



# **Celanese Corporation** NYSE:CE

## *Analyst/Investor Day*

*Tuesday, May 01, 2018 1:00 PM GMT*

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# Call Participants

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*Chief Operating Officer*

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## ATTENDEES

**Unknown Attendee**

# Presentation

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## Mark C. Rohr

*Chairman, CEO & President*

Good morning, everyone. It feels a bit like a funeral in here, so I -- and I hope you guys will chat it up a little bit, ask some questions. This is actually Celanese's 100th birthday, believe it or not. And it's 100 pretty impressive years. Having said that, it's gone through a lot of change, and we'll talk some about that change as we get started. Maybe I can kick it off with a few housekeeping items.

Your exit is, when you turnaround, of course, is to your left. And in the event of any kind of emergency, the banquet manager will instruct us on what we should do. But the key thing to remember is stairwells A, B and F. So if we're asked, for any reason to leave the hotel, you will go down stairwells A, B or F.

Restrooms are kind of diagonally to your left when you go out here. And we'll take a break before we start the innovation showcase, and after that showcase.

Just to complete this sort of geography lesson, the innovation showcase is -- are in the next 2 rooms here, and you'll be in there shortly.

As we go through this process, I am going to make a number of projections about performance, and that's going to be based on our best estimates on what the world looks like. We're always diligent with that process, but I encourage you to remember that things can happen outside of our control, as much as we don't like that, so be thoughtful about these numbers and use them appropriately.

Starting with the agenda, I'm going to kick this off in just a moment and I'm going to give you a brief overview of Celanese's performance for the last 6 years and a bit of our history with that, and how we think we're in place today to deliver a earnings CAGR of about 14% over the next 3 years, and a free cash flow CAGR of about 13%, and how we expect to end at \$11 per share, in that range, in 2020.

Scott Sutton will follow me up to the stage after that. Scott's going to start with a discussion on Acetate Tow. And we thought it was important to help you understand why we're so confident that we can keep those earnings flat through this timeframe, and how we also still have optionality to replicate something similar to what we presented to you last June with the Blackstone venture. Excuse me. After that, Scott will move into the Engineered Materials business. I think the story we have there is a very unique story and it's probably the highest growth story within the chemical sector. Scott will give you a lot of details about that. And specifically, what makes our model so unique, how we drive value in that model that others can't drive, and how we expect to be able to continue to do that as we go through the next several years.

Scott's going to talk about 5,000 projects in 2020 and how we make that possible, and he's also going to introduce and talk to you about a concept that we use always internally, which is called embedded growth.

Todd Elliott will follow Scott. Todd, of course, runs the Acetyl Chain. And in that, Todd's going to take you through all these fundamental elements of that business, probably most understandably, the supply and demand scenario that's in that business and talk about some of the misconceptions people have about the volatility of that business. So we'll try to take you through that. That tees up, if you will, a great environment for us to drive value for a lot of years going forward. He's going to share specific impacts of the China regulatory environment. He's going to introduce our own internal model as well that we call the activation network, or network activation, which is how we measure the degree of interactions we're having commercially in the marketplace to drive value. He'll talk about partnerships, volume and growth and expected margins in that business.

That should get us to 9:30-ish. Hopefully, a little bit before 9:30. At that time, Scott Sutton will get back up, along with Verghese Thomas, our Chief Technology Officer, and they will share a little bit of highlights about the innovation showcase, and I'll let them do that in a few minutes when they take the stage. After the innovation showcase, Scott Richardson will step up, our CFO, and take you through sort of a roll-up summary financials of all the information that you've heard. Cumulative cash flow, operating cash flow of

\$4 billion, free cash flow of \$3.2 billion-ish kind of range, how we intend to reuse that cash, how we intend to return a portion of that to shareholders.

So that's it, then we'll wrap up with Q&A and try to get you out of here a little bit after lunch.

