



Growth Opportunities in Global UAV Market

PRESENTED BY

Lucintel

DATE

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Market Intelligence + Growth Consulting + Opportunity Screening + M&A Due Diligence + Benchmarking = **Your Company's Growth.**

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Executive Summary

- **Global UAVs market was estimated at ~\$15 B in 2020 and this market is expected to at >10% CAGR in the next six years to reach >\$24 B opportunity in 2025**
 - By Application: Defense is the largest application segment in the Global UAVs market and is likely to remain the largest market in the foreseeable future. Commercial & Civil / Government applications likely to be the fastest growing opportunities
 - By Region: North America is the largest spender on UAVs in the global market with more than 30% share, followed by APAC
 - By Material: Composites usage likely to grow at >15% CAGR (2020 – 2025) in the global UAVs market. Fixed wings to grow consistently, while rotary wings at double digit CAGR
- **Major challenges for UAVs are stringent regulation and lack of infrastructure, including traffic management, remote ID, charging and unloading stations.**
- **UAVs are used by companies in oil and gas, construction, metals and mining. Agriculture, healthcare, insurance, infrastructure and property management also have good potential but used minimal currently**
- **To strengthen position in this market, companies can target Beyond Visual Line Of Sight Flights (BVLOS), artificial intelligence, improvement in battery technology to provide more endurance & agility, and can focus in Civil, HALE, andUCAV Segments**

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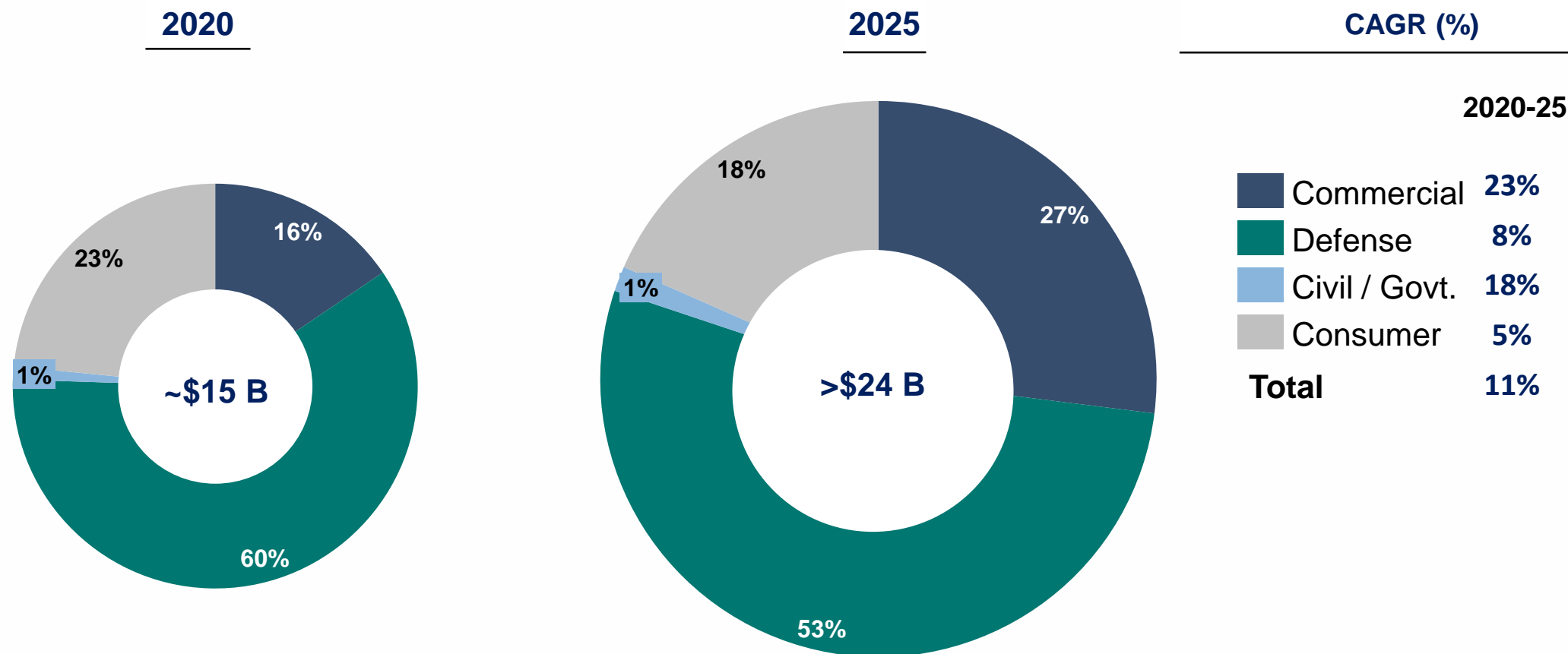
Commercial & Civil Applications are Expected to Grow at >20% CAGR (2019 – 2025), while Defense / Military UAVs Likely to Grow at ~8% in the Next Six Years

