Arconic & Alcoa: Corporate Cousins

A case study on disaggregation and shoaling strategy

Senthil Kumar, PhD

www.schooloffishstrategy.com

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Alcoa (Aluminum Corporation of America) is a global leader in lightweight metals technology, engineering and manufacturing, Alcoa innovates multi-material solutions, and its technologies enhance transportation, from automotive and commercial transport to air and space travel, and improve industrial and consumer electronics products. Alcoa's products enable smart buildings, sustainable food and beverage packaging, high-performance defense vehicles across air, land and sea, deeper oil and gas drilling and more efficient power generation. Alcoa pioneered the aluminum industry over 125 years ago, and it employs 60,000 people in 30 countries delivering value-adding products made from titanium, nickel and aluminum, and produce best-in-class bauxite, alumina and primary aluminum products. In 2015 Alcoa's sales revenue was about $22 billion.

In early 2016 Alcoa's management announced that its Board of Directors has unanimously approved a plan to separate Alcoa into two independent, publicly-traded companies, culminating Alcoa's successful multi-year transformation. The separation will launch two industry-leading, Fortune 500 companies. The globally competitive Upstream Company will comprise five strong business units that today make up Global Primary Products - Bauxite, Alumina, Aluminum, Casting and Energy. The innovation and technology-driven Value-Add Company will include Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions.

In November 2016, Alcoa's board implemented the split with the creation of two companies. The common stocks were split at a ratio of 1 for 3; shareholders received 1 share for every 3 shares they owned as of October. Old company with 184 million outstanding shares retained the name Alcoa (stock label: AA) and a new company called Arconic (ARNC) with 440 million outstanding shares were created. The board of directors of each company will review and determine the dividend policy of each company. See the exhibits for how more value will be realized for shareholders.

According to press release, Klaus Kleinfeld CEO of Alcoa states "In the last few years, management has successfully transformed Alcoa to create two strong value engines that are now ready to pursue their own distinctive strategic directions." "After steering the Company through the deep downturn of 2008, we immediately went to work reshaping the portfolio. We have repositioned the upstream business; we have an enviable bauxite position and are unrivalled in Alumina, we have optimized Aluminum, flexed our energy assets, and turned our cast-houses into a commercial success story. The upstream business is now built to win throughout the cycle. Our multi-material value-add business is a leader in attractive growth markets. We have intensified innovation, made successful acquisitions, shed businesses without product differentiation, invested in smart organic growth, expanded our multi-materials profile and brought key technologies to market; all while significantly increasing profitability." Mr. Kleinfeld concluded, "Inventing and reinventing has defined our Company throughout its 126-year history. With the unanimous support of Alcoa's Board we now take the next step; launching two leading-edge companies, each with distinct and compelling opportunities, and each company will be prepared to seize the future."

When companies usually go for mergers, acquisitions and complete integration of acquired portfolios for achieving growth, why did Alcoa's management decide to split the organization? What benefits would result in for management, shareholders and customers? Can the firm continue to sustain economies of scale and synergy after the split? What economic and management rationale would substantiate this decision? See the following exhibits for more explanation. Shoaling design can be practiced at corporate governance, product or business unit level, production organization or alliance and franchise management. School-of-Fish Strategy not only eliminates opportunity cost of losing emerging markets, but also reduces investment risk associated with large-scale integration. School-of-Fish formation enables multi-pronged competitive strategies permitting a firm to develop unique or optimal strategy for each rival it encounters in the respective market or region. School of Fish Strategy is not only lean, but can enhance quality, customization, product variety, quality of work life (QWL), quality of life, and overall sustainability of enterprise.

Alcoa's transformation and separation into two leading public companies, is an excellent business case for Shoaling or School of fish strategy. How this split and transformation at the corporate governance level and operating as two separate companies will be helping the giant industrial-age company to achieve innovation, growth, quality and value creation will be an important strategy lesson. Within one year of the split, market has expressed confidence in the firm creating more value shareholders. Alcoa' new decision and resulting operational consequences will reveal how this new structure enables reducing bureaucratic cost, transfer pricing practices to achieve value maximization, providing autonomy to businesses (units) to achieve organic growth through market and product innovation, and repositioning.

