- AFP growth has been well above industry margins that are sustainable over time.
  - 14% revenue CAGR and 12% operating earnings CAGR 2010-2017, with stable operating margins at approximately 20%. 
AFP is a robust and diverse portfolio of businesses, geographies, and end-markets.

Our business model is about solving problems by working with formulator customers:
- Performance additives – the classic 2% that makes the other 98% perform better.
- Formulated Products - where we sell a fully formulated customer solution or label claim.
  - high performance coatings resin systems to specialty tire resins to crop protection products.

In many cases, market activation requires us to also work downstream of direct customers to understand the market need and demonstrate to the OEM what is possible.
How does the growth model come to life in AFP?

Let’s begin by discussing our world-class scalable technology platforms which are the foundation of AFP’s competitive advantage and sustainable growth.

- First, begin by understanding current and future unmet needs in the market, which enables multi-generational product plans for every specialty product.
- Second, we focus technology platforms that enable R&D scale, which is relatively unique in our industry.
- Last, our scale and scope advantage versus competitors offers a cost advantage and an ability to fund growth, resulting in a much richer new product offering.

Our ability to leverage multiple technology platforms to create a unique molecular solution adds value for both Eastman and our customers.
Theory vs Proof - Tetrashield story:
- Eastman has been the world leader in modifying polyester thermoplastics for two decades.
- Automotive coatings need great scratch resistance, chemical resistance and weatherability.
- Historically, polyesters have tremendous chemical resistance and toughness but limited weatherability.
  - As a result, acrylics have been used which hold up well in the sun but are not durable.
- Hypothesis we believed that we could leverage our Tritan monomer into a polyester coating to deliver far superior durability and chemical resistance while solving the weathering problem.
- But, we needed partners at the formulator and auto OEM to prove the theory.
The year was 2015. 6,000 miles away, in India, a major OEM realized they had a significant issue. The coating on their flagship SUV was fading, which was no longer acceptable for their consumer. The significant growth in the Indian middle class, along with greater presence from western OEMs and the increased focus on vehicle resale value, started eroding their market share. A visionary company like Mahindra would not just accept their fate, but started seeking a solution. Mahindra had a choice to make:

- shift from their single-pass paint system to a new two-pass system, requiring them to invest significant capital and pay for a more expensive paint
- or, find a superior technology to create world-class appearance and durability on their existing paint lines, preferably with lower VOC than the current solution.

With both companies motivated to win, we locked arms and committed to developing a solution.
• It must be a “drop in” solution, as in, require no additional investment in paint line capacity and be deployed using existing equipment.
• To “drop it in” required a level of capability Eastman simply did not have, especially not in India.
• So we get busy recruiting and hiring world class talent and begin work.
Then, Mahindra’s chief procurement officer finishes the “developing a solution” sentence by adding the words “in 15 months”.

It typically takes 5 years to develop such a solution

But he was set on 15 months.

From that point forward, time was not on our side.
• We assessed where we were.
• We needed to accomplish three things:
  o first and foremost, prove to ourselves that we can scale this up,
  o second, prove to Mahindra that this technology is worth taking a
    chance on, and putting it on their flagship product,
  o and third, we needed to bring it to market, on their paint line, dropped
    in, seamlessly, in what was now less than 15 months.
• So, we worked to find a partner with a serious unmet need (we had that
  with Mahindra), then find value chain partners who are capable and
  motivated to work with us.
In came Mahindra’s paint formulator, Kansai Nerolac.
Over the following 11 months, our teams worked seamlessly and collaboratively.
Together,
  o  we could get the formula to work,
  o  we could implement it on a paint line,
  o  and make a great looking SUV (no small feat by any measure).
But, we had to convince Mahindra that their customer could drive their SUV in the Indian sun for 3 years, and have it look the same way.
That required yet another partner, the National Institute of Science and Technology to simulate exposure to the sun and the weathering performance was confirmed.
The result was nothing short of a miracle, to the Eastman team, Kansai Nerolac as well as Mahindra team. The Tetrashield-based coating outperformed the commercial control in every way:
- Gloss retention after 1500 hours, the equivalent of two years of sunlight increased two-fold with Tetrashield.
- So did scratch resistance and corrosion resistance.
Mahindra was ready to scale the technology in their SUVs.
• By this point in the story, it is T-4 months.
• Mahindra orders a trial quantity, and a limited lot of vehicles are painted, and the trial is a success.
• Only 4 months later, we find ourselves two hours away from Mumbai, India, commercially launching the product, in a color called Solitaire White.
• Being there to see the pride on the faces of team members from all three companies as SUVs started to roll off the assembly line was a tremendous moment.
• The first chapter of the Mahindra story is a success.
  o We now have 300,000 painted SUVs traveling the roads of India.
  o We were privileged to be recognized by Mahindra as their innovator of the year, along with our partner, Kansai Nerolac.
  o For a resin supplier to be recognized by an OEM is quite unusual, something that did not go unnoticed in the industry.
When you put it all together, not only is the Mahindra story a commercial win, but also as a very compelling proof point of our business model. It is the way we intend to win in the coatings industry, as well as other industries where our formulated solutions bring compelling value. It is the story that brings all three elements of our innovation-driven growth model to life in full splendor.