UAV Segments	Market Forecast (20 - 25)	Future Outlook	Major Players
Commercial		<p>UAVs demand in commercial applications likely to surpass consumer UAVs market by 2025. Agriculture, aerial photo & videography, mapping & surveying are key contributors to market growth</p>	
Defense / Military		<p>Defense / Military is the largest application segment in the global UAV market. Increasing military expenditure is the key driver for the growth of UAVs.</p>	
Civil / Government		<p>There has been a growing trend toward the usage of UAVs in Civil applications, mainly in areas of relief & rescue operations, border patrolling</p>	
Consumer		<p>Consumer drones have become a mature market, but still offers considerable room for growth, mainly from hobbyist. Market is expected to grow at >5% CAGR 2020 - 2025</p>	

Source: Lucintel

Defense will Continue to be Largest Application in the Global UAV Market, while Civil / Govt. and Commercial Segments offers Fastest Growth

Global UAV Market by Application 2020 to 2025



Source: Lucintel

UAVs are Used for a Variety of Applications. Commercial & Defense are the Key Application Segments



- Unmanned Aerial Vehicles (UAVs) are remotely piloted or self-piloted aircraft that can carry cameras, sensors, communications equipment or other payloads
- UAVs are smaller than manned aircraft and therefore more easily and more cost-effectively stored and transported
- UAVs make significant contributions to the fighting capability of operational war forces

Segments	Applications	Strength of UAVs
Commercial	<ul style="list-style-type: none"> • Aerial Photography • Film Making & Other Media Use • Surveying and Mapping • Product Delivery • Infrastructure Monitoring • Precision Agriculture • Public Safety 	<ul style="list-style-type: none"> • Remote Sensing • Load Carrying Capabilities • Precision Cameras & Sensors • Communication Technology • GPS
Defense	<ul style="list-style-type: none"> • Intelligence, Surveillance, and Reconnaissance (ISR) • Combat Capable • Battle Damage Management 	<ul style="list-style-type: none"> • Missile Capabilities • Precision Cameras & Sensors • Communication Technology
Government & Law Enforcement	<ul style="list-style-type: none"> • Disaster Relief, Humanitarian Operations, Rescue Operation • Border Surveillance & Patrolling • Traffic Management • Police Operations & Investigations • Maritime Security 	<ul style="list-style-type: none"> • Precision Cameras & Sensors • Communication Technology
Consumer	<ul style="list-style-type: none"> • Recreational Purpose 	<ul style="list-style-type: none"> • Precision Cameras

Major Industry Players are Working on to Increase the Operational Capabilities of UAVs, enabling it to Carry High Payload and to Travel Long Distances








Types	Maximum Take Off Weight (Kg)	Maximum Flight Altitude (M)	Endurance (Hours)	Applications	Platforms
Micro/Mini UAVs	<30	150-300	<2	Scouting, agriculture, surveillance inside buildings, etc.	Black Widow, Homet, MicroStar, Aladin, Pointer II, AeroVironment RQ-11 raven, etc.
Tactical UAVs (CR, SR, MR, LR, EN, MALE)	150 – 1,500	3,000-8,000	2- 48	Mine detection, search & rescue, BDA, RSTA, EW etc.	Hunter, Skyforce, Phanytom, Predator, Eagle, US Shadow, French Sperwer, etc.
Strategic UAVs (High Altitude Long Endurance)	2,500-12,500	15,000-20,000	24-48	BDA, RSTA, EW, airport security, etc.	Global Hawk, Raptor, Condor, EuroHawk, etc.
UCAV	550-21,000	Up to 13,000	2-24	Anti-radar, aerial & naval deception, etc.	X47B, X-45C/D, Tarani