Alcoa: The Upstream Company

After the separation, the Upstream Company will be a cost-competitive industry leader in bauxite mining, alumina refining and aluminum production, positioned for success throughout the market cycle. The company's footprint will include 64 facilities worldwide, and approximately 17,000 employees. Revenues for the 12 months through June 30, 2015 totaled $13.2 billion, with $2.8 billion in EBITDA. It will be committed to disciplined capital allocation and prudent return of capital to shareholders. Global aluminum demand is expected to grow 6.5 percent in 2015 and double between 2010 and 2020; so far this decade, global demand growth is tracking ahead of this projection.

The Upstream Company will be well-positioned to meet this robust demand. The Upstream Company's world-class asset base will include the world's largest bauxite mining portfolio, with 46 million bone dry metric tons of production in 2014. It has a low 19th percentile position on the global bauxite cost curve. With proximity to owned refinery operations, its mining reserves will provide a consistent supply of low-cost bauxite. Alcoa has been building its third-party bauxite business and is well-positioned to meet growing global demand. The Upstream Company's alumina refining system will be the world's largest, with operations well positioned to serve major adjacent growth markets in Asia, the Middle East, and Latin America. It has a 25th percentile, first quartile position on the global alumina cost curve, with a target to reach the 21st percentile by 2016. The company will be the world's fourth largest aluminum producer with a highly competitive second quartile cost curve portfolio. It will have an unrivalled value-add cast-house network in close proximity to customers, and a substantial portfolio of energy assets with power production capacity of approximately 1,550 megawatts with operational flexibility to profit from market cyclicality.

Alcoa has aggressively reshaped its Alumina and Primary Metals segments, closing, divesting or curtailing 1.4 million metric tons, or 33 percent, of total smelting operating capacity since 2007. As a result, Alcoa has dropped eight points on the global aluminum cost curve since 2010 to the 43rdpercentile, and is targeting the 38th percentile by 2016. Additionally, Alcoa has secured approximately 75 percent of smelter power needs through 2022. Alcoa has also steadily grown its offering of differentiated, value-add aluminum products that are cast into specific shapes to meet the needs of customers. The Company has grown total value-add product shipments from its smelters from 57 percent in 2010 to 65 percent in 2014, delivering $1.3 billion in total incremental margin. In 2015, value-add products are projected to represent approximately 70 percent of smelter shipments. Alcoa has also invested in the most advanced, low cost integrated aluminum complex in the world in Saudi Arabia, with the refinery and smelter now operational. Alcoa reformed pricing in the alumina market in 2010 by introducing the Alumina Price Index (API) to sell smelter-grade alumina based on alumina market fundamentals rather than London Metal Exchange pricing. In 2014, 68 percent of Alcoa's total third-party smelter-grade alumina shipments were based on

API/spot market pricing. That is projected to grow to approximately 75 percent in 2015. Additionally, the Upstream business has achieved productivity gains of approximately $3.9 billion between 2009 and 2014.

