit

#### SAR

- Accelerate the growth in value added services
- Emerging market opportunities
- Increasing competition



But not all constellations are created equal – satellite quality, infrastructure, timelines and accessibility will differentiate DigitalGlobe





# World-leading technology and capabilities

#### Resolution

 High resolution enables customers to see objects invisible to other providers

Resolution		
DigitalGlobe (WorldView)	31-50cm	
Airbus (Pleiades)	70cm	
Planet (SkySats)	80cm	
Planet (Doves)	3-5m	

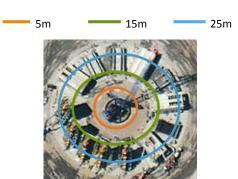
# 30cm 20cm 3m

DigitalGlobe has best in class resolution at 5x nearest competitor and 10x best "start-up"

#### Geolocation accuracy

 Radial distance from the true geolocational coordinates, reducing the need for verification

Native Accuracy	
DigitalGlobe	< 5m
Airbus (Pleiades)	< 10m
Planet (Doves)	> 100m





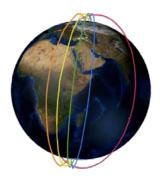
DigitalGlobe has the best in class geolocational accuracy

#### Revisit

 Increased access opportunities over areas of interest, unlocking monitoring and change detection capabilities

DigitalGlobe*	< 30 min
Closest competitor	< 90 min

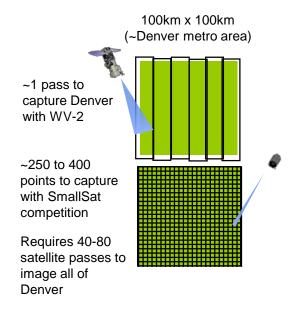
(\*) Includes Legion and small sat strategy



Our future constellation improves current revisit times, while maintaining quality

#### Collection capacity / scale / agility

 Contributing factors in determining the number of orbital passes required to collect an area of interest