Okay, so it is our birthday, so you have to be nice to us today, special day. 100 years ago, the Dreyfus family formed Celanese Corporation and cellulose acetate, really to be in the yarns or fiber business. And I won't spend a lot of time on that, but to say that, that family established, still quite famous today, a base of philanthropic engagement that's really pretty impressive. And the core of that, the core of sort of giving back and service, has been a real core of our company ever since. We are focused on being a good corporate citizen. We spend a lot of time, energy and effort thinking about what that means, both in terms of how we conduct ourselves, what we do internally and externally.

We're very committed to our employees, to their growth, their well-being, to their personal development, to see that they achieve everything they wish to achieve in life. And we work very hard to create an environment that's very welcoming and inclusive for all.

Celanese proudly lends its voice to speak out when we think folks are being taken advantage of. We support equality in every shape, and we are very active in doing that around the world. This sort of culture of service may be an unusual way to talk about a company, but that really drives our performance, because we feel that service to one another.

If you look at it, some easy ways to talk about that are safety, environmentalism and community work. We've reduced safety incidences 45% over the last several years.

Process safety incidences, these are things that lead to big events, so these are leading indicators, by 84%. That's top decile performance around the world for any industry, but especially the chemical industry.

Environmental, 40% reduction in our waste intensity. That's waste per ton of production. 31% reduction in greenhouse gas emissions. We've been receiving a lot of rewards over the years for our energy efficiency efforts, much of which our productivity is centered around.

In community service, last year, the employees at Celanese volunteered 170,000 hours in the communities. That's 2 days per employee per year. Tackling things as far-reaching as orphanages in China; refugee crisis in Europe, where Celanese has stood up in Germany in a real big way to bring a lot of industry around trying to create jobs and gainful opportunities for those men and women who find themselves in Germany; to work in the U.S., primarily inside the classroom and intercity schools, in and around the classroom, helping to support children. That process of service, you really see being applied as well to what makes us so structurally unique.

Celanese has exceptional positions in our technology. We are truly technology leaders in these little spaces that we're in. The polymer breadth that we have that Scott will take you through is unmatched in the industry, as are our global networks. That puts us in a position where we can respond to things in a different way than others, whether that's understanding really product and demand flows from around the world, the capabilities to produce or not produce, how we look at and assess information from those individual companies, is different and it lets us do unique things where the others can't. We grow by leveraging everything within our company: Our assets, our technology, ourselves, who does what within the company is really an important aspect of what we present. In that leveraging process, we're finding the ability to translate the success to more and more things, and so you hear a lot about translation as we go into that. Technology translation is easy to understand. There's also commercial translation. We'll give you some examples of that.

And net of all that, it's all about cash. So our ability to generate cash and use that cash in a very, very efficient way. It's led to some pretty strong growth numbers. It's led to real expansions in margins for us, strong growth in earnings, strong growth in free cash flow. And with that, enough cash to return a fair amount of cash, \$3 billion since 2012, to shareholders.

If you take that a step further and just look at sort of the expectations of the corporation, we put out, stood on this stage, actually, in 2015, and put out a growth plan that was pretty ambitious. Double-digit growth in -- by all metrics. We introduced a pipeline model, which people didn't really understand, and didn't really have any real true value for at the time, coming from a reference point of 300 new products being introduced per year. We talked about our ability to increase our cash generation and use that through dividend growth and share repurchase. If you don't know us, every one of those metrics has been met or exceeded over that period of time. Every one. In spite of about \$150 million of headwinds that came to us, it was totally unanticipated. That performance leads to strong earnings, obviously, and strong free cash flow. We're on pace to be well above \$9 a share this year with earnings, and we're on pace, we think, to be in the mid-\$900 million kind of range of free cash flow. And with that free cash flow, we've been able to do very thoughtful investments. Two categories of investments we've been really involved in, one is incremental expansions in energy and things like that. Since 2012, we've invested about \$0.5 billion in those sorts of things, and it's generated about a 24% return in that. As we look forward, we'll share more details, we expect to double that rate over the next 3 years with the opportunities in front of us.

