

FROST & SULLIVAN

AIR TRAFFIC MANAGEMENT

*Global Market for Air Traffic
Management Systems*

*Introduction to Frost & Sullivan's
Service Offering and Expertise*

*The Growth Pipeline Company
Powering clients to a future™ shaped by growth*

INTRODUCTION



FROST & SULLIVAN: WHO WE ARE

A LEADING RESEARCH AND ADVISORY FIRM WITH 40+ OFFICES IN 30 COUNTRIES AND 1,200+ EMPLOYEES

16,000+
Clients &
1200+
analysts Worldwide

40+
Offices
Around the World

360°
Market Coverage



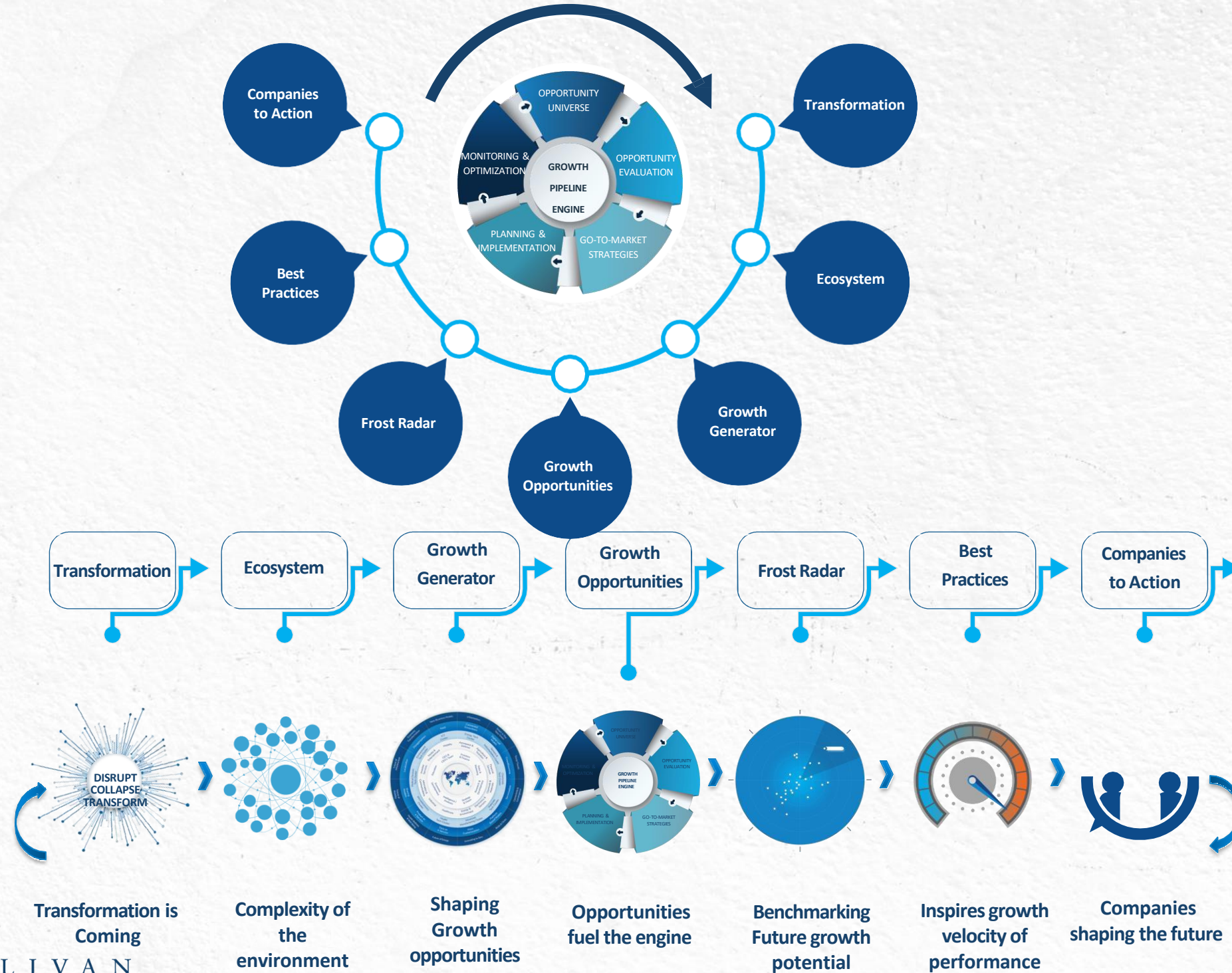
60+
Years of Experience

**Market
Engineering
Research
Methodology**

3
Tiered Growth System

TRANSFORMATIONAL GROWTH JOURNEY

POWERED BY THE FROST & SULLIVAN GROWTH PIPELINE ENGINE



HOW WE COVER INDUSTRIES, MARKETS AND TECHNOLOGIES: FROST & SULLIVAN PRACTICES

VERTICAL PRACTICES



Aerospace & Defense (A&D)



Energy & Environment (E&E)



Healthcare & Life Sciences (HLS)



Industrial (IND)



Mobility (MOB)

Supply Chain & Logistics (SCL)



Security (S)



Chemicals Materials & Nutrition (CMN)



Information Communications & Technology (ICT)



TechVision & Visionary Innovation (TV)



FOUNDATIONAL PRACTICES

PROGRAM AREAS WE COVER IN AEROSPACE, DEFENCE AND SECURITY



AEROSPACE & DEFENSE PROGRAM AREAS

Unmanned Systems



- New Business Models
- Drone Services Providers (DSPs)
- Unmanned Systems Competitor Profiles
- Counter UAS
- Advanced/Urban Air Mobility
- Competitive Analysis
- Future Outlook
- Unmanned Traffic Management

Airports & Airlines



- Global & Regional Eco-System Analysis
- Market Assessment & Growth
- Technology Alignment and Horizon Scanning
- Digitalization Priorities and Benchmarking
- Opportunity Analysis
- Operational Management