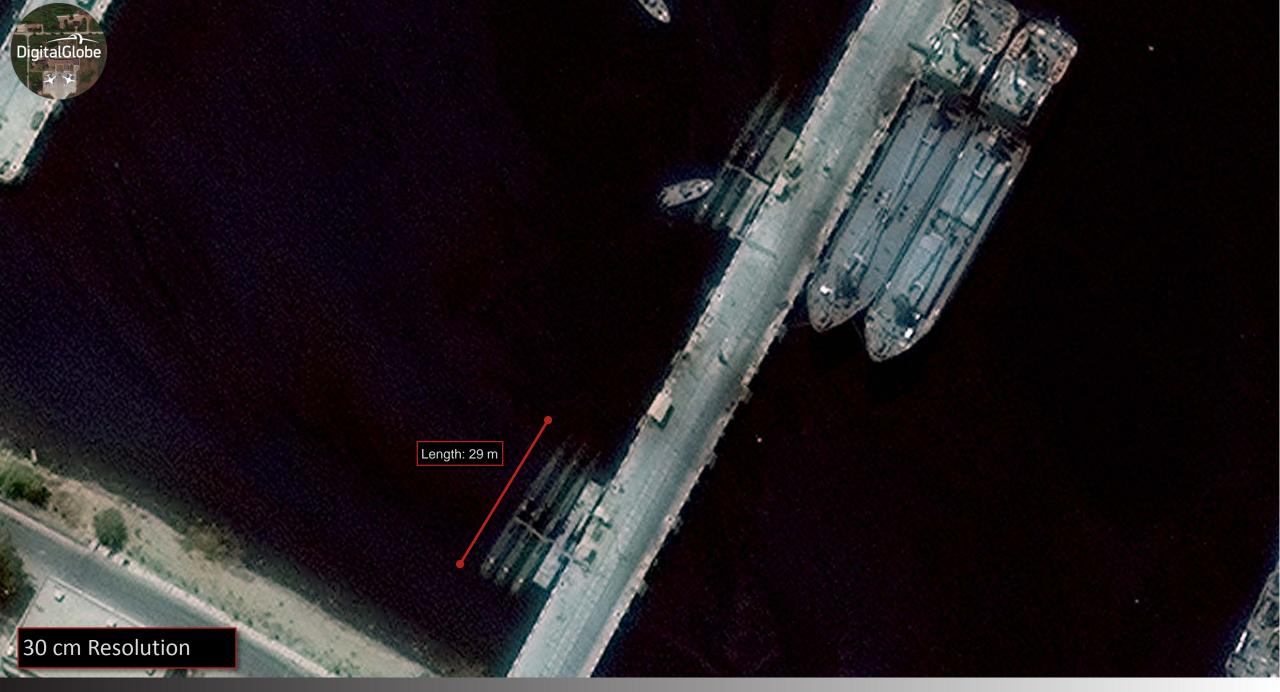


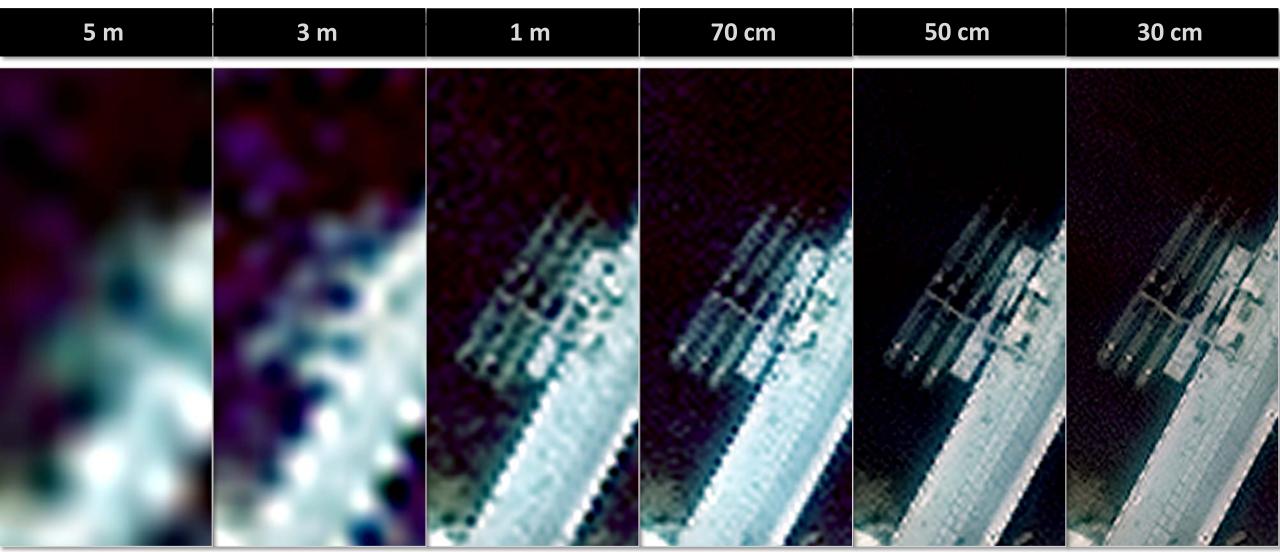


We have unmatched agility, enabling mission flexibility (e.g., targets and mapping)







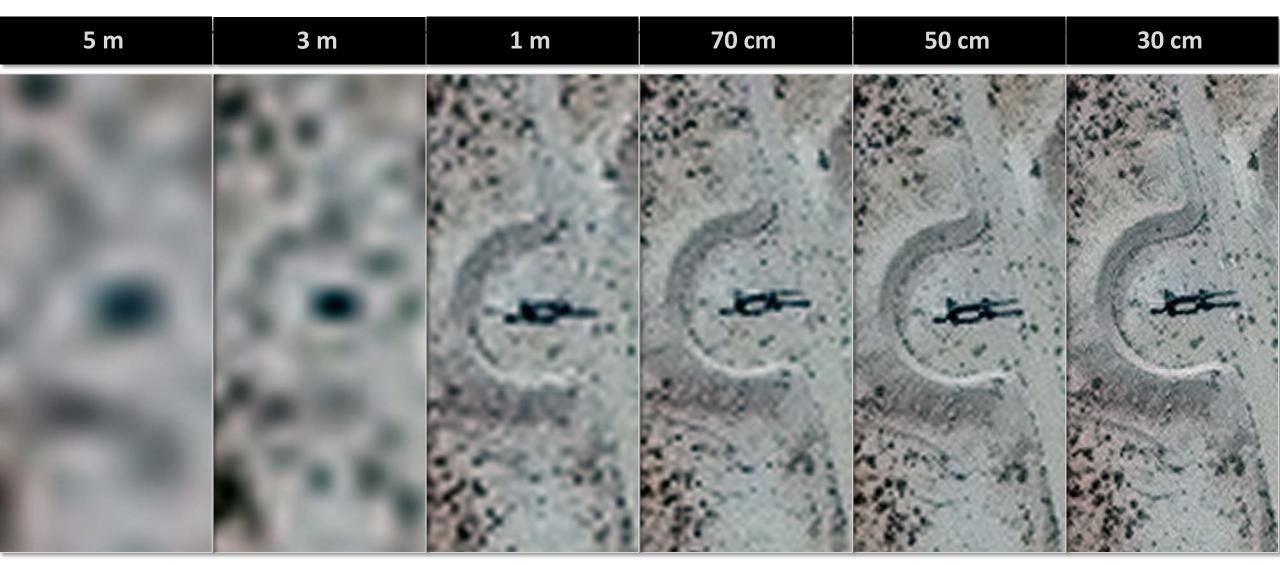


Ghadir-class midget Submarines | Bandar Abbas, Iran | August 7, 2016 | WorldView-3 | Image and Metadata