We've also gone to a position of really being focused on acquisitions. We moved to that position and we developed a lot of efficiency there. Over the last 15 to 16 months, we've done 4. Those 4 acquisitions have brought in about \$600 million of revenue and have given us opportunities for 1,800 different projects, programs, out there. So it's brought in capacity, it's immediately accretive, it's also driving great growth opportunities for us as a company.

We've also been very predictable in returning our cash to shareholders. And we've been on a run rate of well north of \$700 million for the last several years. Our current dividend is about \$280 million annualized, and you should expect, and we'll talk more about share repurchases in the future, we'll be staying at that kind of pace as we go forward. And that has been recognized by the market. So thank you very much.

Celanese has operated with a TSR of about 151% over the last 5 years. That's 2x anyone else in the industry, any of our peers or the Dow Jones Chemicals Index. If you look at it on a 3-year basis, it's about 3x. So we're very proud of this. But we're also very proud of the fundamentals that got this -- made this happen, and we're very confident as we apply those fundamentals through the next 3 years, you're going to see the same kind of results.

So let's shift forward just a little bit. We are very well positioned for growth over the next 3 years. In fact, the world has really changed a lot in just 3 years. We've changed at Celanese and the world has changed a lot. The escalating need for solutions out there for our products is just growing, and it's growing at a pace that, frankly, is outstripping even our demand to satisfy. The increasing customer complexity that's felt also comes back to create unique opportunities for us, and we'll share a lot about that as we go forward. Demand growth in all of our businesses is there, and the capacity utilization rates for all of our businesses are getting pinched. Now what that really means, it doesn't mean people are running out of stuff, but it means that the opportunities in front of you start to accelerate, and you have more choices to make good decisions on where you invest your money, the things that you do and how you bring value to shareholders. We have the broadest positions in the world. And I know it sounds silly to you guys, but you'll see in a bit how we measure that and our ability to lever this broad portfolio with the networks we have, and our global range is unmatched. And it's unmatched commercially and we drive more value than anyone has commercially for doing so.

The models that we use are getting better and better. We put a lot of energy and effort, working to make sure that we are more and more efficient with how we approach the market, how we develop our products, how we get them into market, the decisions we make. We constantly push and pull, audit and assess and do it again and again. That development of those models and that agility puts us in just exactly the right spot as the world gets tight. Because we have the ability to do things others can't. We have the ability to process information others can't. And we can respond faster than anyone to those opportunities that are out there.

And lastly, it builds us an opportunity to grow. Celanese has not been in the growth business. We've been in the make-it-better business. So we've got revenues that's been fairly flat. If you look at our volume, the volume numbers out there, you'll see we're not really actively pursuing, I'm setting aside EM for a minute,

any kind of real volume addition. It's coming to us today in a way that's really positive. By that, I mean it's not disruptive. And so we have built into this model modest growth, but nonetheless, you'll see it's very, very accretive growth, and something that's going to add materially to earnings.

I'll talk just briefly about each dynamic before I turn it over to Scott. If you look at Engineered Materials, we have, for a while, been able to differentiate ourselves in the marketplace and actually have a rate of growth a bit above the market. So you need to think of sub-5%, it's probably more like 3% of 4%, base market growth in this business. In all of these product lines, we're entering a period of tightness. In most all of these product lines, a period of tightness, which again, gives us commercial flexibility, it gives us confidence of price, gives us confidence to get returns that makes sense. But what you guys don't see, and what Scott will share more with you on is what we call embedded growth. Embedded growth is our ability to go into a model of a vehicle and change that same vehicle one year to the next in a material way, or modify a home appliance. So it is the rate of change to address the needs of customers that really drives that embedded growth. I'll give you one example; Scott will give you several.

If you look at year-to-year comparisons, first quarter to first quarter in automotive, the industry grew 3.9% per year. We grew 24% volumetrically. Of that 24%, part of that was M&A. Part of it was M&A, about half. So we've got 3x the rate of growth, apply this across every business we have, across every consumer good out there that uses materials. That's what we see. And our machine lets us go tackle those things. So we have the ability to grow, and we think we'll continually have the ability to grow at a pace much faster than the general industry grows.