Notes: Close Range (CR), Short Range (SR), Medium Range (MR), Long Range (LR), Endurance (EN), Medium Altitude Long Endurance (MALE), Reconnaissance, Surveillance, and Target Acquisition (RSTA), Battle Damage Assessment (BDA), Electronic warfare (EW)

Majority of the UAV Applications across Segments are in Growth Stage, while Some Applications, such as Photo & Film Making and Recreational UAVs are at Mature Stage

Segment	Application	Nascent Stage	Growth Stage	Mature
Commercial	Aerial photography			✓
	Construction and real estate images and monitoring		✓	
	Infrastructure monitoring		✓	
	Mail and small package delivery	✓		
	Filmmaking and other media uses			✓
	Oil and gas exploration		✓	
	Precision agriculture		✓	
Civil / Govt.	Public safety		✓	
	Weather forecasting and meteorological research		✓	
	Wildlife and environmental monitoring		✓	
	Emergency management		✓	
Civil / Govt. /Defense	Border & Maritime patrol		✓	
Defense	Intelligence, Surveillance, and Reconnaissance (ISR)		✓	
	Battle Damage Management		✓	
	Combat Capable		✓	
Consumer	Recréational Purpose			✓

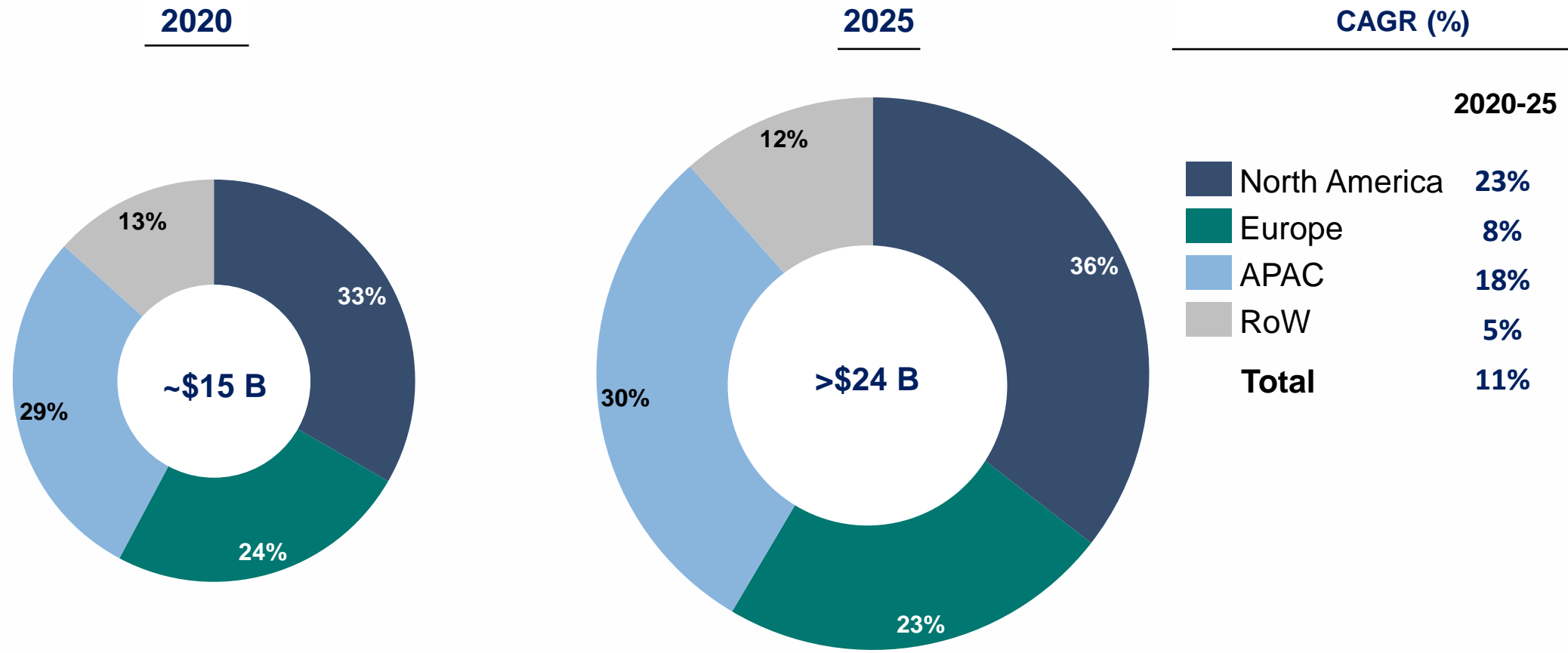
By Region: North American UAV Market is Likely to Grow at ~12% CAGR in the Next Five Years, followed by APAC with >10% CAGR (2020 – 2025)