SA-2 air defense missile | Bandar Abbas, Iran | August 7, 2016 | WorldView-3 | Image and Metadata







5 m	3 m	1 m	70 cm	50 cm	30 cm
		Childing 3	Contracting a s a s a s a s a s a s a s a s a s a	28282828888888888888888888888888888888	2858588888868 5 5 5 5 5 5 5 5 5 5 5 5 5 5
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# Highest detail imagery coupled with AI, allows us to extract features at scale







# Detailed 3D models from our world-leading imagery allows Line of Sight calculations for signal propagation for 5G networks



| Tokyo, Japan





# Unsurpassed agility allows us to support missions that cannot be supported by small sats and less agile systems

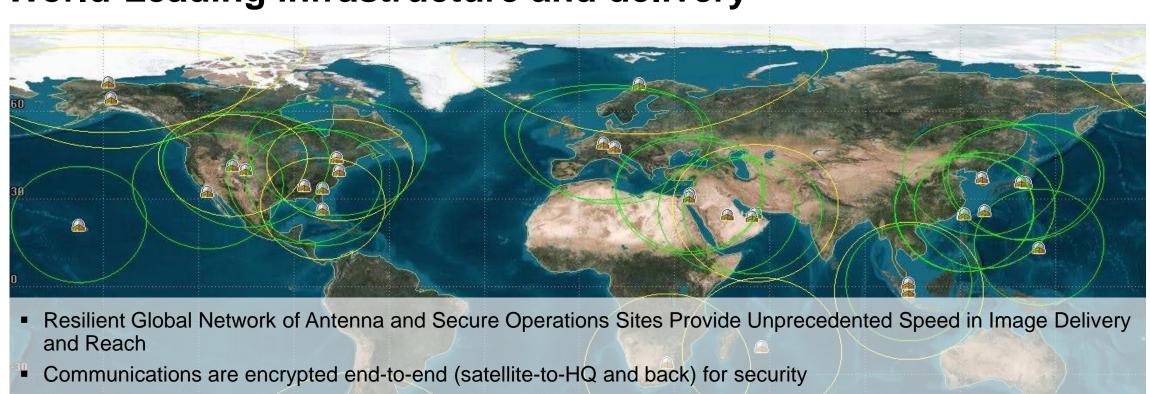


New York City | WorldView-3 | WV-3 was located about 1650 km SE of NYC (420 km SSE of Bermuda)





# World-Leading infrastructure and delivery



- Supports near-real-time imaging and delivery
  - 45% of the earth's land can be imaged in real time contact with a DigitalGlobe/MDA remote ground terminal
  - 95% within 20 minutes

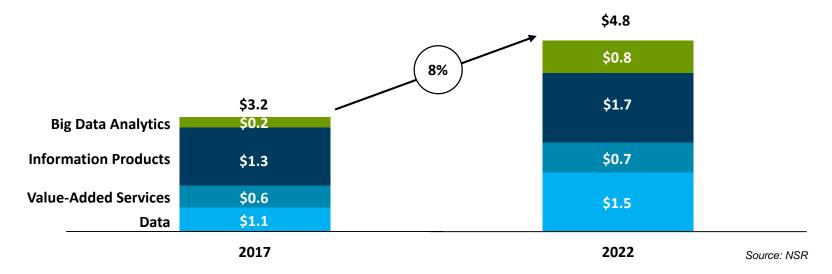




# Expanding need for information / analytic based solutions

#### Growth rate of 8%+ driven by 25%+ growth in Big Data Analytics

**Satellite-based Earth Observation Industry Segments and Revenues** (\$ in billions)



- Data imagery and related products
- Value Added Services processing and applications that transform raw data into information
- Information Products processing and applications-specific analysis from imagery
- Big Data Analytics analysis of multiple images and a wide variety of datasets in order to extract information not apparent in the base data





# **Opportunities across U.S. Government**

#### DigitalGlobe's capabilities are essential to the USG mapping and monitoring mission

History of Relationship

16 year continuous relationship over 3 programs

Outperformed contractual service level agreements for 65 consecutive months



- Provide 90% of the foundational imagery for mapping mission
- Precision monitoring with best-in-class accuracy and resolution
- Deeply integrated into intelligence gathering infrastructure secure ops



