CMR is a management consulting firm specializing across the commodity and specialty chemical value chains.

1. **Bulk chemicals**
   - Bulk chemicals
   - Industrial gases
   - Bulk resins
   - Polymeric membranes

2. **Polymers**
   - Antioxidants
   - Flame retardants
   - Adhesives/sealants
   - Paper chemicals
   - Agro-chemicals
   - Flavors & fragrance
   - Advanced ceramic materials
   - Inorganic specialties
   - Inorganic bulk chemicals
   - Commodity polymers
   - Polyurethanes
   - Biocides
   - Inorganic fillers
   - Inks and coatings
   - Leather chemicals
   - Cosmetics chemicals
   - Food ingredients
   - Catalysts
   - Fibers
   - Engineering plastics
   - Synthetic rubber
   - Coating additives
   - Lubricating oil additives
   - Concrete admixtures
   - Rubber processing chemicals
   - Enzymes
   - Pharmaceuticals
   - Electronic chemicals
   - Rare earths
   - Water soluble polymers
   - Adhesive resins
   - Plastic additives
   - Explosives & blasting agents
   - Specialty coatings
   - Feed additives
   - Pharma excipients
   - Inorganic bulk pigments

3. **Additives**
   - Corrosion inhibitors
   - Specialty surfactants
   - Industrial & institutional cleaners
   - Synthetic dyes
   - Synthetic lubricants
   - Textile chemicals
   - Oilfield chemicals
   - Water mgmt. chemicals

4. **Formulations**
   - Styrene-block copolymers
   - Ionomers
   - Corrosion inhibitors
   - Thermal fluids
   - Mining chemicals
   - Oilfield chemicals
   - Water mgmt. chemicals

5. **Fine chemicals**
   - Polyolefin plastomers
   - Polyolefin elastomers
   - Polyols
   - Mining chemicals
   - Textile chemicals
   - Oilfield chemicals
   - Water mgmt. chemicals

6. **Inorganic materials**
   - Composites
   - Water soluble polymers
   - Adhesive resins
   - Plastic additives
   - Explosives & blasting agents
   - Specialty coatings
   - Feed additives
   - Pharma excipients
   - Inorganic bulk pigments
   - Polyolefin elastomers
   - Polyolefin plastomers
   - Mining chemicals
   - Textile chemicals
   - Oilfield chemicals
   - Water mgmt. chemicals
ADI’s acquisition of CMR brings clients expertise, experience, and an integrated view of the hydrocarbon value chain

<table>
<thead>
<tr>
<th>Upstream oil and gas</th>
<th>Midstream and LNG</th>
<th>Refining and fuels</th>
<th>Chemicals / petrochem.</th>
<th>Distributors / resellers</th>
<th>Fabricators / convertors</th>
<th>Brand owners / end-users</th>
</tr>
</thead>
</table>

ADIs is a management consulting firm specializing in oil and gas, power, chemicals, and industrials. It has completed 300+ projects for 100+ clients since 2009.

[www.ADI-Analytics.com](http://www.ADI-Analytics.com)

ADI acquired key assets of Chemical Market Resources (CMR) in 2017. Since 1990, CMR has provided market research and management consulting services through 500+ projects for 200+ clients in petrochemicals, chemicals, plastics, and polymers.

[www.CMRHouTex.com](http://www.CMRHouTex.com)
Our proven value proposition spans rich experience, deep industry expertise, and an integrated view of hydrocarbons.

Serving chemical and polymer markets since 1990

Lead with deep industry and consulting expertise

Integrated view of hydrocarbon value chain

Completed 500+ projects for 200+ clients
Fortune 500 and mid-sized companies, start-ups, investors, and governments have hired us to shape decisions globally.
CMR and ADI services help clients assess markets, address uncertainty, improve capabilities, and support workflows

