



# Research Models and Services

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# Leading Provider of High-Quality Research Models & Services



**~1 of 2**  
Small models sold in Western markets is a CRL model

**No Competitor**  
has the geographic breadth and scale of CRL



**#1**  
market position

**~\$1.5B**  
RMS market opportunity



**>70**  
years of innovation and market leadership in laboratory animal science

**Double-digit revenue growth in China**

# Importance of Research Models & Services

- Research models are critical tools that enable researchers to answer fundamental questions about the efficacy and safety of drugs
- Used across multiple drug research disciplines (fundamental research, discovery, safety assessment), therapeutic areas, client types, and in all geographic regions
- Services to support the use of research models offer investigators a set of tools for the creation, qualification, scale up, or refinement of models as novel genes or pathways are identified
- Believe research models will remain an essential, regulatory-required, low-cost, scientific tool for drug research





# RMS Business Overview

- Global leader in breeding and distribution of research models and the services which support their use in discovery/ development of new molecules

## Research Models

- VAF/Plus® and VAF/Elite® status
- Inbred, outbred, and hybrid models
- Immunodeficient models
- Disease models
- Humanized models

## GEMS/RADS

- Creation and breeding of genetically engineered models
- Genetic testing services
- Infectious disease diagnostics

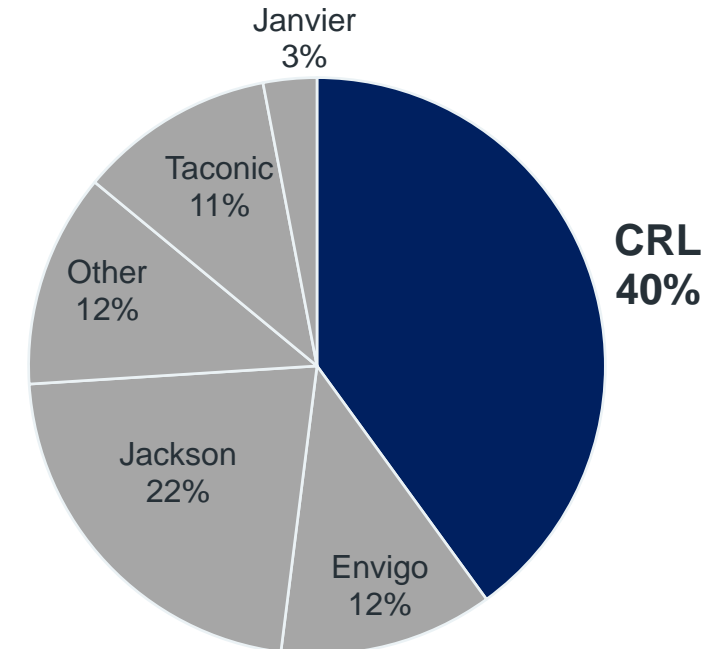
## Insourcing Solutions (IS)

- Vivarium management and laboratory support services
- Flexible solutions to address clients' research needs

# RMS Global Market & Growth Drivers

- CRL continues to maintain and expand its leading position
  - ~1 of every 2 small research models sold in Western markets comes from CRL
  - Market leader for research models services
  - ~\$1.5B RMS total market opportunity (including IS)
- CRL's two-year RMS organic revenue growth expected to be in the **low- to mid-single digits** annually
  - Growth drivers:
    - Robust double-digit growth in **China**
    - Modest **RM price increases** annually
    - Continued growth in **RM Services**
  - Offset by modest unit volume declines in mature markets outside of China
    - **Large biopharma infrastructure consolidation**
    - **Targeted research** resulting in more efficient study designs
    - Use of **innovative screening technologies**

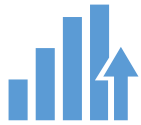
**RMS Market Share**  
(Excluding IS)



Source: CRL management estimates.