- Value, best cost per unit provider
- Assured access to the highest resolution, most accurate, and best performing commercial imagery constellation in the industry
- Secure operations to enable commercial imagery to be used to support the classified needs of the US Government
- Unclassified imagery; critical provider of unclassified imagery ready for immediate use

#### **Opportunities**

- Execute strategy for 'EV Next'
- Add WorldView-4
- Building analytics
- Increase users of Global Enhanced GEOINT Delivery
- Enable additional geospatial offerings via GBDX





# Opportunities across international defense and intelligence

#### Providing direct tasking, high resolution, high accuracy and other capabilities to U.S. Allies

**Direct Access** 

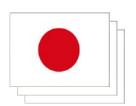
**Assured Access** 

**High Priority Tasking** 

**Opportunities** 

Legion-X

- Direct Access Program (DAP) international defense and intelligence organizations pay to task our constellation by the minute
- Guarantees dedicated capacity and delivery speeds
- Encrypted downlink ensure confidential end-to-end workflow within communication cone
- Guaranteed access and data distribution rights
- Access to the worlds most advanced constellation, with high priority tasking
- Receive data in near real-time
- Onsite product processing allowing custom product generation
- Rapid Access: Affordable and intuitive online satellite access, an "online Direct Access Facility"
- DAP: Expect one new customer per year on average
- **SecureWatch**: Online access to the industry's best imagery and geospatial intelligence which is allowing us to penetrate a number of new countries and agencies
- End-to-end solutions: Economical model for high performance national imagery intelligence system
- Partnering closely with SSL and MDA to pursue opportunities











# Opportunities across commercial

#### DigitalGlobe will drive growth through new products, new verticals and new supply

**Imagery** 

Basemap

**Verticals** 

**Elevation and Data** Layers

- Basic imagery sold at varying processing levels and SAR through multi-source data strategy
- Suite of cloud-hosted mosaics with differentiated processing and refresh
- Civil governments: national mapping projects, urban planning, natural resource exploration, land use and surveying, change monitoring
- Technology: online mapping and situational awareness
- **Energy:** facilitates decision making and responsible development through Spatial-on-Demand
- **Telecomm:** 5G planning, right-of-way
- Natural resources: assess crop growth and health, wildfire risks, crop and soil classification
- Automotive: development of applications for autonomous vehicles
- NTT: Scale elevation and land-use / land-cover data sets built to serve Telecom customers
- Vricon: Scale elevation models produced algorithmically from DG archive
- DigitalGlobe Building Footprints powered by GBDX: Algorithmically derived building footprints





































# Common architecture and product development to drive growth across new and existing customer groups

#### **Elevation Data Layers Imagery** NTT **GBDX Core Imagery DigitalGlobe Building Footprints** Basic imagery sold at varying Scale elevation and land-use / land-cover powered by GBDX processing levels, e.g., orthorectified data sets built to serve Telecom Algorithmically derived building Basemap customers footprints Suite of cloud-hosted mosaics with Vricon differentiated processing and refresh Scale elevation models produced Additional Offerings coming in 2018 algorithmically from DG archive



- Only Geospatial Big Data Platform with Analytics at Scale
- Artificial Intelligence platform to extract useful information from satellite imagery
- Enables production and dissemination of Imagery, elevation, and data laver offerings

#### **Multi-Source**

**Platform** 

- Spatial on Demand: platform for oil and gas customers
- Optical: 17+ year archive; ~33x the Earth's landmass. Kompsat, 21AT
- SAR: RADARSAT-2
- Free: Landsat. Sentinel. OpenStreetMap
- Other: GeoNews. HumanLandscape, WorldDEM, TripleSat, Twitter