Commercial Aerospace



- Cabin Interiors
- Avionics & Electrification
- In Flight Entertainment
- All-Electric Aircraft
- Aerospace IT
- Maintenance, Repair & Overhaul (MRO)
- Aircraft Interiors
- Air Traffic Management
- Sustainability

Defense



- Defense Innovation
- Technology Development & Localization/ Indigenization
- C6ISR
- Simulation & Training
- Air and Missile Defense
- Defense Platform Markets
- Future Capability Markets
- Advanced Weapons & Sensors
- Camouflage, Concealment & Deception
- Multi Domain Warfare

Space



- Innovations & new Business Models
- Digital Data Services
- Space Industry profiles
- NewSpace Investigations
- Market Opportunity Assessments
- Competitive Analysis
- Future Outlook

**AIR TRAFFIC MANAGEMENT
SAMPLE WORK & CAPABILITIES**



ATM ECOSYSTEM OVERVIEW

MULTIPLE STAKEHOLDERS ARE INVOLVED IN ATM – F&S HAS MAPPED THE GLOBAL ATM ECOSYSTEM

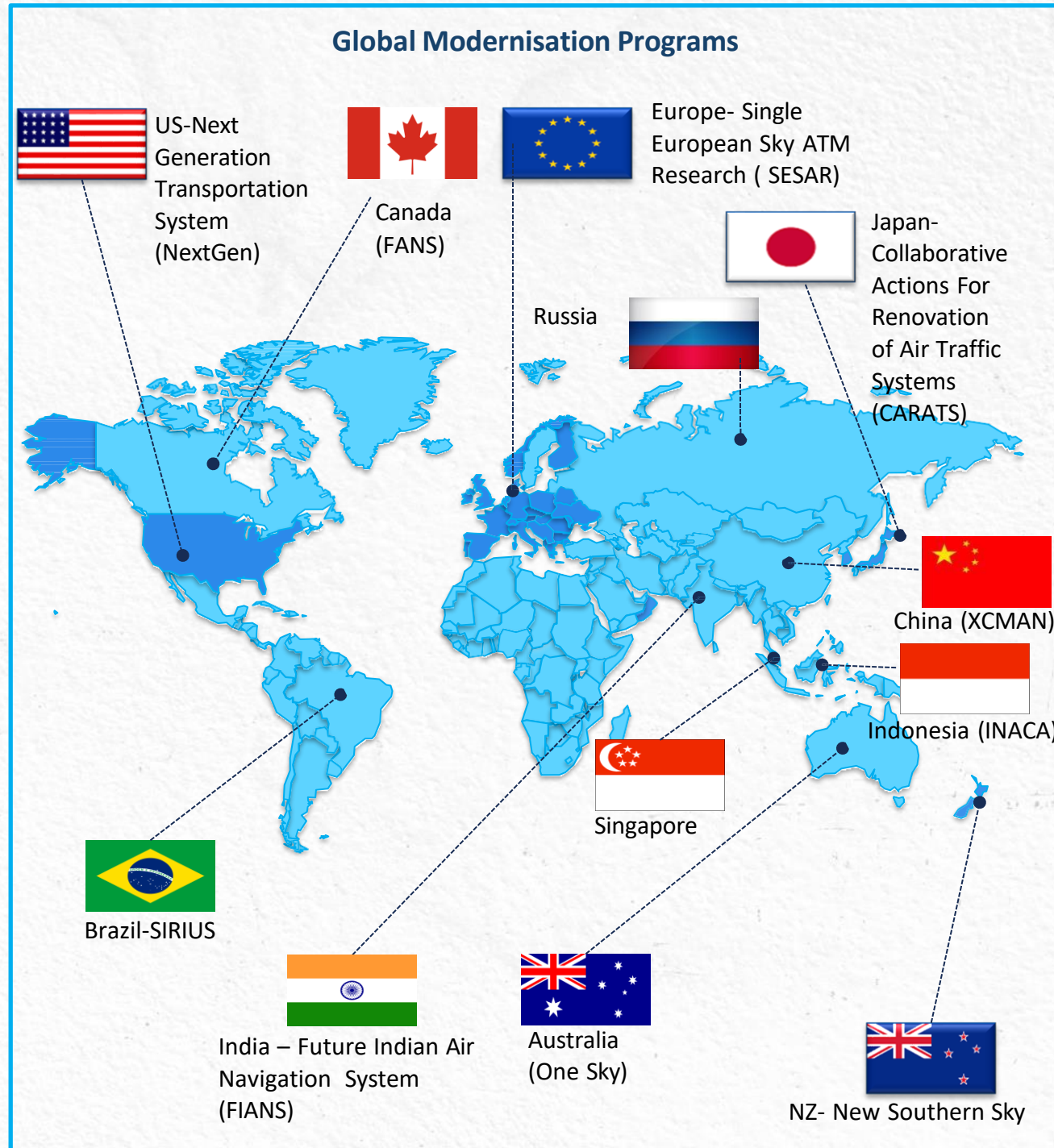
Non-Exhaustive Illustrative Sample



GLOBAL ATM/ UTM PROGRAMS

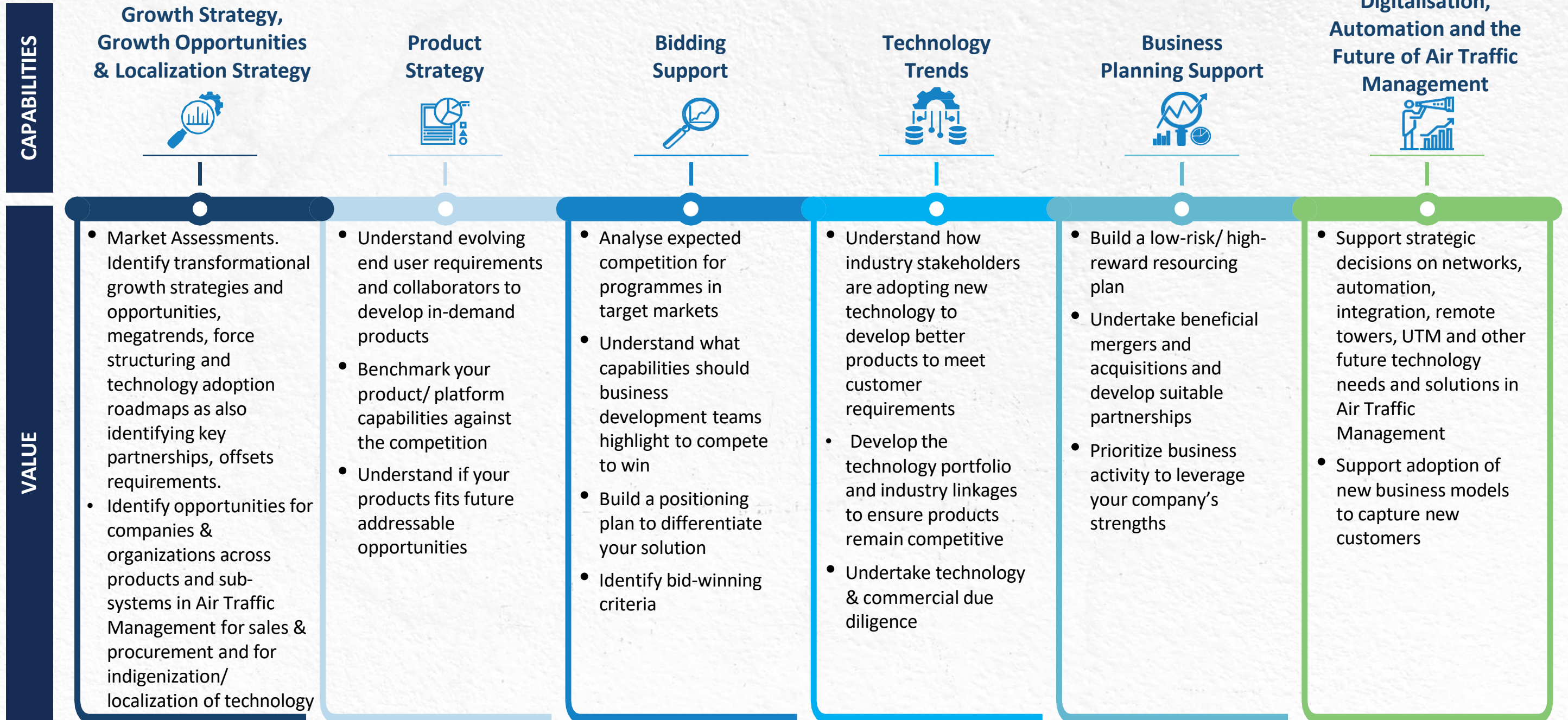
VARIOUS ATM MODERNISATION AND UTM DEVELOPMENT PROGRAMMES ARE UNDERWAY

Non-Exhaustive Illustrative Sample

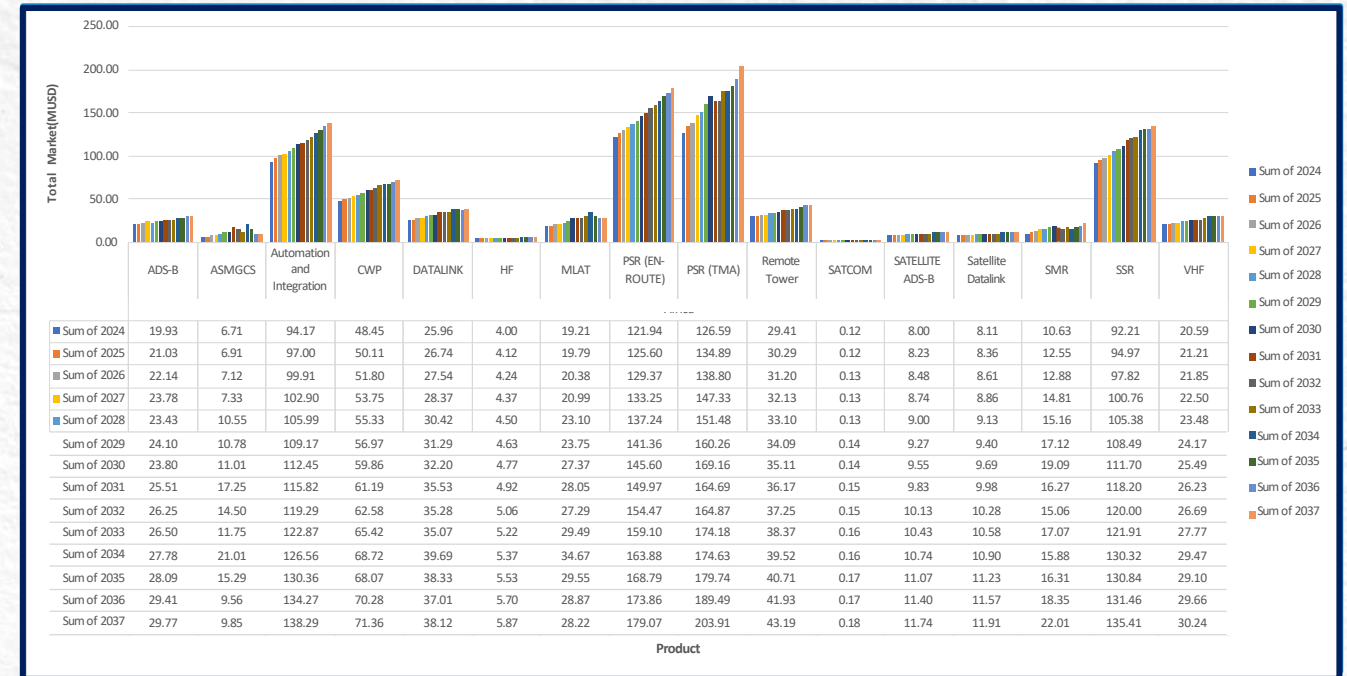
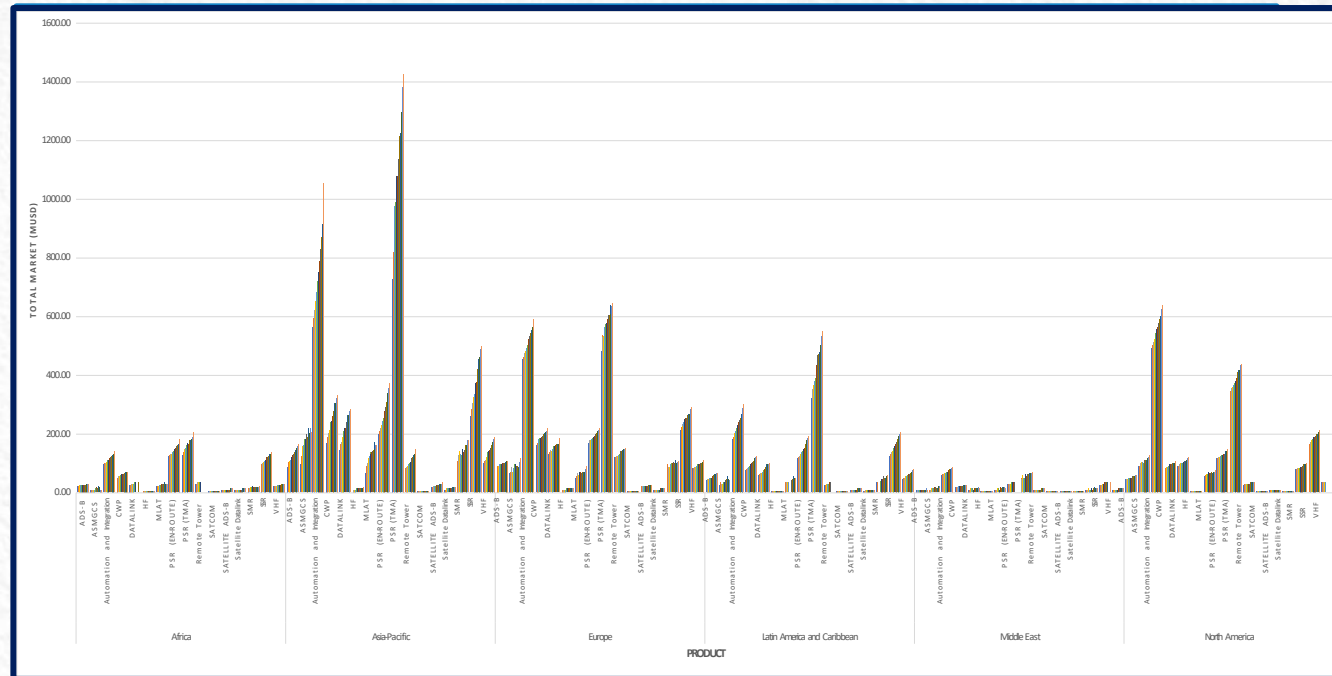