**CRL RM market share**  
**nearly 50% in Western markets**

# Key RMS Growth Drivers



1

## Continue China expansion

*Support double-digit growth amidst healthy funding environment*



2

## Drive Insourcing Solutions and GEMS growth

*Expand CRADL footprint; enhance IS penetration; expand GEMS strategic relationships*



3

## Target growth in biotech and academia

*Targeted sales strategies aimed at growing biotech and academic markets*



4

## Enhance digital enterprise

*Enhance client experience and productivity through innovative uses of technology*

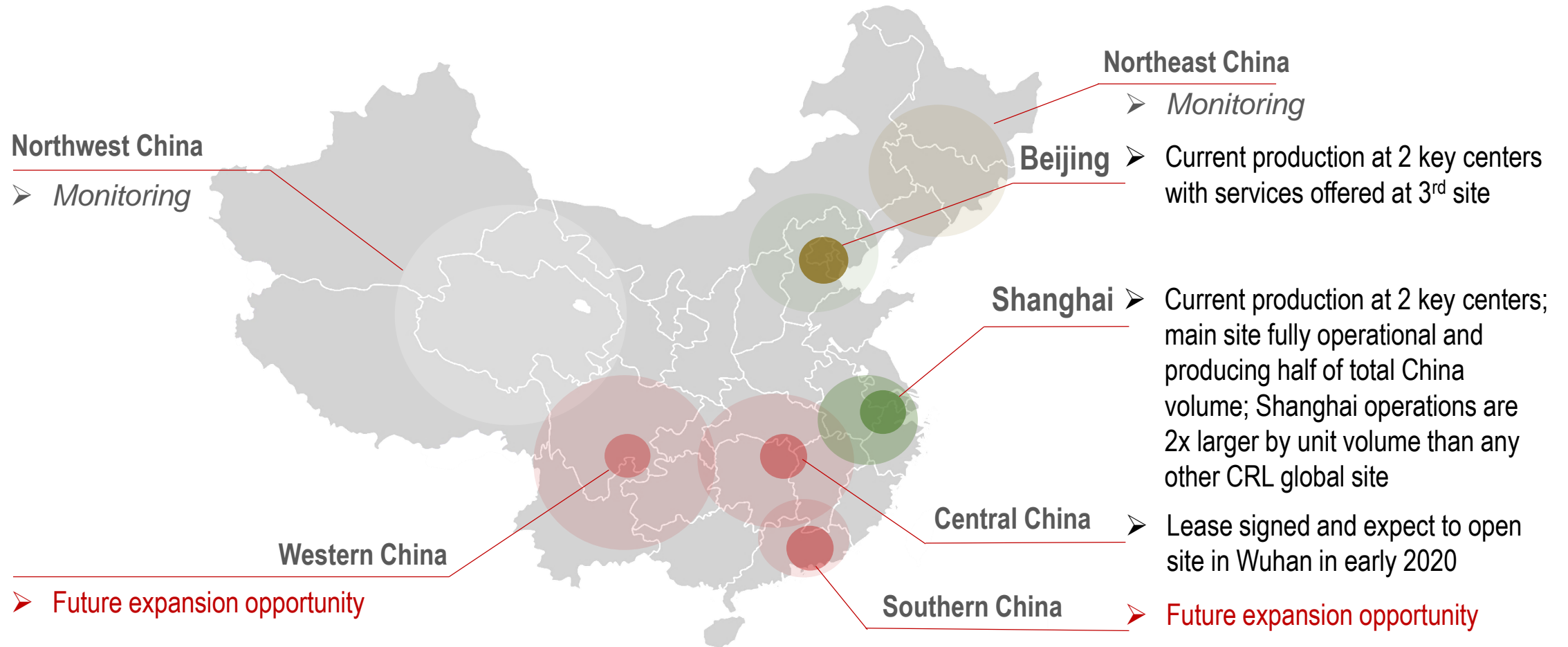


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## Profitability improvement initiatives