Telecom



**Technology** 



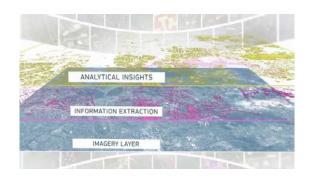
**Automobile** 



Civil Gov't



**Agriculture** 







# "The DigitalGlobe" makes our products accessible to more users



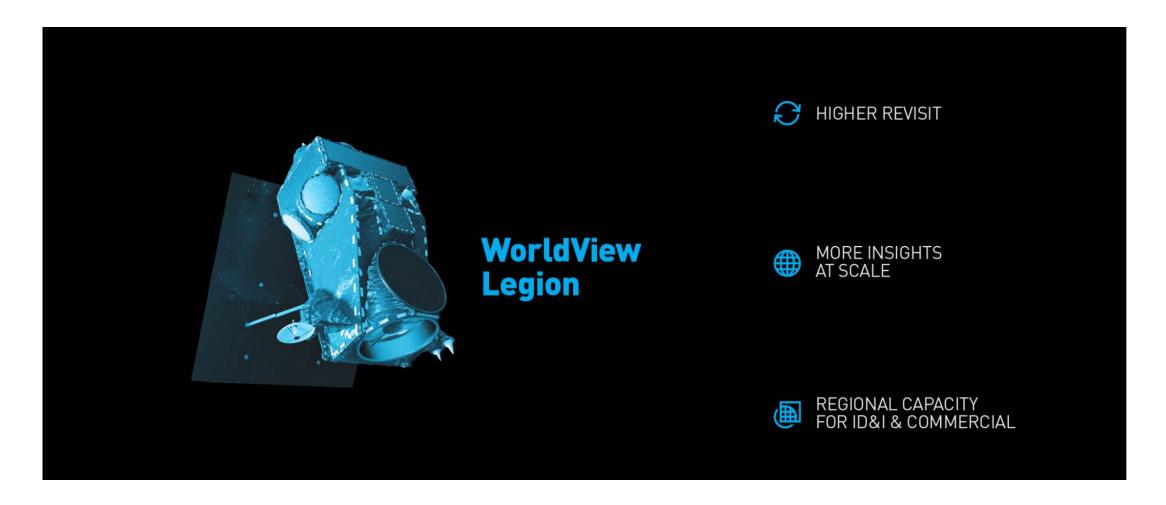
- Innovations in cloud computing and machine learning make satellite imagery-derived data and insights more accessible than ever
- The DigitalGlobe will be a geospatial repository of information
- Dramatically enhances the usability of our imagery products

Come for the data (we have the most), stay for the ease of use, and use this to drive network effects through growth of the producer/consumer ecosystem





# Legion supports future growth, is capital efficient, and de-risks our current constellation







# Positioned for long-term value creation

Established Leader in Expanding Industry

- Mission partner to U.S. Government and Canada
- Growing business with International Defense & Intelligence customers
- Positioned to capture commercial growth with new applications and use cases
- Enhancing cloud based ecosystem of content providers, application developers and end-users
- Delivering cutting edge innovations in artificial intelligence, machine learning and deep learning

Sustainable Advantage

- Highest-value combination of resolution, accuracy, and revisit
- Differentiated solutions through innovative constellation, ground and analytics platform
- Next generation constellation will extend competitive advantage while reducing capital intensity

Compelling Financial Profile

- Highly recurring revenue (80%+) with strong operating leverage
- Track record of organic growth combined with successful investments
- Substantial free cash generation from business scale with improving capital intensity

Veteran Team of Proven Innovators

- Seasoned executive team with unique mix of industry expertise and customer credibility
- Deep roster of industry pioneers and technology experts







# 2018 INVESTOR DAY

# Radiant Solutions

Tony Frazier



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# **Services Overview**

#### **Key Business Metrics**

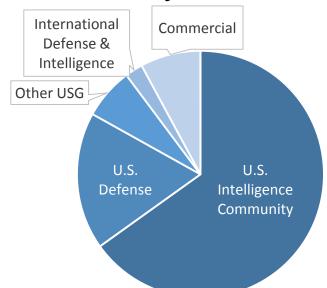
2018E \$289M in Revenue 12% Organic Growth

12% Adjusted EBITDA Margin

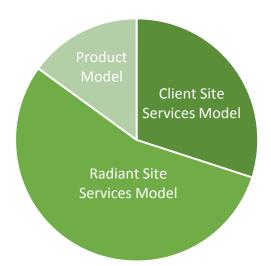
- **Unique Talent:** 1,000 cleared developers, analysts, and data scientists
- Strong Prime Contracts: 84 prime vehicles drive 63% of our revenue
- Robust Funded R&D: Over \$100 million per year of funded R&D
- Unique Technology: 65 active patents and SBIR Phase III Data Rights
- Commercial Velocity: Dozens of deployments on AWS and NVIDIA