WHAT FROST & SULLIVAN CAN DO FOR YOU

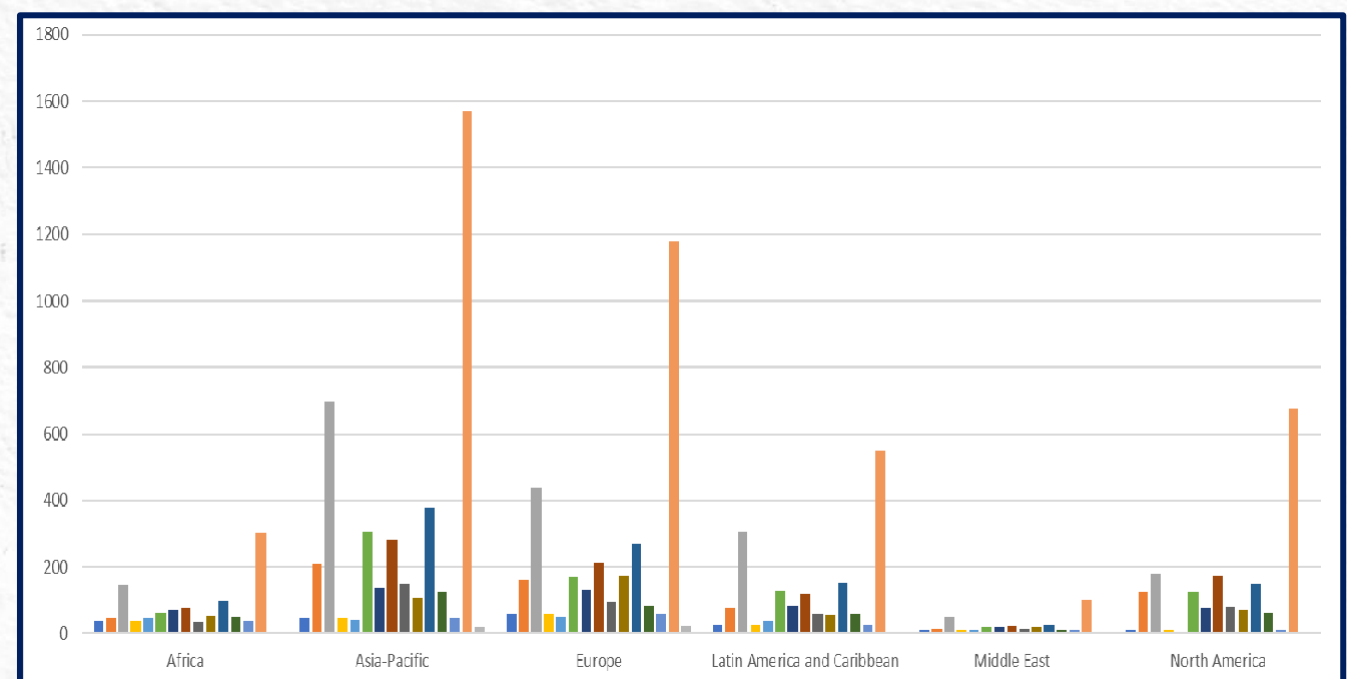
GROWTH EXPERTS WITH PROFOUND MARKET EXPERTISE



IDENTIFY CURRENT AND FUTURE MARKET SIZE AND OPPORTUNITIES TO CREATE GROWTH STRATEGIES















2023	2027	2032	2037	2042	2047	2052
United States	United States	United States	China	China	China	China
China	China	China	United States	United States	United States	United States
India	India	India	India	India	India	India
Spain	Japan	Spain	Indonesia	Indonesia	Indonesia	Indonesia
United Kingdom	Spain	Japan	Spain	Spain	Spain	Spain
Japan	United Kingdom	United Kingdom	Japan	Japan	Turkey	Turkey
Turkey	Turkey	Indonesia	United Kingdom	Turkey	Japan	Japan
Brazil	Russian Federation	Turkey	Turkey	United Kingdom	United Kingdom	United Kingdom
Italy	Indonesia	Russian Federation	Russian Federation	Russian Federation	Thailand	Thailand
Germany	Germany	Brazil	Brazil	Thailand	Russian Federation	Vietnam
Mexico	Brazil	Germany	Thailand	Vietnam	Vietnam	Mexico
France	Italy	Italy	Germany	Mexico	Mexico	Russian Federation
Indonesia	Mexico	Thailand	Mexico	Brazil	Brazil	Brazil
Russian Federation	France	Mexico	Italy	Italy	Italy	Philippines
Canada	Thailand	France	Vietnam	Germany	Germany	Italy
Australia	Korea	Vietnam	France	Korea	Philippines	Korea