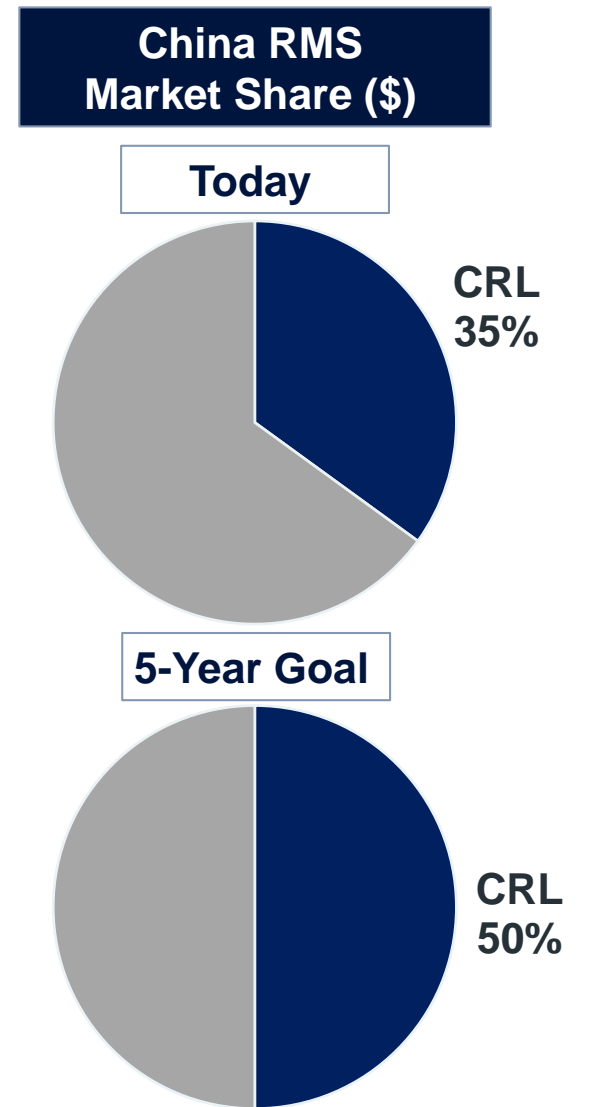
*Identify and execute initiatives to offset anticipated margin pressure*

# China RMS Expansion



# China RMS Expansion Drivers

- Beijing and Shanghai are major, expanding R&D hubs for both global biopharma and local institutions
  - R&D hubs also emerging in Central and Western China
- Robust market growth fueled by support for biomedical research in China and demand for quality research models
- Primary drivers to a 50% market share in China
  - Continued expansion to increase market penetration in new geographic regions
    - Central China (Wuhan), Southern China, and Western China
  - Synergies with adjacent RMS service lines
  - Enhance sales & marketing presence and use of digital tools



**China expected to be CRL's largest research model market by unit volume in 2019;  
RMS revenue in China targeted to surpass Europe within 5 years**



# RM Services Growth Opportunity

- Scientific innovation propelling the complexity of drug research
  - Clients utilizing higher proportion of specialty models
    - Inbred models for genetic modification, investigating gene function, or qualifying drug targets
    - Immuno-deficient models for oncology research
  - Leveraging innovative technologies such as CRISPR
- Driving increased use and outsourcing of RM Services, particularly GEMS
  - Breeding and creation of complex models benefits from the expertise of our GEMS business
    - Use of CRISPR resulting in faster, cost-effective creation of genetically engineered models (often multiple modifications required)
  - Additional health monitoring required from our RADS business