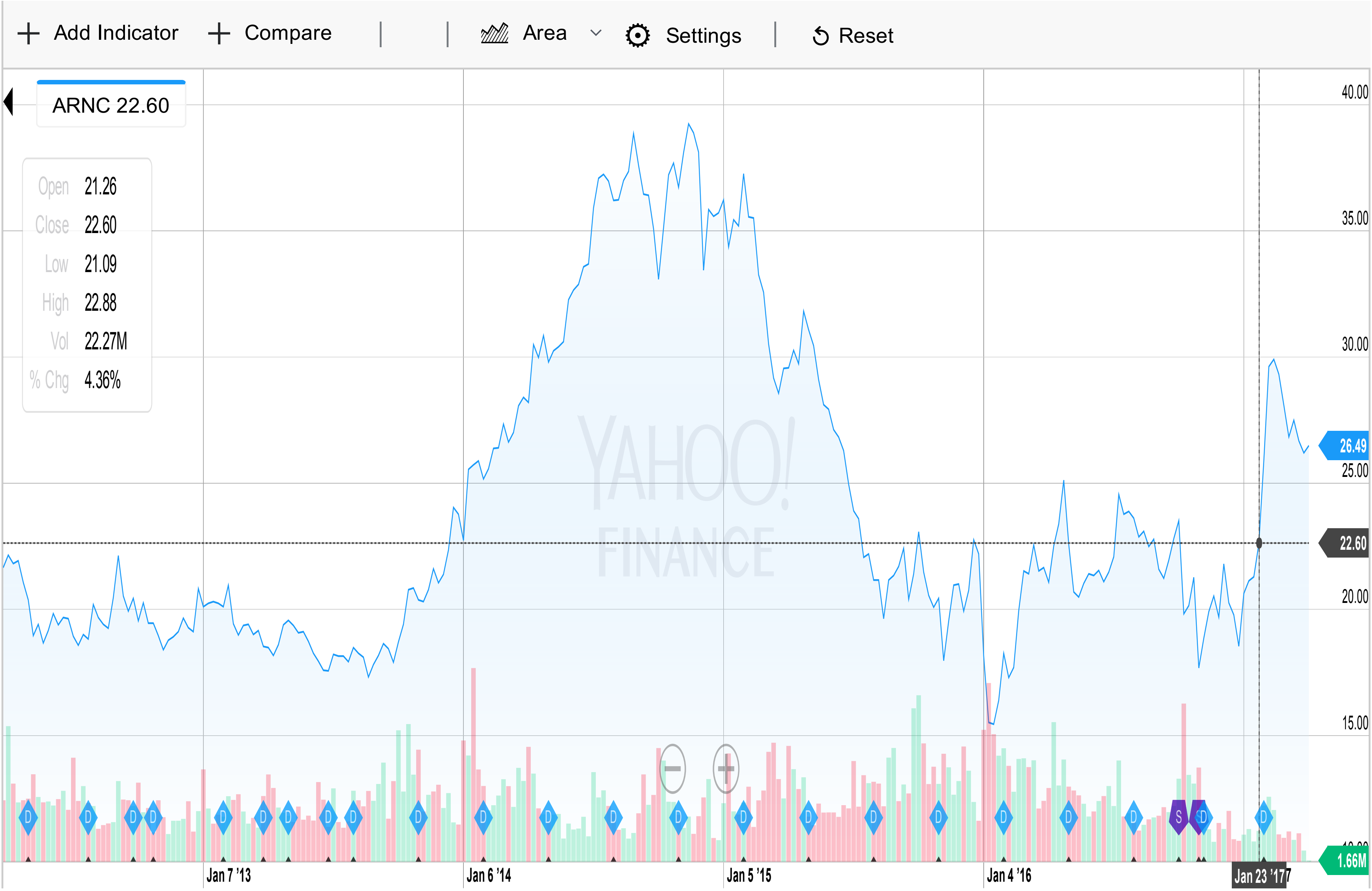
Arconic: Value Adding Company

After the separation, the Value-Add Company will be a premier provider of high-performance multi-material products and solutions with 157 globally diverse operating locations and approximately 43,000 employees. Pro-forma revenues for the Value-Add Company for the 12 months through June 30, 2015 totaled $14.5 billion, with $2.2 billion in pro-forma EBITDA. As Alcoa has transformed, EBITDA margins for the value-add portfolio have increased from 8 percent in 2008 to 15 percent in 2015 on a pro-forma basis for the twelve months through June 30, 2015. The overall contribution of the value-add portfolio to Alcoa's after-tax operating income has more than doubled from 25 percent in 2008 to 51 percent in 2014. EBITDA margins in the combined downstream segments (Engineered Products & Solutions, Transportation & Construction Solutions) have increased from 14.6 percent in 2008 to 20.9 percent in 2014, and in the midstream (Global Rolled Products) from $108 per metric ton in 2008 to $289 per metric ton in 2014.