Korea	Canada	Korea	Korea	France	Korea	Australia
United Arab Emirates	Australia	Australia	Australia	Australia	Australia	Germany
Thailand	Vietnam	Canada	Canada	Philippines	France	France
Vietnam	United Arab Emirates	United Arab Emirates	United Arab Emirates	United Arab Emirates	United Arab Emirates	United Arab Emirates



EVALUATE MARKET ATTRACTIVENESS ALIGNED TO YOUR BUSINESS AND SALES REQUIREMENTS

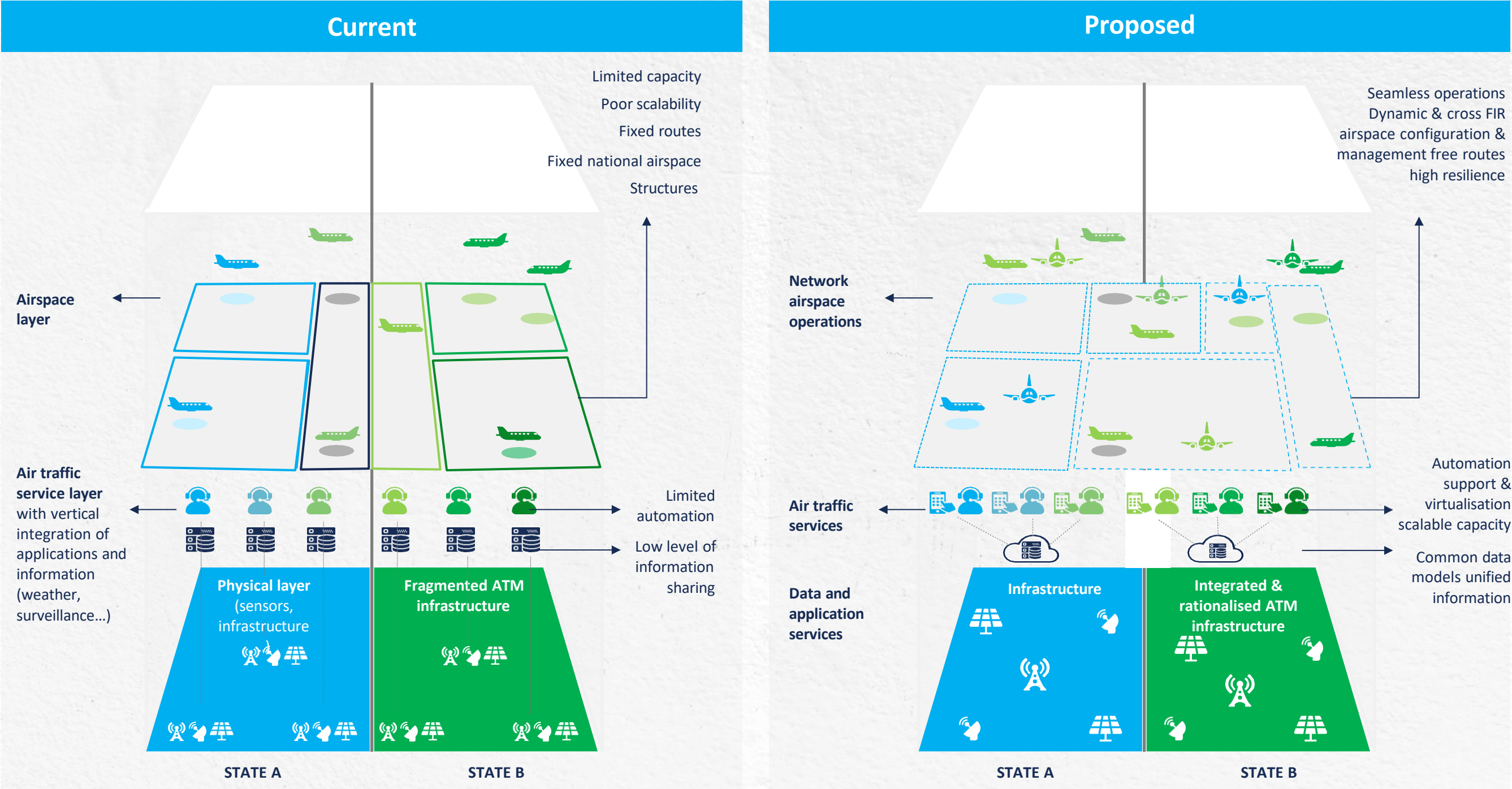
Illustrative Sample

Country 	Opportunity Attractiveness 	Key Opportunity Areas 			
		IATS	CDM	A-SMGCS	Digital/Remote
Australia 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Brunei Darussalam 		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hong Kong 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
India 		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Indonesia 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Malaysia 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New Zealand 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Philippines 		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Singapore 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thailand 		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ASSESSMENT OF REGULATORY TRENDS AND REQUIREMENTS