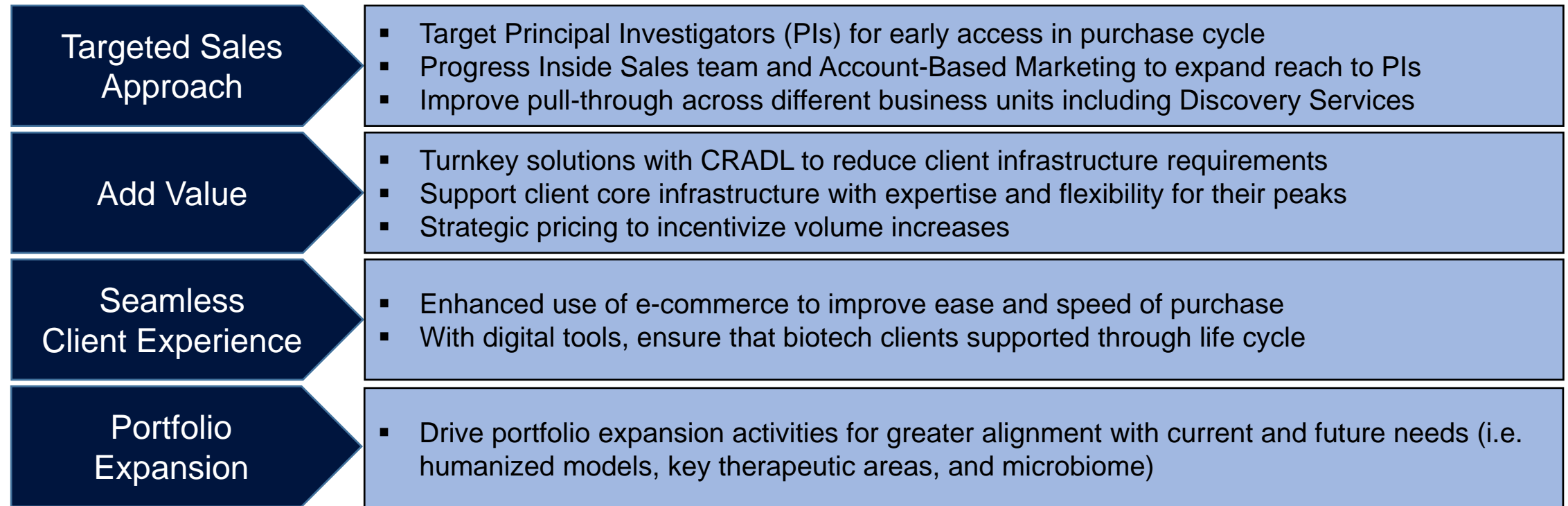


# RM Services: Insourcing Solutions

- Insourcing Solutions offers clients a variety of flexible solutions
  - Enhances the efficiency of clients' vivarium management
  - Offers flexible vivarium space at a CRL site supported by our management and technical experts
- Academic and government institutions have historically been the primary client base
  - Awarded 5-year, \$95.7M contract in Sept 2018 by the National Institute of Allergy and Infection Diseases (NIAID)
  - Significant growth opportunity by increasing market penetration for global biopharma clients
  - Profitability of our IS contracts is lower than our corporate operating margin, but good cash flow and minimal capex
- IS attracting new biopharma clients with flexible operational models within our infrastructure
  - CRADL initiative (or Charles River Accelerator and Development Labs) provides biopharma clients with turnkey facility
  - First location opened in Boston/Cambridge biohub in 2015
  - On track to open CRADL site in South San Francisco biohub by early 2020, co-located with Discovery footprint
  - Continue to expand into new biohub regions to drive future growth
  - Utilizing CRADL allows clients to invest in their research programs instead of their infrastructure
  - CRADL enables clients to seamlessly utilize additional CRL early-stage services