That really rolls through in Engineered Materials. We expect by 2020, to earn over \$900 million of EBIT per year in this business. We'll be able to maintain our margins, the embedded margins, our margins inside the company, at about 20%, and we'll take you through how we get to that number. We expect high single-digit volume growth throughout that period. We will be running 5,000 projects per year, which means we have to manage simultaneously 10,000 projects. And we're expecting to do a couple of transactions per year, like we've been doing.

You see we broke this down into 3 categories. Pipeline, it's about \$130 million. You guys understand the pipeline. We're introducing a new concept for you guys, we call it technology programs, but these are areas of focus for us. Really, it's a pipeline concept where we're pulling out a specific market area and going after that. We'll give you some examples of that. And acquisitions should add about \$80 million over that time period.

In acetyls, it's a pretty similar story in many ways. This is a business that has had a very low rate of growth, low on average versus materials, 3% to 4%, but it's been very steady over time. Very steady over time. It's an industry that classically operated at 85% to 90% capacity utilization and at high industry margins. And then China showed up, with a vengeance, in 2008. 2008 to 2013, there was a flood of just plants built in this market space, and drove down capacity utilization down into the low 70s. Demand didn't change. Chunks away, chunks away, chunks away in that period of time. What we've seen is a continued growth in demand and the really absence of any capacity additions, we have pinched that business. So we're in the upper right-hand side of that curve. Business is tight. That's helped support some degree of margin lift. And you add on top of that what we do to enhance that, and you're seeing today, operating margins in the 20% range.

There's a new thing going on, though, and that's called China reform, and there are a number of regulatory initiatives in China, across China, that we're very well aware of, down to the plant-by-plant level, and we believe that process is going to also further reduce the available capacity in China. So Todd will take you through all of this in a few minutes and help you understand why we think that business is going to be tight and why we think it will remain tight for a very long period of time.

When you look at that in terms of the power of this business, we're expecting to go from \$575 million in '17 to also above \$900 million of EBIT in this period of time. Volume growth is about \$150 million of that, and that sounds like it's really horrific. It's really not. It's only about 3% to 5%. But we've not been growing volume in that process, and this volume is right here for us today.

Industrial utilization is really the benefit we see of lifting these -- a more respectable margin, I would say, over a period of time in the business. So all elements of that get lifted a little bit, if that makes sense. So think of that as pricing as well. It should add \$90 million. And then the model that we use and we talked so much about, that we outlined well to you last time we were here, will add about \$80 million over that period of time. So \$25 million to \$30 million per year, we think we generate out of that model, and that gets us to \$900 million. 20% average margins for that period of time, and the internal investments we're doing have at least a 25% return.

So before I turn it over to Scott, let me just roll that up really quickly for you guys. We have been on the path of very consistent earnings and cash growth. And everything I see about where we are today, points to the fact that we're going to continue to do that. The business is better, the world is better, the markets are tighter, people are more disciplined on how they approach those markets. We're different than anyone else on how we do this, and there's no reason we're not going to keep that unique position. And in fact, it's unassailable in so many ways. We're going to be able to generate these numbers. We'll have a 10% CAGR on EBIT growth for this period. We'll have 11% CAGR, I think, on revenue as we go through it. Free cash flow should be about 13%. And we plan within this to return \$2 billion to shareholders, which should be \$1 billion through share repurchases and \$1 billion in dividends, in that period of time. Okay? You guys okay? All right, Scott?

**Scott McDougald Sutton**  
*Chief Operating Officer*

So thanks a lot, Mark, and good morning to everybody. First of all, I'm really pleased to address our Acetate Tow business right up front, because we really do have a better storyline here. I mean, this is a solid cash generation business that's been in decline, that we've been able to stabilize. And so what we'll put forth here is really a base business plan that keeps earnings flat through 2020, compared to 2017. And we'll also show you some strategic upsides that are in the business that can add to that \$2 billion or \$2.5 billion of value that does sit in Acetate Tow.