UAV Segments	Market Forecast (20 - 25)	Future Outlook	Major Players
North America	~12%	USA is the largest user of UAVs in the Global market, driven by high military spending and proposed budgets for UAV acquisition for military, border patrolling, maritime security, etc.	 
Europe	~9%	European countries are likely to reduce their military spending to give necessary boost to economy, likely to impact UAVs growth for short term.	 
APAC	>10%	APAC is the second largest region in the Global UAV market. Demand for UAVs in APAC is likely to grow at >10% CAGR in the next six years (2020 – 2025)	 
RoW	>5%	In RoW, Middle East countries likely to provide necessary boost to the growth of UAVs in the next five years driven by high defense spending	

Source: Lucintel

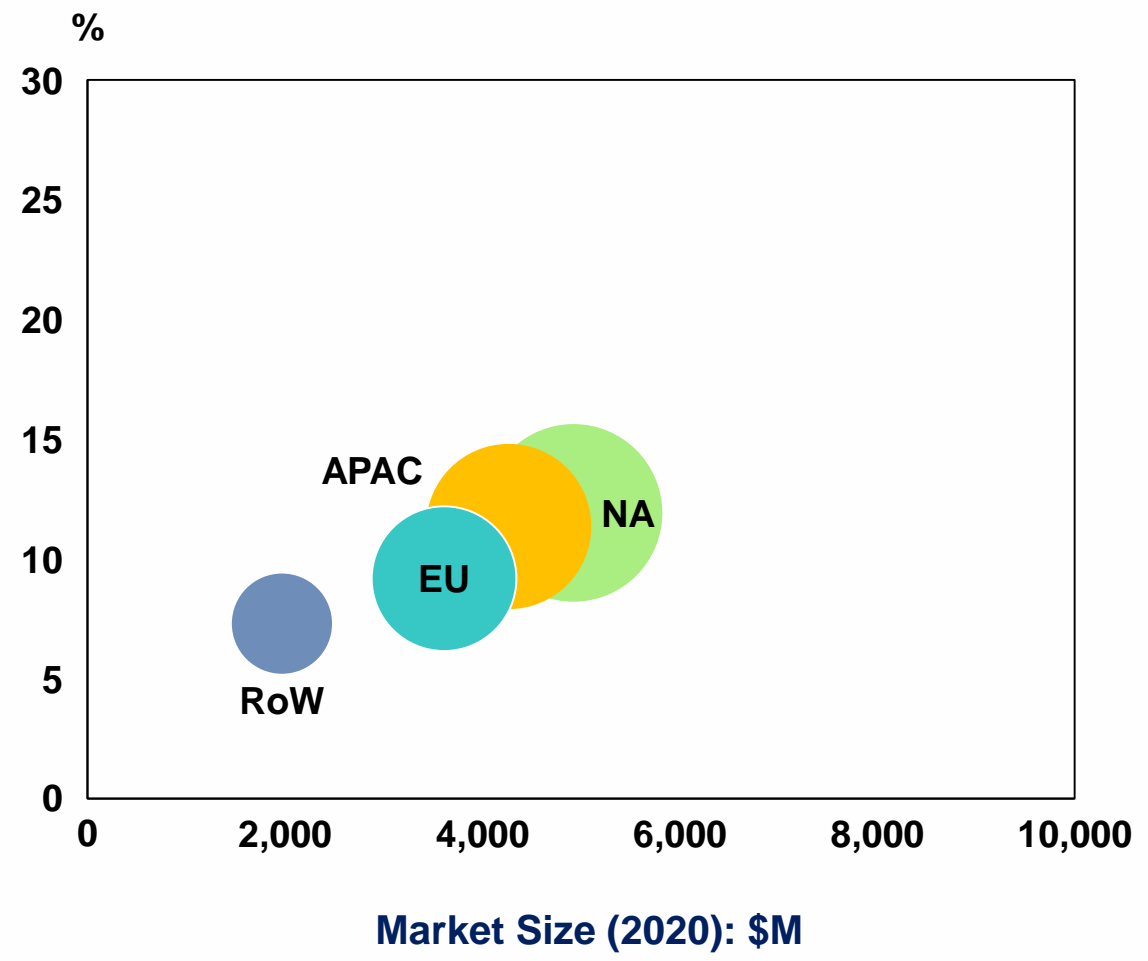
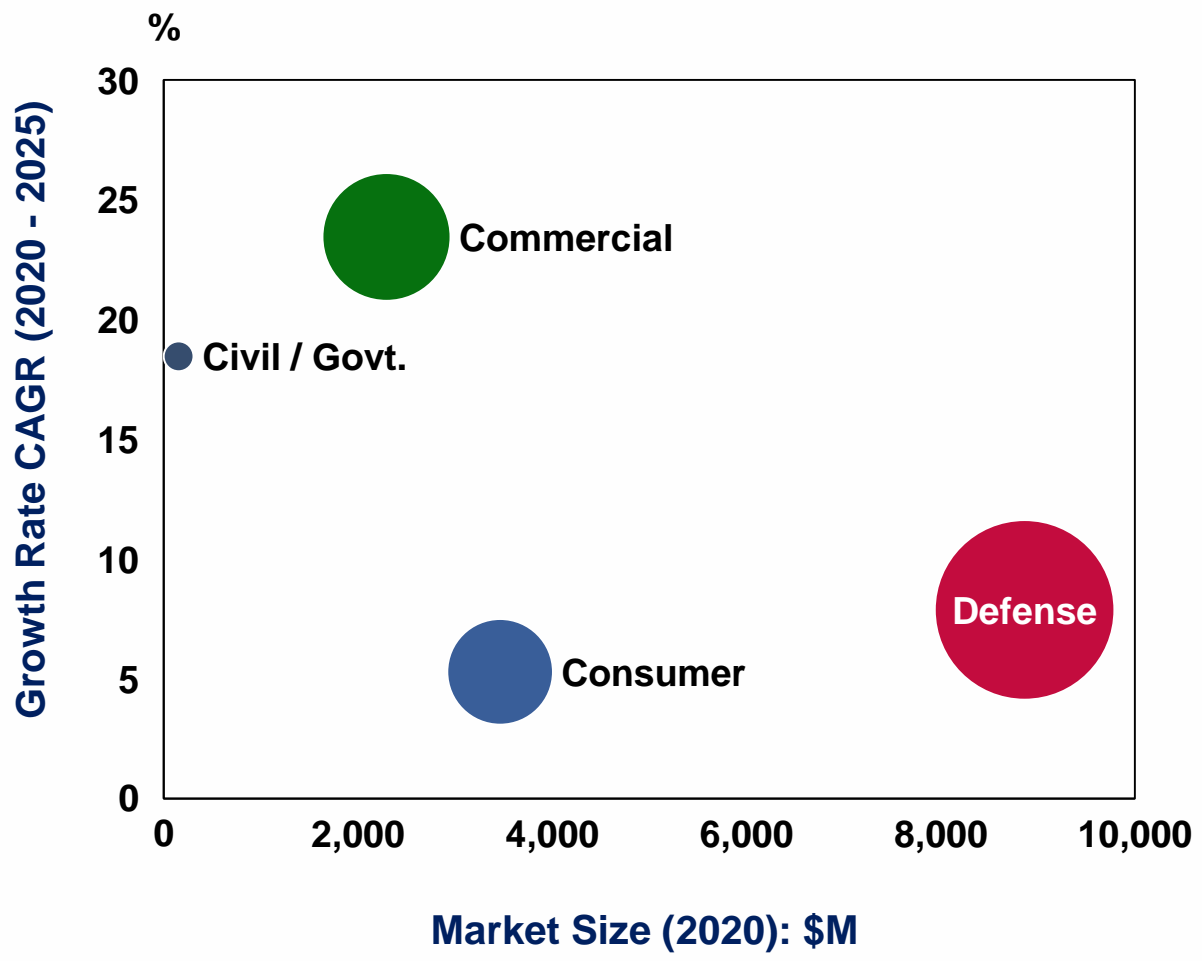
North America will Continue to be Largest Region in the Global UAV Market. APAC will remain 2nd Largest User of UAVs during the Foreseeable Future