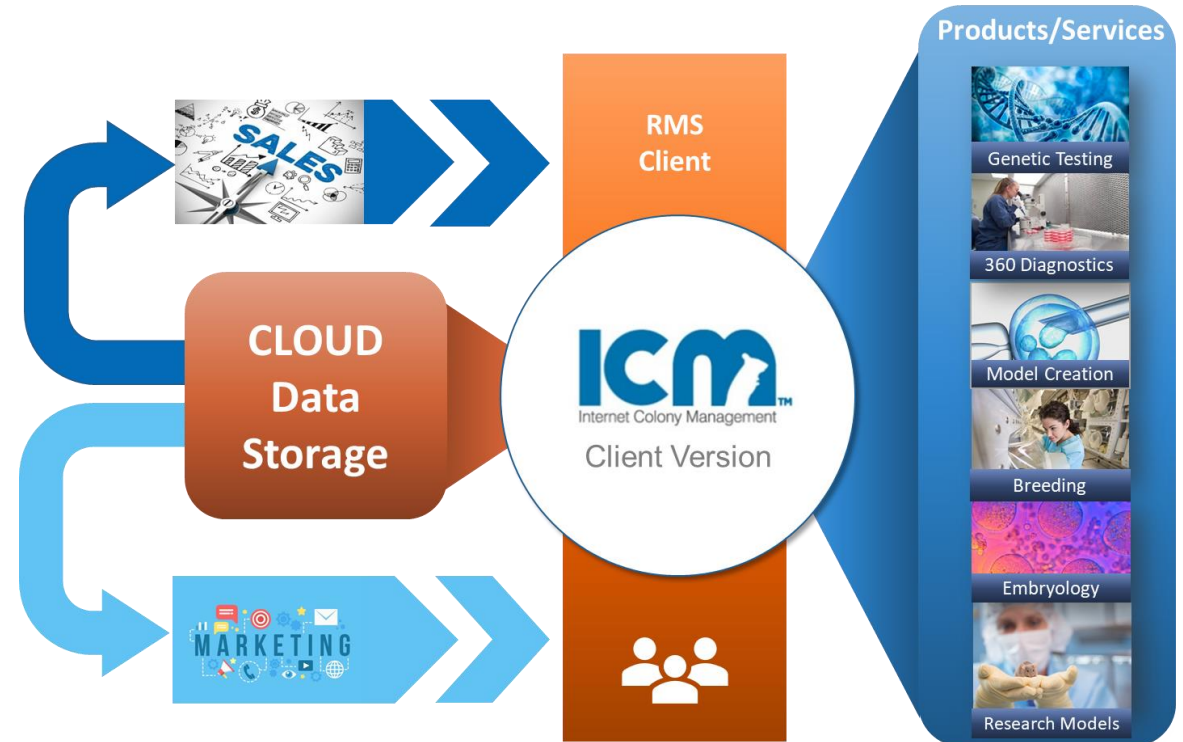
# Targeting Growth in Biotech and Academia

- Targeted initiatives to promote market share gains and growth in Biotech and Academic client segments



# Enhance RMS Digital Enterprise

- Leverage enhanced digital footprint to improve operational efficiency and client experience
  - Enhance data quality and efficiency by eliminating manual processes
  - Provide clients with real-time, 24-hour access to scientific/project data and sales quotations
  - Increased speed as projects are managed in one platform for more efficient workflow and tighter project timelines
- Migrate from client self-service to comprehensive “RMS Connectivity” capabilities using client ICM™ platform
  - Goal to enable online ordering and full client capabilities for both research models and services



# RMS Profitability Improvement Initiatives

➤ Committed to sustain RMS non-GAAP operating margin above 25%

## China

- Operating margin improvement in RMS China principally driven by greater scale and operating leverage on growth/expansion investments

## Services

- Leverage from continued growth in IS and GEMS businesses
  - IS Drivers: CRADL expansion to new geographies; Increase global biopharma penetration
  - GEMS Drivers: Client ICM™ expansion to increase efficiency and market share gains
- Partially offset by RMS business mix with growth from lower-margin IS services

## Efficiency & Other

- Continue to evaluate initiatives to enhance operating efficiency and improve profitability
  - Continued consolidation of small RMS sites globally to align production capacity with demand
  - Migrate towards comprehensive “RMS Connectivity” e-commerce platform
  - Evaluate strategic pricing opportunities

## Mature Markets

- Continued modest decline in research model volume in mature markets pressures RMS operating margin despite efficiency initiatives
  - Offset by continued model pricing increases
- Magnifies mix shift to lower-margin Services businesses (i.e. IS)

# Global RMS Strategic Imperatives