#### **Revenue Mix**

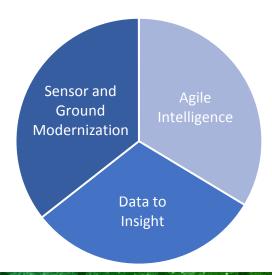
#### **Sales by Customers**



## **Sales by Business Models**



#### **Sales by Lines of Business**



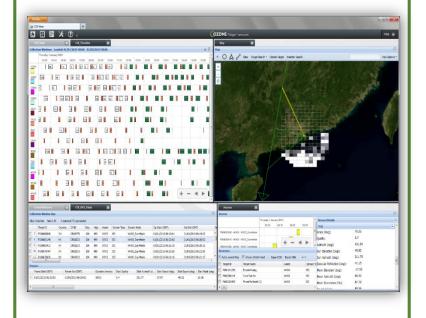




# We are Revealing Insights<sup>™</sup> where and when it matters



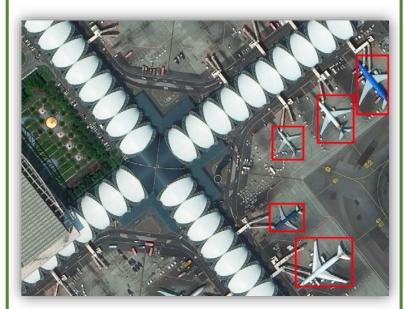
BlueGround



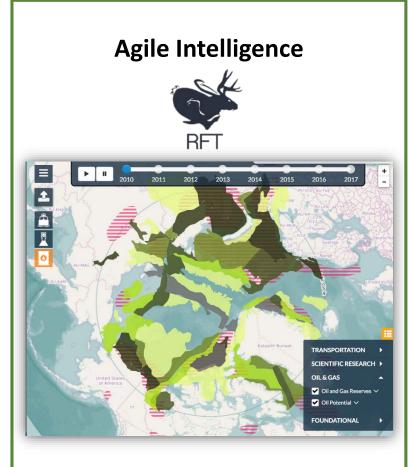
Tap into persistent sensors ...

## **Data To Insight**





Enrich and analyze data at scale...



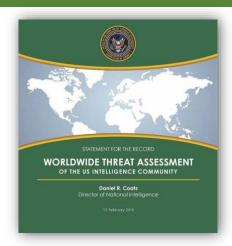
Answer intel questions faster...





# Technology is creating massive opportunities and threats for our national security customers that we are uniquely positioned to address

#### **Our Nation Faces Many Threats**





#### **Leaders Recognize The Need to Change**

"Advances in automated processing, the GEOINT tradecraft, human-machine collaboration, and the ability to anticipate behaviors has opened up the possibility of a paradigm shift in how we operate. This is a game-changer, and to capitalize on this revolution, NGA must succeed in and with the open."

**NGA Director Robert Cardillo** 

#### **Emerging Technology Trends**

**Ubiquitous Sensors** that collect optical and radar imagery offer increased persistence creating demand for modern ground systems to orchestrate multisource collection and data management.

**Cloud Computing** infrastructure from Amazon and NVIDIA has made it cost effective to store, process, analyze, and share massive amounts of geospatial data on government and commercial clouds.

**Machine Learning** advances particularly in the area of computer vision has created an opportunity to automatically extract info from optical and radar imagery that requires manual interpretation today.

**Big Data Analytics** enabling open source software has created an opportunity to build applications that discover patterns in time and space to enable anticipatory intelligence.

**Crowdsourcing** enabled through collaborative mapping applications has enabled us to tap into a large network of volunteer and paid talent to create an on-demand workforce.





# Services growth drivers

# Capture Large U.S. Government Programs

- Many opportunities with machine learning, big data analytics and cloud computing requirements
- Customers want to fuse commercial data with government sources to gain new insights
- Qualified pipeline of USG pursuits exceeds \$2B in potential contract value

# Commercialize Funded R&D

- We generate over \$100M per year of funded R&D
- Many of our applications are broadly deployed in Amazon Web Services
- We are combining unique data and cloud applications to deliver GEOINT as a Service
- USG customers are open to new business models

# Increase Velocity of Cross Sell Across Maxar

- Maxar has over 30
   International D&I
   customers for imagery and ground stations
- Increased demand across imagery customers for data analytics
- Teaming internally to bundle Radiant capabilities with other Maxar products





# NGA foundation GEOINT transformation opportunity

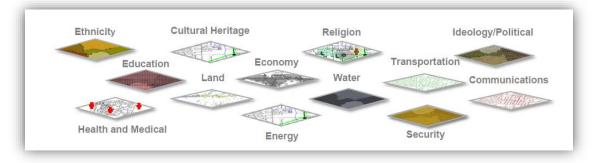
**Customer Mission** 



# **Customer Requirements**



Director Robert Cardillo
Hearing before the
U.S. Senate Select
Committee on Intelligence
September 2016