What I'll say is that this is a much calmer marketplace, and it's calmer because the tow inventory reduction, both inside and outside of China, well, that's behind us. Also, the acute reduction in demand in China, because of austerity measures that were applied there, well, that's behind us as well. Also, the pretty significant reduction in imports of tow in China, well, that's all done, too, and the reduction in imports happened because the acute reduction in demand that I talked about, and also, there were capacity additions, that really tend to put China to being self-sufficient. So those imports have come down to 10% or 15% of what they were just a few years ago.

Our China dividend, which, by the way, represents about 1/3 of our earnings in this business, it's going to grow. And it's going to grow because of a final expansion that's being done in China. We actually have 3 joint ventures in China, and one of them is called our Zhuhai joint venture. It's doing an expansion. This is likely to be the last expansion that will happen in China as it goes on its path to being self-sufficient in the supply of tow. It'll start up this year, and after that happens, Celanese, along with its joint ventures, will have about a 70% market share in China. So we will get some positive value creation out of this.

Second, we do have some innovation in this business as well, really, in 2 areas. The first area is in the heat-not-burn segment. So this is a collection of devices and tobacco sticks, where the tobacco is actually heated up, but is not fully taken to the point of combustion. So when you don't take it to the point of combustion, you don't have a lot of the compounds of concern that come out of that, but you still get the nicotine delivery. So this segment is growing very fast. These tobacco sticks use a special form of tow that we supply. We're already in this commercial business, and that brings higher value, higher pricing as well.

Also, Celanese has its own filter, and it's actually based on some of our Engineered Materials and carbon. It fits to a normal cigarette. It also reduces the amount of compounds of concern that you inhale, and we're in this commercial business as well. So there is some upside coming from innovation.

We also have a lot of cost savings left, or a lot of productivity left in this business as well. And through the years, I mean, Celanese has been a good steward of going out and getting productivity. In fact, we have averaged about \$100 million net productivity every year. This year and forward, maybe it's closer

to \$50 million of net productivity, but the productivity in this business is a big part of that. And there's a couple pieces of work left to do. There's still cost savings available in our overhead, and how we use raw materials and our energy intensity and efficiency in this business. That's worth about \$10 million per year of earnings. And on top of that, we're going to close an asset early in 2019. In fact, we'll be announcing the closure of that asset shortly after Investor Day. So that closure, along with some associated activities, will give us about \$30 million per year back into earnings. So the sum of that productivity yields us \$40 million to \$50 million of earnings by the time we get out to 2020. So that's on a run-rate basis.

So when you look at the business plan going forward, it does look flat in terms of earnings. And yes, I do think there will be a little bit of price erosion, there will be a little bit of volume erosion, but those 3 things that I just talked about, the increase in our China dividend, the innovation we have in the business and the productivity we have, will offset all of that. And then on top of that, we're going to be working on strategic options, right? One strategic option that we tried, I think everybody is aware of that, was the joint venture of our global business with Blackstone's Acetate Tow business. And that would have yielded significant shareholder value. That transaction basically did 3 things: Number one, there was a lot of synergies, particularly from cost savings, in that transaction. But number two, because of leveraging it up and cutting an initial dividend, we were able to monetize a good bit of that \$2 billion or \$2.5 billion of present value that sits in there and use it for other things within Celanese. And number three, it actually provided a long-term exit path for the business as well. We could have spun it or IPOed it once the business was corrected. So this was really a novel type of transaction that could have added a lot of shareholder value.

But we still have options to do that. In fact, there's 3 options out there. And the first one, really, is doing coproducer deals, either on acetate tow or acetate flake. Acetate flake is a precursor for acetate tow. And really, what that would do is it would accelerate the closure of additional assets and maybe even provide some more asset closures above what's in our base plan. But we're also looking to evolve that number one item into number two. And number two is to consider doing a completely global manufacturing joint venture. And in that scenario, you'd still have independent marketers, but what you'd get out of it is a lot more cost synergies. Again, the ability to close down more assets, and still having the independent marketers, and it wouldn't be subject to regulatory approval either, or not much.