The Value-Add Company will be positioned for profitable growth by increasing share in fast growing end markets and leveraging significant customer synergies across the midstream and downstream portfolios. The company will be a differentiated supplier to the high-growth aerospace industry with leading positions on every major aircraft and jet engine platform, underpinned by market leadership in jet engine and industrial gas turbine airfoils, and aerospace fasteners. Approximately 40 percent of the company's pro-forma revenues for the 12 months through June 30, 2015 came from the aerospace market. The company will also be at the forefront of capturing demand for aluminum intensive vehicles through Alcoa's recent rolling mill capacity expansions and the commercialization of breakthrough technologies such as the Micro-mill. Automotive revenues are expected to increase 2.4 times from 2014 to $1.8 billion in 2018. Additionally, the Value-Add Company will be an unparalleled leader in aluminum commercial truck wheels and will hold the number one market position in North American architectural systems. Future profitable growth will be supported by a full pipeline of innovative products and solutions. The Value-Adding Company and Upstream Company will have distinct value profiles with the ability to effectively allocate resources and deploy capital in-line with individual growth priorities and cash-flow profiles. As independent entities, each company will be positioned to capture opportunities in increasingly competitive and rapidly evolving markets.


Alcoa Corporation (AA) 33.77 0.86 (2.61%) As of 2:23PM EDT. NYSE Real Time Price. Market open.
Add Indicator
Compare
Area
Settings
Reset
AA 32.92
Open 32.50
Close 32.92
Low 32.45
High 33.64
Vol 4.04M
% Chg 46.31%
YAHOO! FINANCE
40.00
38.00
36.00
34.00
33.77
32.92
32.00
30.00
28.00
26.00
24.00
22.00
5.86M
20.00
2017
Mar 28 '17

Arconic Inc. (ARNC) 26.48 0.28 (1.07%) As of 2:21PM EDT. NYSE Real Time Price. Market open.



Management Executed Complex Transformation to Strengthen Businesses

Alcoa Inc. strategic transformation

Saved the company 2008-2009	**Transformed the company** 2010-2015	**Executed separation** 2015-Nov 1, 2016

Management actions to survive severe financial distress:

- ✓ **Reduced cost base**
- ✓ **Generated cash** from cost, capex and working capital reductions
- ✓ **Strengthened balance sheet** and restored liquidity
- ✓ **Managed cash stringently**

Upstream

- ✓ Increased **cost competitiveness**
- ✓ Lessened impact of **commodity cycles**
- ✓ Created **highly profitable** energy business and 3rd-party bauxite business
- ✓ Established a global **alumina pricing index**

Downstream

- ✓ Divested **low margin or undifferentiated businesses**
- ✓ Focused on **high growth, high margin aerospace and automotive** markets
- ✓ Built a portfolio of **new-to-world innovations**
- ✓ Made strategic investments **to fill key product and capability gaps** and **commercialize innovations**

- ✓ Created two strong **value engines**
- ✓ Instituted **prudent capital structures** for both entities
- ✓ Established a separation structure to **minimize execution risk while driving business performance**
- ✓ Executed **highly complex** separation on time and on budget

Alcoa

ARCONIC
Innovation, engineered.