<table>
<thead>
<tr>
<th>Build strategy</th>
<th>Drive sales and marketing</th>
<th>Navigate markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Research and analyze trends, markets, industry, and players</td>
<td>▪ Size and analyze markets and market shares for players</td>
<td>▪ Track industry and business trends to provide on-going intelligence</td>
</tr>
<tr>
<td>▪ Identify and validate strategic options and M&amp;A opportunities</td>
<td>▪ Identify and profile for best segment / customer mix</td>
<td>▪ Identify key opportunities and threats from external landscape</td>
</tr>
<tr>
<td>▪ Define and test investment / M&amp;A moves with scenarios</td>
<td>▪ Develop optimal go-to-market and channel strategies</td>
<td>▪ Develop appropriate strategies to address opportunities and threats</td>
</tr>
<tr>
<td>▪ Profile competitive, regulatory, and other external risks</td>
<td>▪ Seek voice of customer to refine offerings</td>
<td>▪ Develop models- and analytics-based forecasts and projections</td>
</tr>
<tr>
<td>▪ Support implementation plans</td>
<td>▪ Optimize pricing and profit</td>
<td>▪ Support needs on a critical timeline</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyze financial issues</th>
<th>Optimize procurement</th>
<th>Accelerate innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Benchmark financial / investment performance with competitors</td>
<td>▪ Build accurate picture of procurement activities and spend</td>
<td>▪ Assess current and new processes and technologies for fit and impact</td>
</tr>
<tr>
<td>▪ Build valuation models to analyze capital / business investments</td>
<td>▪ Benchmark to best-in-class procurement players / strategies</td>
<td>▪ Estimate capital and operating costs for process technologies</td>
</tr>
<tr>
<td>▪ Develop robust business performance forecasts</td>
<td>▪ Identify category management and strategic sourcing opportunities</td>
<td>▪ Identify process opportunities, needs, costs, and benefits</td>
</tr>
<tr>
<td>▪ Analyze financials to identify portfolio initiatives / opportunities</td>
<td>▪ Define procurement spend optimization needs / opportunities</td>
<td>▪ Analyze R&amp;D / innovation portfolio using market-backed metrics</td>
</tr>
<tr>
<td>▪ Build financial tracking dashboards</td>
<td>▪ Develop procurement KPI analytics</td>
<td>▪ Plan R&amp;D / innovation strategies</td>
</tr>
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</table>
Since 1990, we’ve served 200+ clients through 500+ projects in chemicals, petrochemicals, polymers, and plastics

### MARKET RESEARCH
- Assessed global metallocene polypropylene markets
- Profiled the global market characteristics of HMS PP
- Analyzed mHDPE and mLDPE markets in Middle East
- Sized the US polystyrene markets with end-user analysis
- Assessed C3-4 olefins from FCC streams in North America
- Studied feasibility for new cracker in Mexico, Peru, and Brazil
- Studied characteristics of the global extrusion coating markets
- Researched markets for levulinic acid and levulinic acid esters
- Researched SBS and SEBS based adhesive and sealant markets
- Global analysis of specialty zeolite markets in refinery applications
- Analyzed global polyurethane markets for producers and utilization
- sized acrylic acid and butyl acrylate markets for Saudi Arabia plant

### OPPORTUNITY ANALYSIS
- Analyzed opportunities for the use of Ziegler-Natta catalyst in the manufacture of high impact polypropylene
- Global opportunity analysis of polylactic acid (PLA) to assess the quality of products and the competition in that market
- Investigated opportunities and competitive approaches for high butadiene resin in medical and specialty tubing applications
- Developed a JV strategy for a multinational petrochemical company for identifying partners in HDPE, LLDPE and PP producing technologies
- Examined opportunities for bio-PG, bio-PDO, and glycerin in household/personal care, food, coatings, laminates and pharmaceuticals sectors

### TECHNOLOGY ASSESSMENT
- Analyzed glyoxylic acid and glycolic acid process technologies
- Evaluated various plasticizers including non-phthalate plasticizers
- Proposed characteristics of PP and formaldehyde based catalysts
- Conducted technical assessments of PE and PP foams and fibers
- Investigated the impact of shale gas developments on PP markets
- Assessed the use of s-SBR in high performance tires for many clients
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### STRATEGIC PLANNING
- Led strategic planning for EO/EG product development
- Developed strategies for isopropanol based investments
- Conducted feasibility analysis for triethylaluminum catalysts
- Proposed EU strategy for m-C2-4 plastomers and elastomers
- Proposed strategies for involving gamma butyrolactone (GBL)
- Investigated metallocene polypropylene random copolymer resins

### COMPETITIVE INTELLIGENCE
- Examined leader grades for m-LLDPE
- Analyzed competition in glycol products
- Assessed competition in synthetic papers
- Analyzed competitor SBC product portfolio
- End-user competitive study for MEK polymer
- Tie layer resin market study in Latin America

### COST AND ECONOMICS
- Investigated prices of polyurethane latex
- Led feasibility studies for new IPA plants
- Assessed cash costs of polyolefin resins
- Forecasted pricing for bio-based ethanol
- Analyzed production cost of DCPD resins
- Feasibility of EVA plant in southeast Asia

### M&A SUPPORT
- Identified players in the PUR markets
- Assisted in merger of polyolefin assets
- Led risk assessments for asset mergers
- Conducted due diligence on PE/PP plants
- Assisted acquisition of plasticizer business
- Acquired customer insights on PS products

www.CMRHouTex.com
ADl has completed 100+ projects since 2009 helping chemical companies address a wide range of strategic issues