Global UAV Market by Region 2020 to 2025



Source: Lucintel

North America & APAC will Continue their Dominance in Global UAVs Market. Defense will Likely to Remain Largest End Use Application of UAVs



Note: Bubble size represents market size in 2025

Increasing use of UAVs in Civil & Commercial Applications. Increasing Military Spending are the Major Drivers in the Global UAVs Market

Key Drivers

Increasing Use of UAVs in Civil & Commercial Applications: The global demand for UAVs in Civil and Commercial applications is expected to grow at >20% CAGR in the next five years to reach ~\$7 B by 2025

Increasing Military Spending and Growing Use of UAVs in Military Applications

Increasing Use of UAVs in Border Patrolling and Maritime Security and Counter Terrorism Operations

Technological Advancements: Use of Artificial Intelligence. Battery life improvement, ease of regulatory framework, public acceptance, and developing infrastructure likely to further drive UAVs growth

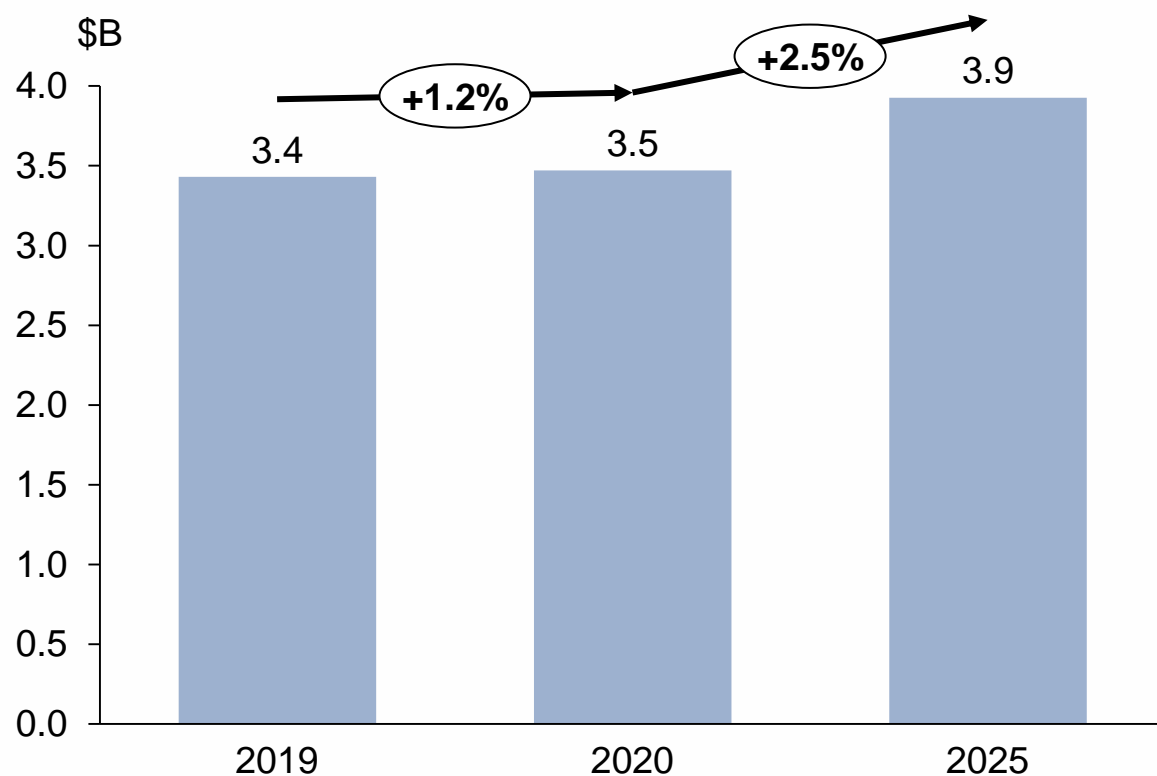
Key Challenges

COVID – 19 Impact: Military / Defense budget likely to curb to provide necessary boost to economies through out the world by ways of bailout packages or economic relief packages to bring economy back to normal, this would likely to impact UAVs market for short term.