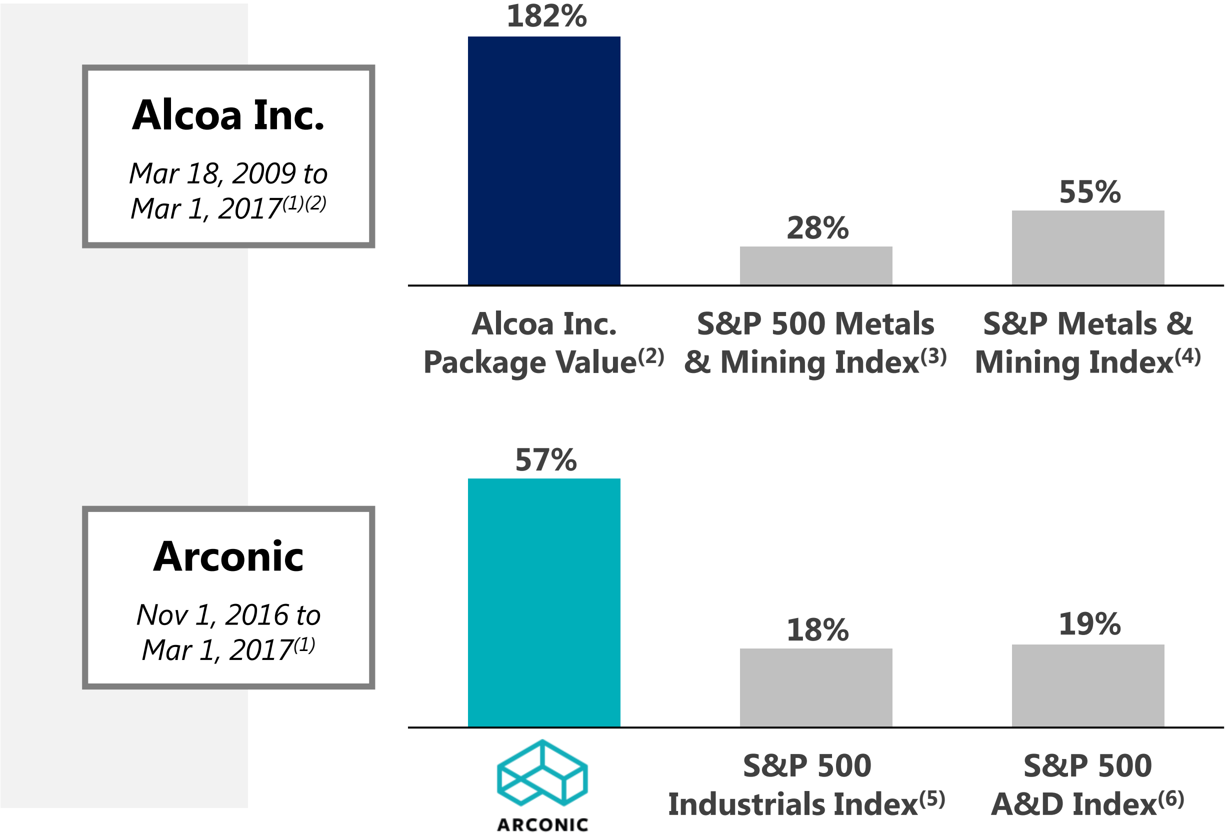
6.9%(1) 2008 — ***Arconic Combined Segment Adjusted EBITDA Margin (%)(2)*** → **16.6%** 2016

Source: Arconic
1) Including the wire harness and electrical distribution business which was sold in 2009.
2) Combined segment Adjusted EBITDA comprised of Global Rolled Products, Transportation and Construction Solutions, and Engineered Products and Solutions segments.
See Appendix for Reconciliations.

Management and Board Have Created Substantial Shareholder Value

Alcoa Inc. package value and Arconic absolute Total Shareholder Return (TSR) versus industry benchmarks

Total Shareholder Return



Key Facts

- Management has **delivered meaningful shareholder returns** since the financial crisis
- **Alcoa Inc**.'s TSR has **outperformed the relevant industry benchmarks** since 2009
- **Alcoa Inc**.'s TSR has **outperformed the relevant industry benchmarks** in recent periods
- **Arconic** stand-alone shareholder returns **have significantly outperformed its benchmark** indices since separation