- Our relentless market engagement, global in nature, and broad across the value chain, uncovered a unique opportunity.
- We were able to target our global application development capabilities to translate this into a need at the molecular level.
- Our commitment to decades of leadership in the polyesters technology platform created solutions and a long list of successes in Advanced Materials and, now, we are beginning to create a whole new set of markets in coatings.

It's important to underscore that our AD enabled rapid screening and testing of the solution, proof of the superior performance, and scale-up across the value chain, from our polymer lines to our customers’ paint formulation to their customers’ paint lines.

This is a perfect example of how we win. It is how we have won at Mahindra, and how we are winning with major western, luxury auto OEMs. It is how we are winning in other coatings applications, ranging from transportation, to industrial or food packaging. It is our way of putting it all together: globally, seamlessly and quickly, again and again.
As you can see, we’re all about scale.
  o We start small, but with big in mind.
  o For Tetrashield, it started with Mahindra, then grew to other monocoats, then two coats, then clear coat.
  o We now have ten coating formulators working with Tetrashield and six auto OEMs that span from the top of the luxury market to entry level cars.
  o In addition to transportation, we already have some early wins in industrial applications, where we replace epoxy with a one coat solution that is not only more durable, but offers significant labor savings.
  o The same goes for metal coatings in packaging, where BPA non-intent legislation is aggressively driving change.
  o In fact, can packaging coatings is likely to deliver the most volume growth in the short-term with the strong BPA-free driver that has already driven our Tritan success in AM.
  o These opportunities add up, and the market is significant.
In executing the strategy, we have embraced requires sophisticated market engagement.

- Our strong market leadership provides us access to global markets and customer connections that our competitors simply don’t have.

- First, we must be focused on where we can win and have the best chance of success.

- Second, and more importantly, we must work on the right problems.

- Third, it requires engagement across the value chain and with key regulators and influencers - not just our direct customers.

- We are very proud of the progress we have made, and nothing drives that home better than the graph on the right side of the slide.
  - Eastman customers invested 100% more time with us in 2017 compared with 2016.
  - We look at this as a measure of our relevance to our customers.

- The result from this increased interaction is also helping fuel a 50 percent increase in new business closed.

- Innovation pays twice.
  - In the short term, it provides more access, protects existing business and gives privileged access to new opportunities.
  - In the long term, it provides sustainable growth.
Our market engagement also pays dividends through our acquisitions, in this case, Taminco in late 2014.

Let me now share how we are changing our engagement with the market in our animal nutrition business.

We all know that the world is getting bigger – but it is also getting hungrier.

And the growing middle class is developing a taste for protein.

But it takes more land to raise animals than it does to farm rice and soybeans, and there is an increased competition for natural resources to produce high-quality protein.
In addition, over the past 50 years, meat producers commonly used growth hormones and antibiotics to ensure the highest yields.

However, today many animals have developed a resistance to current antimicrobial solutions.

In addition, regulations are eliminating antibiotic and growth hormone substances in meat production because research demonstrates that these drugs can be passed through to the people consuming them leading to reduced antibiotic efficacy in humans.

Therefore, new nutrition supplements are needed to achieve two things simultaneously:

- efficiently enhance the gut health of animals, promoting their welfare and growth,
- and reduce the environmental impact.
Before 2014, Eastman knew about this trend but we addressed it as a product supplier with a fairly limited product range.

With the addition of the Taminco business in 2014, we now have a robust portfolio of solutions to combat these challenges along with some emerging products that Taminco had in development.