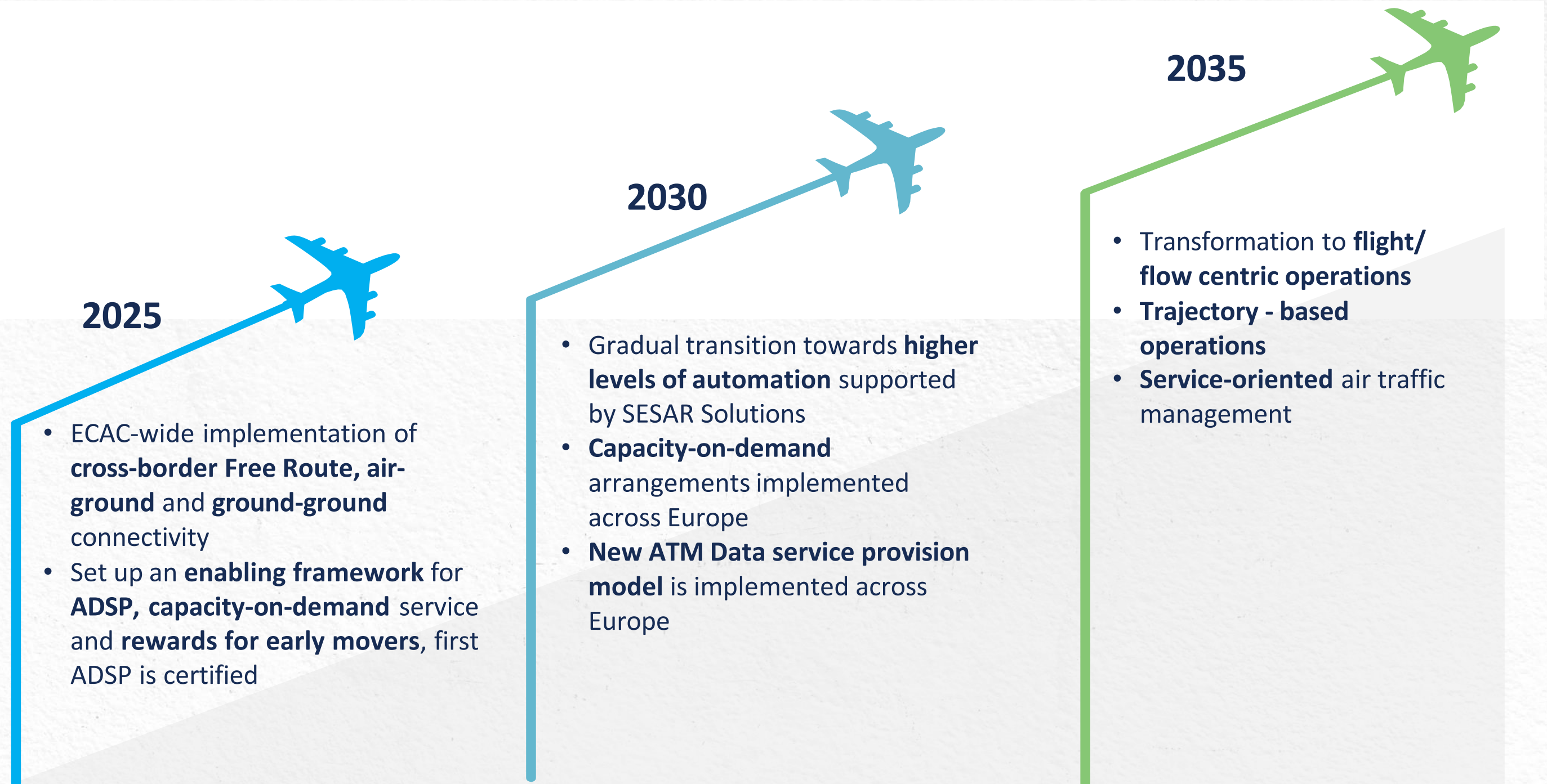
VARIOUS REGULATORY REQUIREMENTS CREATE BARRIERS TO ENTRY THAT FROST & SULLIVAN CAN IDENTIFY AND RESOLVE