Source: Arconic, Arconic analysis of Capital IQ data (as of Mar 1, 2017) 1) Calculated based on closing prices. 2) Package value to Alcoa Inc. shareholders includes Alcoa Inc. total shareholder return through Oct 31, 2016. From Nov 1, 2016 through Mar 1, 2017, package value to the Alcoa Inc. shareholder is calculated based on the performance of 1 share of Arconic and 1/3 share of Alcoa Corp. On Nov 1, 2016, as a result of the separation, every shareholder of Alcoa Inc. received 1 share of Arconic and 1/3 share of Alcoa Corp. for every 1 share of Alcoa Inc.; the package value calculates the total value to the former Alcoa Inc. shareholder over the specified time period. 3) Index comprises those companies included in the S&P 500 that are classified as members of the GICS metals and mining sector. Comprised of 3 constituents as of Mar 1, 2017, not including Arconic Inc. or Alcoa Corp. Alcoa Inc. was included in the index until the separation on Oct 31, 2016. Both Alcoa Corp. and Arconic Inc. were included in the index on Nov 1, 2016, but both were removed on Nov 2, 2016. 4) Index comprises stocks in the S&P Total Market Index that are classified in the GICS metals and mining sector. Comprised of 27 constituents as of Mar 1, 2017, including Alcoa Corp. but not including Arconic Inc. Alcoa Inc. was included in the index until Oct 31, 2016. Both Alcoa Corp. and Arconic were included in the index starting on Nov 1, 2016. Arconic was removed on Dec 16, 2016. As of Mar 1, 2017, Alcoa Corp. continued to be a constituent of the index. 5) Index comprises those companies included in the S&P 500 that are classified as members of the GICS industrials sector. Comprised of 68 constituents as of Mar 1, 2017, including Arconic Inc. 6) Index comprises those companies included in the S&P 500 that are classified as members of the GICS aerospace and defense sector. Comprised of 11 constituents as of Mar 1, 2017, including Arconic Inc.

Innovation and Share Gains Will Continue To Deliver Substantial Value

Three-year strategic plan

1 Deliver Profitable Growth

Grow revenue above market

- Distinct focus on **attractive markets** with **multi-year tailwinds**
- **Share gains** on **next-generation programs** (aero engines, aero airframes, automotive)
- Leverage **comprehensive product offering** to drive new contract wins
- Continue to **partner constructively** with our **customers** for **long-term success**
- **Innovate** breakthrough products, solutions and processes

7-8% Revenue CAGR(1)

Expand margins across the board

- **Run-rate production** with **best-in-class processes** of next-generation programs
- Roll-out of **differentiated products** with attractive and defensible margins
- Increase plant **capacity utilization**
- Focus on **overhead efficiencies** (<1% of revenue in 2019)

~250bps combined segment EBITDA margin increase by 2019(2)

2 Optimize Returns

Focus on capital efficiency

- Exacting **capex management**
- **Working capital** improvement
- **Interest savings** from **reduction of excess debt** incurred **due to separation**
- **Exit** lower return or undifferentiated **businesses**