And there's a third option. And the third option is very similar to what we tried to do with Blackstone. It really is a full-functioning global joint venture where you don't necessarily change the number of marketers in Europe, and therefore, regulatory approval is likely doable. So I mean, look, in closing this business, what I'd say about it, right, is we're working all of these items, right? And we continue to make progress in all these, and we'll keep you posted on where we come out, okay?

So that's our Acetate Tow business. What I'll do now is move on to a powerhouse business in Celanese. And that powerhouse business is our Engineered Materials business, right? We like to call it EM. And so this business, it operates in a robust market space, and we apply the broadest solution set in the industry, and we do that through a novel model that matches up that solution set to those robust market opportunities. And on top of all that, we can still grow this business through specific initiatives, and we're going to review a subset of those initiatives today. What I'll say about this business, it has a track record of earnings growth, and particularly since we implemented a new model in 2015. In fact, this business is approaching being able to add about \$100 million of incremental EBIT every single year. And like Mark said, I mean, we came to you at our last Investor Day and we made certain commitments, and we believe those commitments are met. The first commitment was to make sure that earnings grew double-digit across that planning period, and so they've grown at upper teens, in fact. So that commitment's met. The second one was to grow our project pipeline or our opportunity pipeline at 20% a year. Well, in 2015, we were able to win about 1,000 projects, which was up from 2014. This year, I expect us to win about 3,000 projects.

The third commitment was to grow the business through bolt-on acquisitions, particularly in nylon. Since that time, we've made 3 significant acquisitions that were generally focused on nylon business. I mean, today, we're a player in nylon business.



And then finally, we said we'd expand our joint venture earnings. Our polymer joint venture earnings have grown, but there's more work we can do here, and I'll share some of that when we get to the growth initiatives for EM.

I started out this section by saying that we operate in a robust market space, but that may not be perfectly apparent, depending on what lens you look through. And if you look through a macro index type of lens, you don't see that, because all those growth rates are down below 5%, closer to 3%, as Mark noted in his opening. But our customers operate in that space, too. And because of those lower growth rates or those modest growth rates, they're trying to differentiate their products all the time. And that differentiation opens up an embedded market to us so that we can grow much faster than those macro indexes. So let me give you an example of that. Last week was Chinaplas, and Chinaplas is one of the largest polymer shows in the world, it was held in Shanghai. Aside from attendance being up by about 25% from the last time that we held -- that Chinaplas was held; and aside from the fact that Celanese launched 4 new products there, you may have seen the press release for this just issued last night, the request for differentiation and supporting customers in that differentiation was significant, almost overwhelming. So that differentiation by customers, it leads to shorter life cycles and it leads to increased functionality in their products. When you have shorter life cycles and increased functionality in their products, you end up with a lot of complexity. That complexity gives us really an abundance of opportunities, right?

Here's a couple examples, right? If you look just in the U.S. auto market and sort of average the number of new model launches that there were between 2010 and 2017, it was about 38. If you look at the expectation for 2018 through '21, that number jumps up to 57. So Celanese has the opportunity to be a bigger part of each new model launch, even though by absolute terms, the macro index says this business is growing at just a couple percent. We'll triple that. It's sort of the same thing, if you look at the number of connectors, electrical connectors or electronics connectors in a car, in 2007 versus 2017, that's tripled. Again, Celanese EM has the opportunity to be a much bigger share in each model going forward. And that abundance of opportunities is showing up all over our project pipeline.