Regulatory framework still not well developed and designed in a lot of countries, thus affecting its growth

Increasing Global Defense Spending is Likely to Provide Necessary Momentum to Military UAVs

Global Defense Spending 2019 - 2025



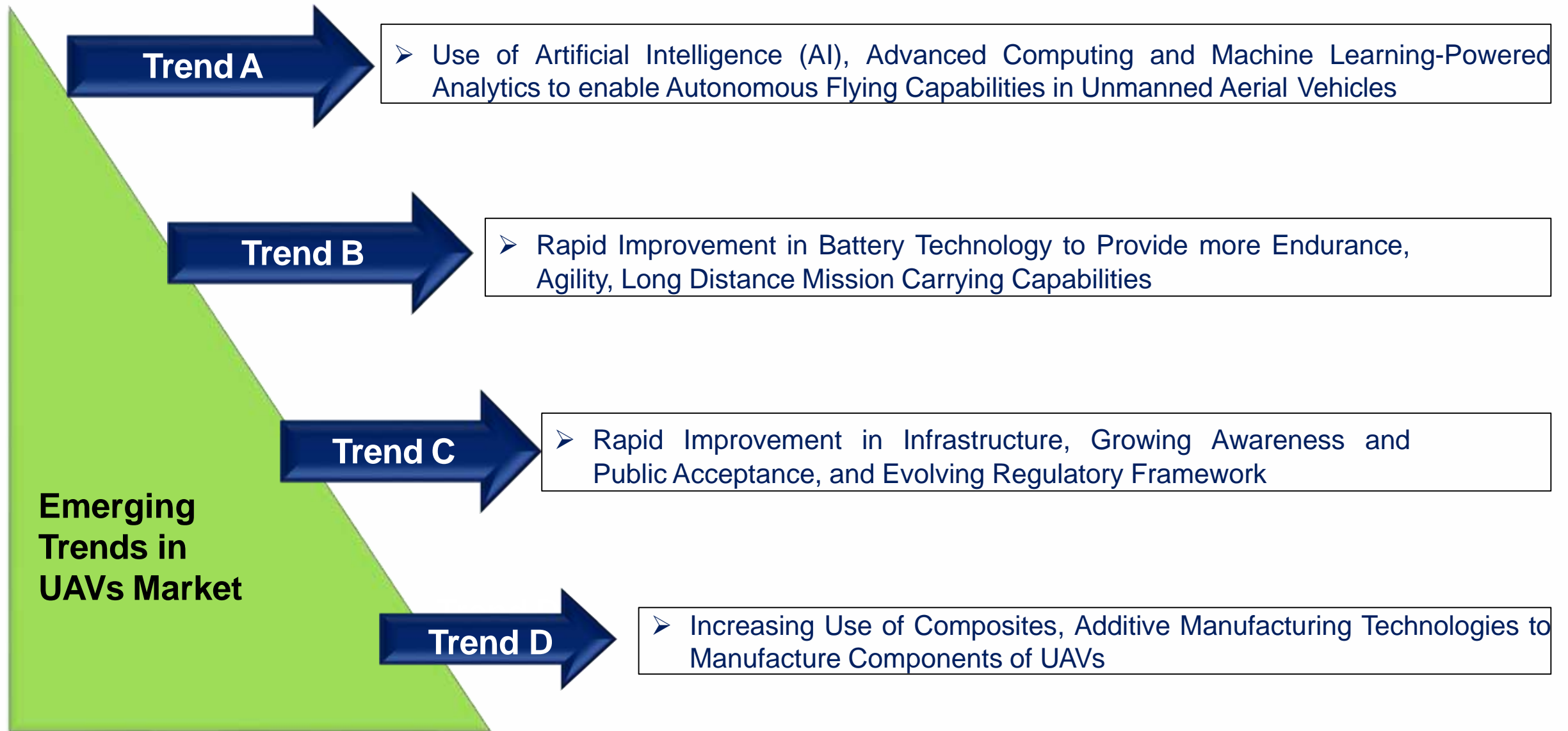
Key Insights

- In 2019, the global defense spending was approximately \$3.43 trillion, which increased marginally to reach \$3.47 trillion in 2020, according to the data from Center for Strategic and International Studies
- The global defense spending is likely to grow by 2.5% in the next five years to reach ~\$4 trillion by 2025
- Increasing defense spending is likely to boost the growth for military UAVs