## **Emerging Foundation GEOINT Initiatives**

- CIBORG: Enables NGA and its mission partners to purchase commercial data, information, and analysis via the GSA Schedule
- Janus Geography: Robust unclassified production environment for Foundation GEOINT interoperable with classified networks
- NSG Open Mapping Enclave: Open source collaborative mapping environment where "every warfighter is a collector"

Combined Radiant Solutions Capabilities

Leverage High Revisit Sensors

Discover Change Indicators Automate Feature Extraction

Crowdsourced
Data Enrichment

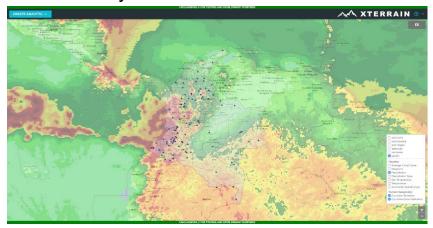
Living Maps and Dynamic Data Analytics



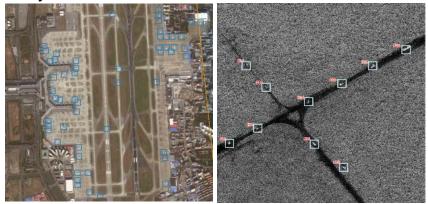


# Radiant Solutions is commercializing our capabilities

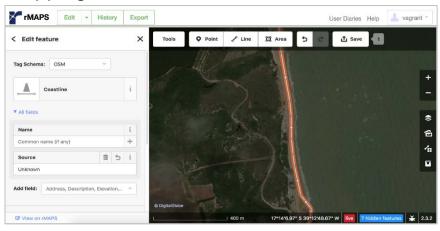
Terrain Analytics as a Service



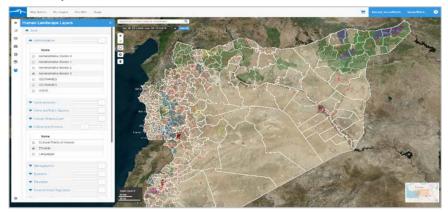
Object Detection as a Service



#### Mapping as a Service



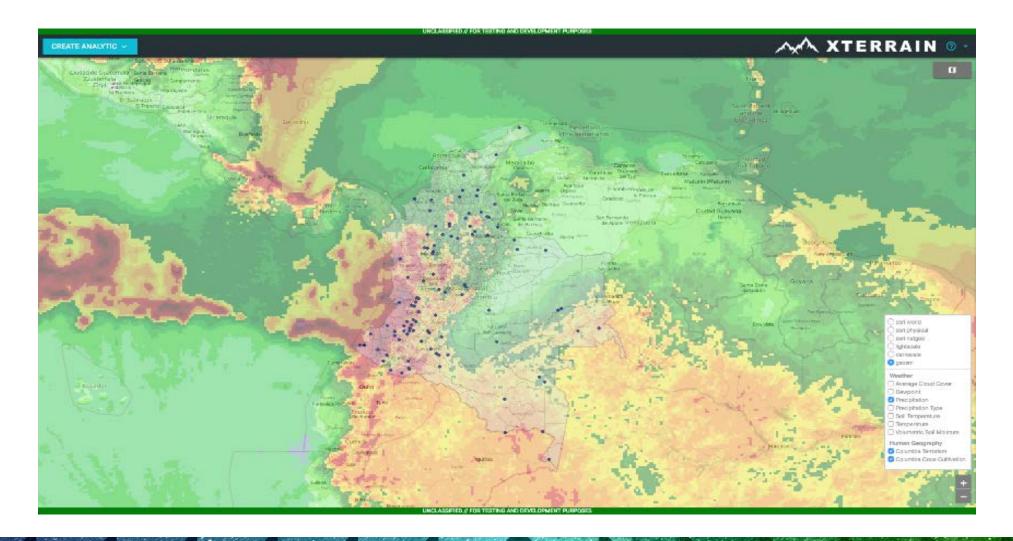
#### Geospatial Data as a Service







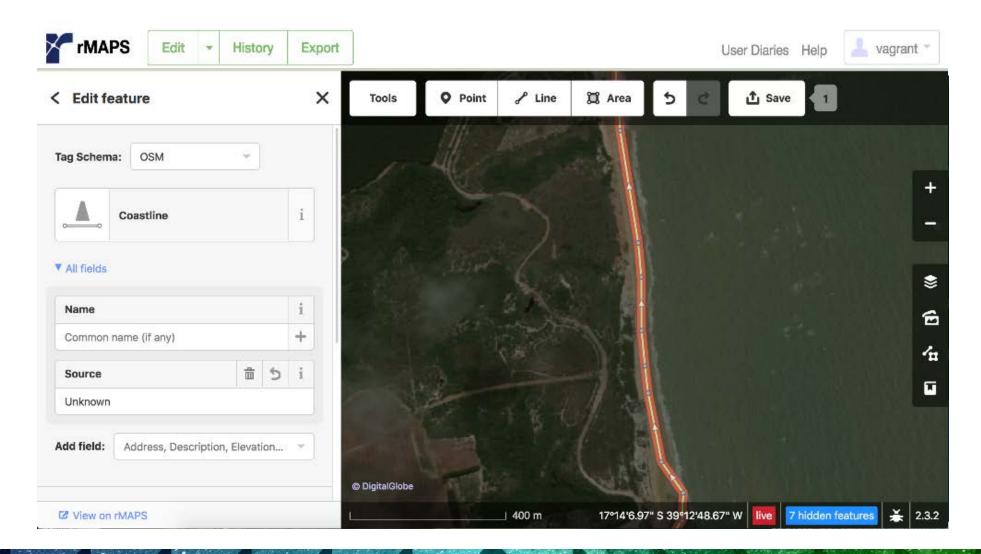