More importantly, we now have the scale to invest in a deeper capability to engage in the market for product and formulated solutions development.

To inform and develop solutions, Eastman has been engaged in this market on the ground, with farmers and feed producers.

Feed mills around the world employ PhD nutritionists to formulate a variety of diets to achieve the greatest growth results for the best return on investment.

As such, nutritionists are the primary focus for our business because they determine the value of additives.

Focusing on these key leaders to come up with new solutions, and partnering with them to develop specific blends and mixes for their feed needs through application development, is extremely important.

In fact, we have hired our own animal nutritionists to better understand the challenges.

That is how we bring application development to life in the Animal Nutrition space.
• We are currently offering a portfolio of additives which focus on food preservation, water acidification and nutritional optimization.
• Our main innovation growth focus within this space will be in digestion and gut health, mostly for swine and poultry.
• In addition to focus, we made significant investments in our commercial capability.
• We now had a broader, more relevant product portfolio, but we needed the resources and processes to execute this strategy.
• We added a dedicated sales team, with expertise in the field.
• We added capability to the team that can interact with the value chain in ways that were not possible not too long ago.
• As a result, we saw double digit volume growth and much improved value capture.
We are also seeing great progress on our new innovative product launches.

In the poultry sector, feed costs represent a considerable part of total production costs.

Optimizing feed cost and feed utilization efficiency are critical for today’s animal production industry.

The feed market is continuously looking for additives which can reduce total feed cost.

Eastman has developed a new product -- Eastman Enhanz™ – that improves the feed conversion rate and the digestibility of proteins and fats, while reducing the effects of oxidative stress.

Also, a challenge pig growers face is during the post-weaning period, when piglets are extremely susceptible to all kinds of digestive disorders as a result of environmental, physiological and social stress factors.

The supplementation of Eastman Protural™ is an effective feeding strategy to alleviate post-weaning complications without using antibiotics.
When you take our market insights, application development and technology solutions and wrap them in Eastman’s world-class commitment to sustainability and the environment, and our award-winning supply chain to deliver high quality products, you have a formula for success that cannot be matched by new entrants or startups.

The full animal nutrition story is yet to be written, but we are excited about the first chapter, and are continuing to build capability in a market with very compelling macroeconomic growth drivers.

While we are focused on innovation today, I also want to emphasize the value of great commercial execution.

Across AFP, much of what results is great market engagement by our sales, technical service and business teams, fighting for value and share every day.

We have made significant investments in these capabilities and you will start to see the return on investment.
• The third key ingredient of our growth model is applications development.
• Our applications development capability is the key link between our relentless market engagement and our technology platforms.
• While we have always had technology platforms and strong relationships with our customers based on #1 or #2 market positions, our limited applications development capability has been a barrier to growth.
• We’ve addressed this with our enhanced focus on key applications platforms, which allows us to translate needs into a molecule, as well as the reverse (a molecule into a market solution).
• This substantially increases the probability of market success, as has been the case with TMCD in paint formulations, or specialty polyolefins into hygiene applications.
• Our ability to go from molecule to a paint formulation or to a painted body panel or from an additive to a rubber formula to a tire compound is essential to bringing a concept to life.
• Our knowledge of the application allows rapid screening of solutions, and our sophisticated accelerated testing capabilities create the customer and OEM confidence needed to adopt our solution.
• Last but not least, a deep understanding of the application, as well as the competing solutions, allows us to create a winning outcome for Eastman as well as the value chain.
• Since 2010, we have been on a journey to transform our investment in applications development.
• We have:
  o Increased our % of applications and product development resources to all R&D resources by 100%.
  o Increased our number of customer/value chain co-innovation efforts by a factor of 10.
  o Increased portfolio value by a factor of 2 and the number of new product and new application programs 20-fold.
• This transformation has had a dramatic impact on our ability to drive growth and interact with the market.
• For the last decade, the global automotive industry has been setting new standards for fuel efficiency in their fleets.
  o Terms like CAFÉ standards and more have become a part of the modern industry lexicon.
• Additionally, public concerns for safety continue to increase, and auto OEMs and their suppliers continue to feel ever-increasing regulatory pressure to improve safety.
• Tire manufacturers find themselves in the crosshairs of these two drivers.
• However, to their credit, they have chosen to embrace change and view it as an opportunity to continue to move to higher ground, as more than 300 Asian tire companies have emerged in the last decade.
• As standards and expectations for fuel efficiency continue to increase, the number of “off the shelf” solutions decrease.
• As a result, OEMs and tire manufacturers need to call on innovators, like Eastman, to help expand their thinking and increase the performance of tires.
The industry was faced with a long-standing paradigm of inherent trade-offs between rolling resistance, wet grip and wear.