Non-Exhaustive Illustrative Sample



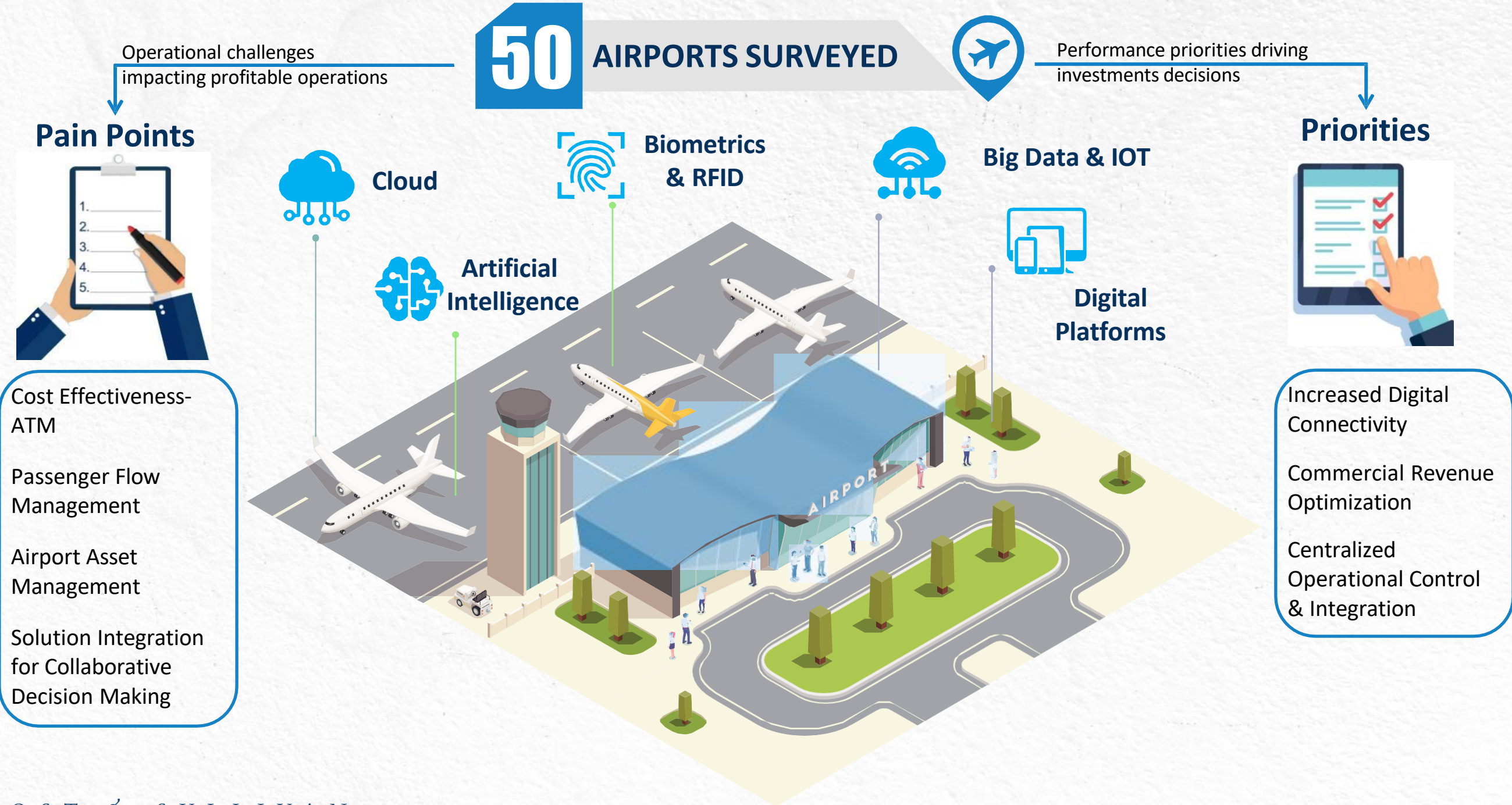
ANALYSE AND IDENTIFY NEW OPPORTUNITIES

Non-Exhaustive Illustrative Sample



UNDERTAKE SURVEYS TO UNDERSTAND USER REQUIREMENTS

NON – EXHAUSTIVE ILLUSTRATIVE SAMPLE



CASE STUDIES



GLOBAL MARKET GROWTH OPPORTUNITY ANALYSIS FOR CNS EQUIPMENT USED FOR ATM

The Client: A leading major global Aerospace & Defence company supplying CNS Equipment globally

THE CHALLENGE



- The client wanted a detailed view of the global market opportunities and market size for 16 different Communication, Navigation and Surveillance(CNS) equipment used for Air Traffic Management(ATM). The client also wanted to appreciate its competition, and the key bid winning criteria for CNS equipment tenders. Multiple stakeholder requirements, financials and variables impact the ATM market with a high level of ambiguity due numerous factors/ variables that made the analysis extremely challenging given also the global mandate.

PROJECT OBJECTIVES



- Understand the current and future market and product needs.
- Competition Analysis.
- Identify the total market size for different CNS products for various global regions and markets.
- Develop a strategy for market growth in different regions and countries

OUR APPROACH & WORK



- Frost & Sullivan developed unique methodologies after new primary and secondary research to establish the key future end user requirements and opportunities.
- Significant qualitative and quantitative analysis was undertaken of various factors including the political, economic, social, technological, legal and aviation environment to identify opportunities and challenges.
- Competitors and their product offerings in each region/ country were identified
- Key aspects of importance for CNS market growth opportunities, trends were identified and analysed.
- Future market requirements were established through detailed studies.
- Almost all countries of the world were analysed for their attractiveness on a large number of important parameters before detailed market sizing for all regions and countries was undertaken.
- Based on the detailed qualitative and quantitative findings, high level strategies were developed for market growth



OUTCOME AND BUSINESS IMPACT

F&S provided the client with valuable insights detailing the entire market for CNS equipment by region and by countries specified. Several key recommendations were highlighted to provide the client with strategic planning for market growth, including partnership opportunities and business model considerations.



MARKET ENTRY IN THE TERMINAL AIR NAVIGATION & TRAINING SERVICES MARKET

The Client: A major ME Air Navigation Service Provider

THE CHALLENGE



- The client was planning to enter the market for provision of Terminal Approach Navigation Services(ANS) in Europe, ME and APAC, and also wanted to build a strategy for offering training and consultancy services in ME, Europe, SE Asia, and S Asia

PROJECT OBJECTIVES



- Identify upcoming opportunities in provision of Terminal Air Navigation Services in Europe, ME and APAC
- Identify impact of ICAO, regional and local regulations on the market
- Develop a competitive strategy for entering the market including likely contract prices, margins, and competitive landscape
- Develop a checklist for actions in taking over ANS services from outgoing contractor
- Explore opportunities and strategy for adjacent ANS services of training and consultancy
- Identify current and upcoming opportunities in Training
- Recommend organizational changes, partners for M&A, and other considerations for tapping the market

OUR APPROACH & WORK



- Frost & Sullivan leveraged in-house expertise acquired by previous projects including the market information needed for building a bottom-up analysis of current and upcoming opportunities in provision of ANS, training, and consultancy including competitive landscape. Main deliverables were :
- Total opportunity size
 - Attractive Markets and segments
 - Regulatory landscape and effect on market
 - Contract prices and expected margins
 - Competitive landscape
 - Strategy for market entry including country wise recommendations
 - Organisational changes to enable market entry
 - M&A targets identification
 - Consideration for taking over services provision from outgoing contractor



OUTCOME AND BUSINESS IMPACT

Frost & Sullivan identified specific growth opportunities, provided market sizing of the target markets and detailed market entry strategies. The Client incorporated F&S recommendations for its business and organizational strategy for market and vertical diversification.