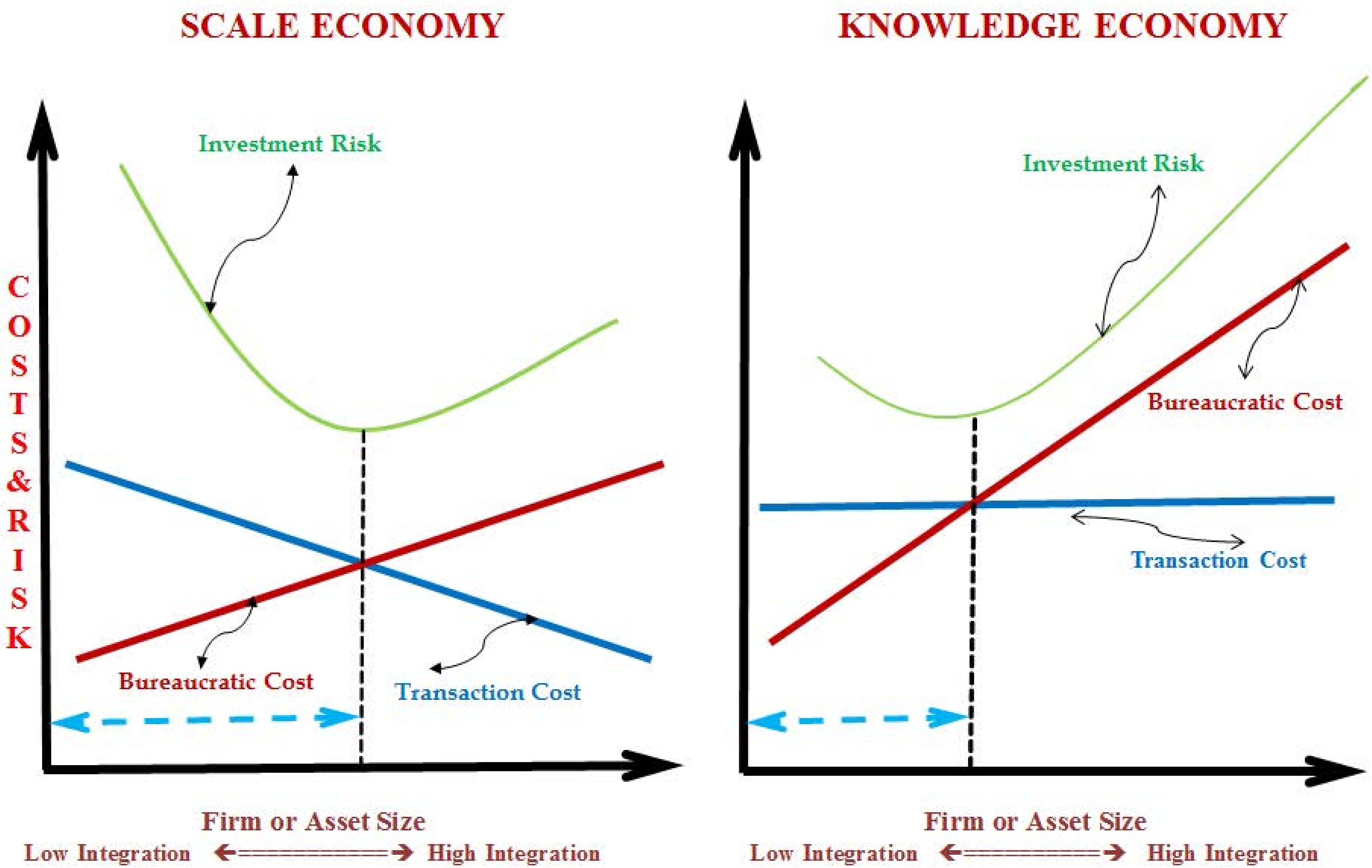
+400 – 500bps RONA improvement by 2019(3,4)

Focused on creating long-term sustainable value for shareholders through innovation, execution discipline and operational excellence

Source: Arconic
1) *Compounded Annual Growth Rate from year end 2017 to year end 2019.*
2) *Calculated based on combined segment adjusted EBITDA margin change between 2016 (16.6%) and 2019 (~19%).*
3) *RONA (Return on Net Assets) defined as adjusted net income divided by working capital and net PP&E.*
4) *Calculated based on RONA change between 2016 (7.1%) and 2019 (~11-12%). RONA adjusted for special items.*
See Appendix for Reconciliations.

ARCONIC

CHANGING COST STRUCTURES FOR ORGANIZATION & PRODUCTION



Senthil Kumar, PhD.

Created Leading Upstream Business with Low-Cost, World-Class Assets

Results from Upstream transformation

Actions Taken

- **Sold, curtailed or closed 43% of smelting** and **35% of refining** high cost operating capacity
- Created new **alumina global pricing mechanism**
- Created **highly profitable** energy business
- Established **third-party bauxite** business
- Grew cast house **value-add shipments** to 67%

Cost Curve Positions(1)

Improved Upstream Cost Position

	Alumina	Aluminum
2010	**30th percentile**	**51st percentile**
2016	**17th percentile**	**38th percentile**