As the tire manufacturers focused on rolling resistance by adding silica, they were running into a problem.

- Silica is slippery and they were losing traction.

Unwilling to trade one for the other, a new way of thinking was needed, and in came hydrocarbon resins, previously used in adhesives applications.

Working with the tire companies, we discovered together that our tackifying resins could help address the traction issues and we have already seen growth in our current products.
At Eastman, we are uniquely poised to answer this call – not only because of our decades supplying the tire industry with rubber chemicals and performance additives – but because of our deep expertise in hydrocarbon resins.

Beyond tires, Eastman is the world’s leading provider of broad range of technologies from pure monomer resins (PMRs), C5s, C9s, and rosin resins. Our competitors typically have only one technology platform.

Our strong and diverse technology position combined with application development expertise we have developed enables us to leverage a variety of hydrocarbon resin chemistries to help manufacturers create true brand advantages in the marketplace.

And as a result, we launched Eastman Impera™ performance resins.

Impera tire additives help optimize wet grip and rolling resistance without compromising other key performance characteristics or processing.

Adding even a small amount of Impera fine-tunes performance, potentially avoiding more significant formulation changes or even tire redesign.
However, these tackifying resins were developed for adhesives, and they mostly designed to interact with polyolefins. They were not designed for rubber and styrenics in tire applications.

And for innovation to occur, the market needed, an innovator with deep understanding of the application, deep understanding of structure property relationships of tackifiers, ability to develop and scale up new products and prototype them in new applications.

To make it more interesting, there are a variety of rubbers being used, both natural and synthetic.

We had to develop expertise to match our resin formulation to a variety of rubber compounds, something that is fairly unique in the industry.

By working closely with a major tire producer, we launched two new-to-the-world proprietary resin families developed for tire applications that have superior performance to existing resins.

The initial products have demonstrated the possibilities innovation brings.

More importantly, the concept can be adapted to additional products and therefore we are excited about what lies ahead.
But the industry just upped its game, again. And the race is on to deliver on the next generation of performance and fuel economy standards set to take effect in 2021. We have built multi-generation technology plans in collaboration with several tire manufactures, under joint development agreements, to bring the next generation of Eastman Impera to life.
And that's just the story for cars; work on truck tires is just beginning, and the opportunity there is even larger.
• As we reflect on the Impera® story, it is clear how all three elements of our growth formula work in concert to create a compelling story.
• While engineers tend to read things left to right, it all begins with relentlessly engaging in the market, with not only tire producers, but also regulators and consumer groups, to understand what is needed.
• We then combine that with our deep understanding of the application, to translate what is needed to a molecular level.
• Our commitment to a number of technology platforms creates a broad list of what is possible.
• At the intersection of what is needed and what is possible lies the novel solution
• However, a novel solution is just that, were it not for the capability to prototype it, bring it to life in language that is relevant to the value system, and ultimately having the channel connect and credibility with OEMs (in this case tire companies) to bring it to market.
I have shared with you three exciting stories.

However, our business is not just those three stories.

We are already winning through innovation.

In fact, we closed approximately $100M of business last year from market development and innovation.

We have programs that address large market opportunities, and are planning to capitalize on them.

We expect our new business from innovation to increase significantly as we build momentum in several platforms.
• How does this exciting growth formula translate into a financial outcome?
• It all ties back to how we relentlessly engage the market.
• First of all, we participate in markets where we can identify niches and develop applications that grow persistently above industrial production.
• Additionally, by investing in applications development anchored into our technology platforms, we’re able to innovate, leverage our deep customer relationships, and add to the above industrial production volume growth.
• And last but not least our scale and cost position allow us to maintain our margins that we have today.
• I hope you see why I am excited about our future.
• We are on a pathway to make a great business even better.
• By executing this strategy, we are on track to have a $4B business with $1B EBITDA with stable 20% operating margin, growing operating earnings at 5-7% per year.
• We have made strong progress towards this goal in 2017, and are off to a strong start in 2018.