MARKET ENTRY IN THE AIR TRAFFIC EQUIPMENT MARKET

The Client: An ATC OEM

THE CHALLENGE

- A software major from Japan wanted to enter the Air traffic control equipment market in the Asia Pacific. Frost and Sullivan was required to size the air traffic control equipment market across the countries, including the expected future procurements.
- Identify the most lucrative product segments and the markets.

PROJECT OBJECTIVES

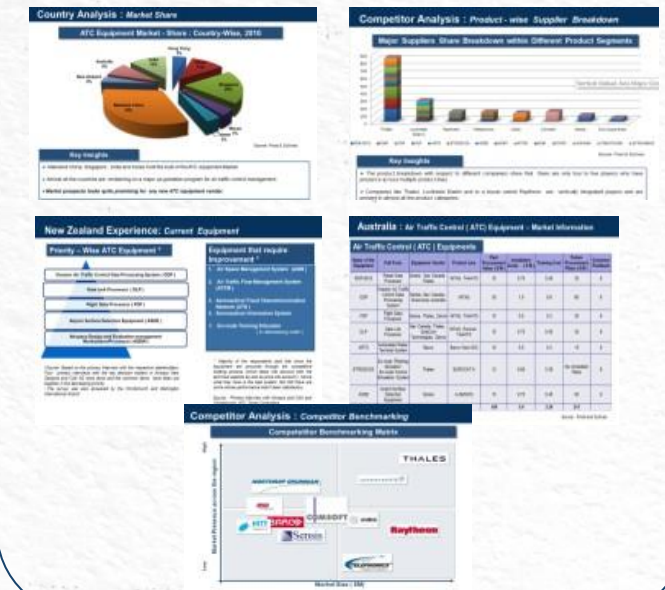
- To identify the key players in the Asia Pacific market including their market share and their product portfolio
- To estimate the future procurement plans by the respective countries, across different product segments.
- To analyze the market conditions across the individual countries, as drivers, restraints and challenges
- To suggest the product, segment and country grid across the region.

OUR APPROACH & WORK

Frost and Sullivan engaged with and interviewed multiple stakeholders across the region, including the competitors and the end-users to analyze the market, including identifying demand and supply gaps and future procurement plans. Competitive analysis helped in finding their current portfolio and their future plans across the region. F&S established the market size, identified the growth opportunities and the recommended market entry strategies.

OUTCOME AND BUSINESS IMPACT

- Frost and Sullivan delivered specific market entry strategies which helped the client in selecting the most suitable products for selling in target markets. Competitive benchmarking of suppliers and their products was also undertaken. A Go-to-Market strategy was prepared for the client. The client was very happy with the findings and is implementing our recommendations.



AIR TRAFFIC SERVICES RESEARCH & DEVELOPMENT ROADMAP FOR AIRPORT

The Client: Major Airport Management Company

THE CHALLENGE

- Frost & Sullivan was tasked to develop a strategy and propose an execution plan to improve the competitiveness of the airport management company by adoption of various technologies in the airport, particularly for their navigational aid and airport facility equipment.

PROJECT OBJECTIVES

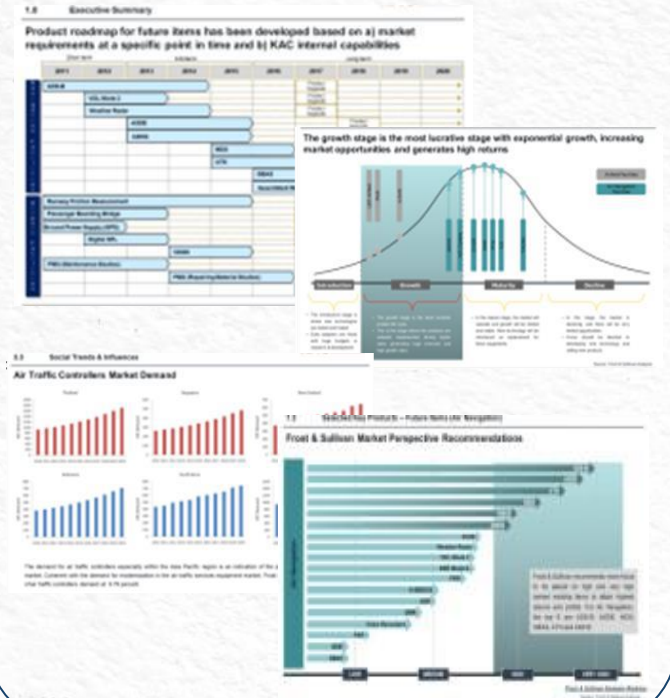
- To assess the current global market dynamics of both the air traffic control systems and airfield solutions.
- To identify key market opportunities across almost 40 different types of technology.
- To develop a comprehensive R&D roadmap across a 10 year period with the opportunity to generate the highest returns.

OUR APPROACH & WORK

Frost & Sullivan identified the trends, future requirements and undertook competitive benchmarking of all competitors and their products in each of the product group in the navigational aid/airport facility segment, analysing the competitors market entry strategy, pricing strategy and overall business development process and practices. User requirements were also identified. F&S then provided benchmarked innovation strategies for recommended products to the client.

OUTCOME AND BUSINESS IMPACT

- Frost & Sullivan delivered a thorough analysis for the client, from global market perspectives to specific solutions and products market opportunities in different regions across the globe. F&S helped the client establish a detailed roadmap with key sales targets, and strategic and tactical recommendations for maximum ROI



A SAMPLE LIST OF OUR CLIENTS



Schedule a **growth pipeline dialogue** with our global team to discuss growth opportunities and strategies

www.frost.com

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