# Revealing the Safest Route to Avoid Poor Weather and Conflict







# Revealing Where Mapping Data Is Not Current or Complete

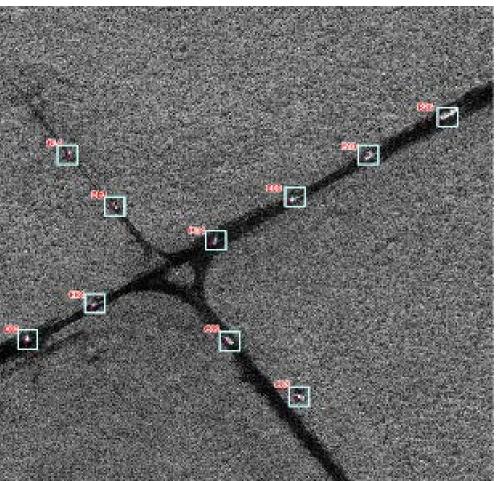






# Revealing Patterns of Life Embedded in Imagery

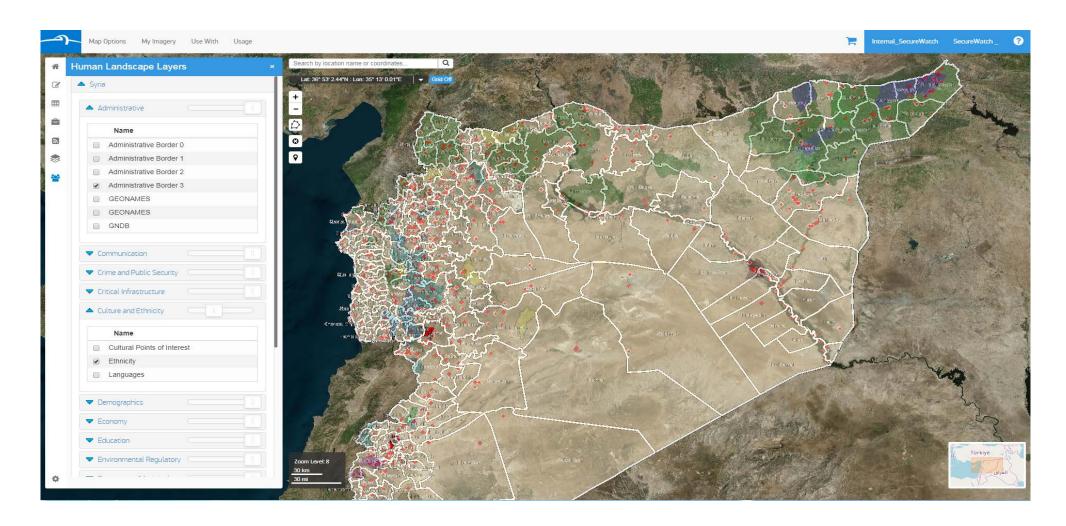








# **Revealing Where to Focus Imagery Analysis**







# **Services summary**

- Radiant Solutions is positioned to become the unquestioned leader in geospatial services that attracts, develops, and retains the best talent in our industry
- We will drive strong organic growth across the U.S. IC and DoD by delivering transformative capabilities across the entire geospatial intelligence cycle
- We will focus internal R&D on capabilities that help our customers apply commercial offerings from across Maxar to critical national security missions
- We will harvest our portfolio of government funded R&D to commercialize solutions that fuel growth and expand margins by offering Radiant as a Service
- We will leverage DigitalGlobe and MDA global imagery and ground channels to drive growth across International D&I and other strategic customer adjacencies