Achieved or surpassed cost targets set for 2016

2016 Positions

✓ **World's largest bauxite miner(2)**

✓ **World's largest alumina refiner(2)**

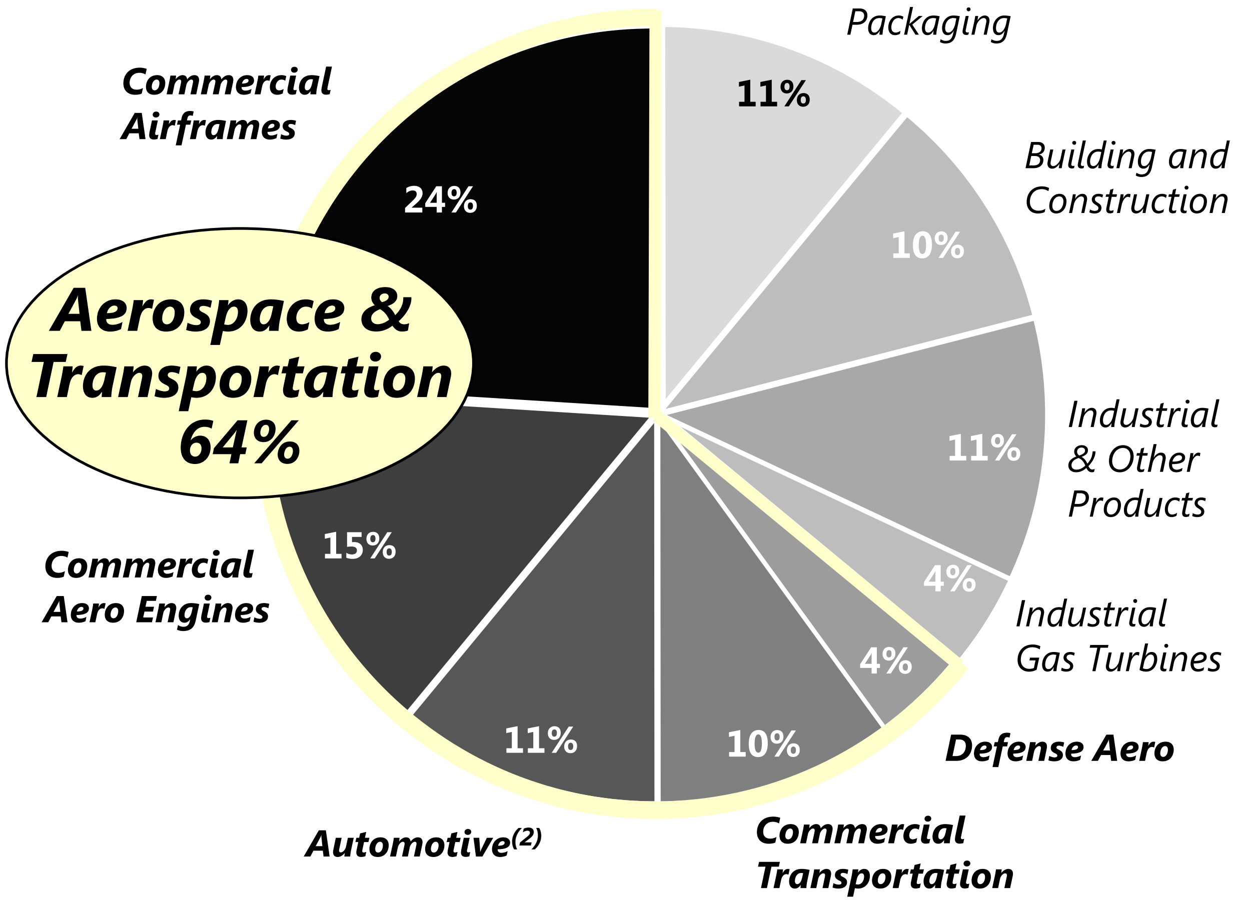
✓ **Well-positioned smelting assets**

Source: Arconic, Arconic website, Alcoa Inc. investor presentation, Alcoa Corp. Form 10

1) *As per Alcoa Corp. presentation Nov 16, 2016.*
2) *Based on 2015 production. Includes both equity interests as well as AWAC wholly-owned subsidiaries.*

1 Arconic is Focused on Attractive Markets With Multi-Year Tailwinds

Arconic 2016 revenue by end-market(1)



Arconic's Key Markets Are Aligned with Global Megatrends

- **Rising Middle Class:** "Emerging Asia" adds 100M new passengers each year; ~2x global air passenger journeys in 2035 vs. today
- **Urbanization:** Continued urban population growth drives heightened building and construction demand
- **Energy Efficiency:** Consumer preference and increasing regulations drive demand for light-weighting and energy efficient solutions across transportation and building and construction

ARCONIC

Source: Arconic
1) 2016 third party revenue of $12.4B by end-market, excluding discontinued operations.
2) Includes brazing and automotive sheet.