<table>
<thead>
<tr>
<th>Strategic Projects</th>
<th>Tactical Projects</th>
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<tbody>
<tr>
<td><strong>1. Strategic planning</strong></td>
<td>Options-based market entry strategy for levulinic acid <strong>technology start-up</strong> in plasticizers, coatings, and adhesives</td>
</tr>
<tr>
<td>Sourcing strategies for acrylates, ionomers, and acid copolymers for a <strong>leading plastics producer</strong></td>
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<tr>
<td><strong>2. M&amp;A support</strong></td>
<td>Led market- and customer- focused due diligence on pipeline chemicals firm for chemicals-focused <strong>private equity firm</strong></td>
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<tr>
<td>Growth strategy with acquisition target and joint venture partner identification and profiling for <strong>oxo-alcohols player</strong></td>
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<tr>
<td><strong>3. Costs and economics</strong></td>
<td>Technology, cost, and economic feasibility of on-purpose C3-4 olefins for <strong>U.S. chemical major</strong></td>
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<tr>
<td>Ethane sourcing strategy with cost, economic, and logistical feasibility for <strong>Asian petchem major</strong></td>
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<tr>
<td><strong>4. Market research</strong></td>
<td>U.S. NGL supply scenarios with cost models and pipeline logistics from shale plays for <strong>Canadian plastics producer</strong></td>
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<tr>
<td>Ethylene derivatives market sizing and growth assessment opportunities for <strong>large private equity firm</strong></td>
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<tr>
<td><strong>5. Technology strategy</strong></td>
<td>Technology application and growth opportunities in oilfield chemicals for <strong>polyol / polyurethane player</strong></td>
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<tr>
<td>Innovation strategy, R&amp;D performance benchmarking, and organization design for <strong>Asian chemical major</strong></td>
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<tr>
<td><strong>6. Competitive intelligence</strong></td>
<td>Peer adoption use-cases and analysis of digital solutions and Industrial Internet of Things (IIoT) for <strong>chemical major</strong></td>
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<tr>
<td>Improved competitiveness of <strong>specialty chemicals firm</strong> by analyzing peers and refining customer engagement</td>
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</tbody>
</table>
Our consulting services are supported by a wide range of proprietary, on-demand analytics and databases

**Demand analytics**
- Demand drivers
- Demand by region
- Demand by product
- History and forecasts
- Trade flows and outlook
- Application / user profiles

**Supply analytics**
- Supplier profiles
- Marginal supply curves
- Capacities and forecasts
- Export/import parity levels
- Cost / economic analyses
- Utilization and disruptions

**Pricing analytics**
- Price set mechanisms
- Price drivers and outlook
- Contract and spot prices
- Price history and forecasts
- Price breakdown / analysis
- Logistics / shipping prices

**Cost analytics**
- Costs and breakdowns
- Cost drivers and outlook
- Cost curves and analyses
- Cost history and forecasts
- Cost optimization options
- Competitor cost analytics
In addition, CMR has published more than 55 multi-client studies covering a wide range of polymers and plastics:

<table>
<thead>
<tr>
<th>Study Title</th>
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<tbody>
<tr>
<td>SBS and SEBS based adhesives and sealants (2018)</td>
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<tr>
<td>Global linear alpha olefins ($C_4$, $C_6$, $C_8$) study (2017)</td>
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<td>Global tie layer resins study (2017)</td>
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<tr>
<td>Worldwide polyethylene catalyst market study (2016)</td>
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<td>Global polyolefins in automotive industry (2016)</td>
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<td>Global high melt strength polypropylene study (2015)</td>
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<td>Global styrene block copolymers market study (2015)</td>
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<td>China ethylene and polyethylene analysis (2014)</td>
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<tr>
<td>Global elastomeric polyolefins review (2014)</td>
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<td>Global polyolefin foams market study (2014)</td>
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<td>Global polypropylene fibers Study (2014)</td>
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<tr>
<td>Global polypropylene films study (2014)</td>
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<td>Global polyolefin catalysts study (2012)</td>
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<td>Global metallocene elastomers and plastomers study (2011)</td>
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<td>Global acid copolymers and ionomers study (2011)</td>
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<td>Global high-EVA copolymers study (2011)</td>
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<td>Global HDPE and MDPE market analysis (2010)</td>
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<td>Global LDPE and high EVAs study (2009)</td>
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<tr>
<td>Vinyl acetate monomer derivatives (2008)</td>
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<td>Global MMA and PMMA study (2006)</td>
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<td>Worldwide polyacetal market analysis (2006)</td>
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<tr>
<td>Worldwide high-pressure LDPE market review (2006)</td>
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Finally, CMR is widely recognized for its long tradition of thought leadership in chemicals and petrochemicals.