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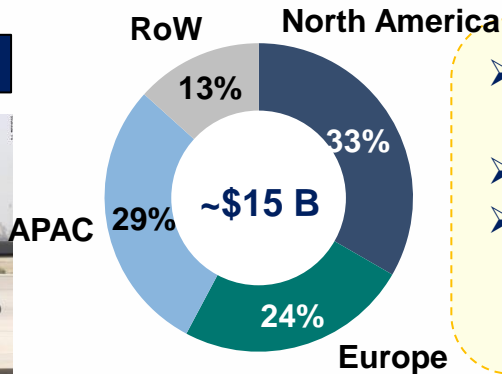
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Emerging Trends in the Global UAVs Market: Use of AI and Improvement in Battery Technology to Provide More Endurance, and Agility are Key Trends



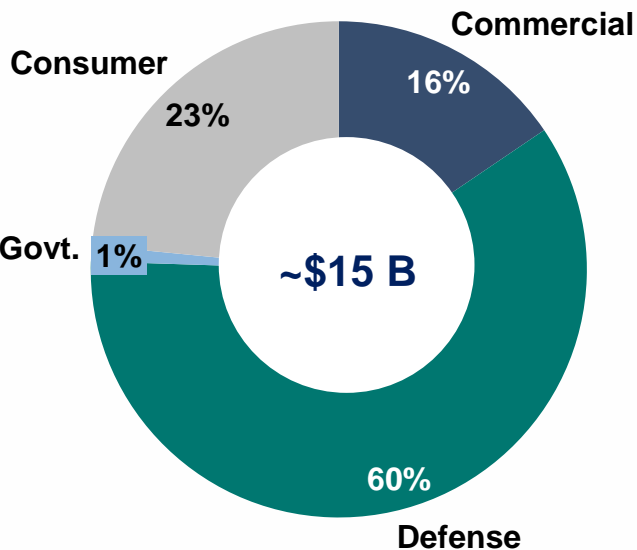
Composites Usage Likely to Grow at >15% CAGR (2020 – 2025) in the Global UAVs Market. Fixed Wings to grow Consistently, while Rotary Wings at Double Digit Growth

UAVs



- Global UAVs market is highly attractive offering significant growth opportunities
- Global UAVs market is moderately consolidated
- UAVs usage in Commercial, Civil, and Government application to have considerable growth in the next five years, while Defense and Consumer based UAVs have become mature market

Market by End Use



Future Outlook: Application

- Commercial →
- Defense →
- Civil & Government →
- Consumer →
- Total →

Future Outlook: Materials

- Composites →
- High Performance Metal & Alloys →

Future Outlook: Regional

- North America →
- Europe →
- APAC →
- Rest of the World →

Future Outlook: By Type

- Fixed Wing →
- Rotary →

Note: The above strategic perspectives summarize views obtained from primary interviews

Growth Strategies: Technological Advancement to Increase Payload and Endurance Limit, Focus in Civil, HALE, and UCAV Segments are the Major Keys for Growth

1. Technological advancement and improve mission capabilities



- Technological advancement such as increase in payload and endurance limit
- Teamed unmanned vehicle with manned system to increase mission capability

2. Focus on Civil segment of UAVs



- Demand of Civil UAVs is increasing to check for damage on road and rail bridges, monitor natural disasters, such as flooding and spray crops with pinpoint accuracy. Border & Maritime Patrolling

3. Focus on HALE (High Altitude Long Endurance), UCAV Segment



- Demand of High Altitude Long Endurance (HALE) UAVs is increasing due to high altitude and more endurances in UAV
- Capability of UCAV is more than 10 times higher than that of a UAVs

Lucintel has Strong Capability in Developing Growth Strategies for Companies in the UAVs Market

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Lucintel - At a Glance

- Premier management consulting and market research firm. Founded in 1998.
- Deep global insights into major industries. Team of over 120 analysts / consultants across globe
- Management comprised of PhDs, MBAs, and subject matter experts. Head quarter in Dallas, USA.

Conducted 500+ consulting projects across industries for 3M, Audi, Dupont, Carlyle, GE, etc.

Consulting Services



Why Lucintel

Trusted insights: Reliable insights. Widely cited in Wall Street Journal, Financial Times, Forbes, etc.

Clients we serve: Over 1000 clients from 70 countries – Fortune 500 companies

Strategic advice: Over 20 years of proven global strategic management consulting experience

Industries Served



1000+ Clients in 70 Countries Value Our Service



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