So what you're looking at here is just a dissection of our project pipeline. It's shown proportionate to the number of projects that exist per market segment. So this really is growing, helping grow Celanese a lot, and there's no cap on entitlement here because of that embedded market, okay? All right, look, it's great to have a robust market space to participate in, but we also need to have the broadest solution set to match up against that robust market space. For Celanese, this is really the matrix of being the broadest polymer supplier in the industry. It's also being the #1 expert at functionalizing those polymers, and it's also being an expert in enabling our customers to use those functionalized polymers, all right? I mean, first of all, we are the leader in terms of being the expert in the largest number of engineered thermoplastics. So if you think about the universe that exists in the Engineered Materials, engineered plastics world, your mind can count between 25 and 30 polymers. And so Celanese is an expert in 20 of those. In fact, we're even back-integrated into 6 of those, meaning we produce the polymer itself. So we're much more than just a general compounder. And if you look at the next 3 or 4 leading competitors in this space, maybe they're an expert in 10 of those polymers. And if you go to the next 4 or 5 leaders, maybe they're an expert in 5 of these polymers. So Celanese is an expert in double what the next leading competitor has. And I would even add on top of this that those competitors tend to run their businesses differently. They may run it separated by polymer or market space, and it may not be coherently globally connected, and that's another advantage that Celanese has. Look, this is a clear, competitive advantage for Celanese that others don't have. And then we're able to multiply that breadth of polymers by being an expert at functionalizing those polymers. So when I say functionalize a polymer, I just mean tailor it to perform a specific duty or make a specific solution. So let me give you an example of that, right? I mean, some customers don't want a plastic that has any hint of odor like a plastic. So we're able to functionalize a polymer so it doesn't smell like a polymer. Same thing, some customers want to use one of our materials in a part that moves, but they don't want to lubricate that part. So we're able to functionalize a polymer to have a low coefficient of surface friction so it doesn't require any lubrication.

And here is where it gets really neat, right? We're able to apply multiple functionalizations to one polymer, and in fact, that's what we do in most of our projects. And if you look at one of the examples that's on this slide, the cosmetics dispenser, right, so a normal lipstick holder, right? The first functionalization we do is

reduce that coefficient of friction on the surface so you don't have to lubricate the moving parts. But at the same time, most cosmetics are really acetic, right? So again, we apply a functionalization to that polymer to make it resistant to the chemicals that may be in the cosmetic. At the same time, you have to make those dispensers out of really thin-walled parts, so we're able to functionalize the polymer to have high strength and high stiffness.

So if you step back and think about what I said in the last couple of minutes, so we have 20 polymers we're an expert in. We have roughly 20 different types of functionalizations we're an expert in. But our breadth of solutions is much more than 20x20, because we applied multiple functionalizations almost in every single project. We have thousands of solutions to solve customers' problems. But it doesn't matter that we have thousands of solutions. We still have to teach customers how to use them, so we have to enable customers across the whole value chain. And the value chain in Engineered Materials is that Celanese is the materials supplier. We normally sell material to a molder, who may injection mold and makes one part. He sells that part to a tier or a systems supplier who assembles multiple parts into an assembly, and then the OEM takes assemblies, puts it together, sells it to the end consumer. And so we use our competencies across that whole value chain.

Take a design competency, for example. We do mold flow design. So we get in there and figure out how the polymer flows in the mold and what the gating is, those kind of activities. We also do structural design for the tier supplier. And then we may do thermal design of the parts or assemblies of parts for the OEM.

So just to summarize that broadest solution set, right, we're the expert in the largest number of polymers, expert in the most functionalizations, expert at enabling customers to use them. That's why we're #1 in terms of having a package of solutions. But yes, again, market's robust. Yes, we're the broadest solution supplier out there. But you also have to have some type of novel model that's able to match up that broad solution set to all those robust opportunities. I think we do. This is our project pipeline model. We work in this model and on this model every single day. If you ask where the real intellectual property is in this business, it's really contained in this model.

And here's how it works, right? There's a sea of opportunities out there, and we're meeting with customers every day. We're having technical seminars with customers, we're meeting them on sales calls. But nonetheless, we're sitting across the table from them. So we go through a process called customer options mapping. And the object there is to discover as many opportunities as we can in their ecosystem, and match it up to our broad solution set and create projects. Then we take those projects, we put them into programs, we prioritize them, we look for trends, and then we translate those trends to other parts of the business. So let me spend a couple of minutes talking about some of the details of how that process works. So right after we go through customer options mapping, really on the next day, we take those projects and we screen them. And we screen them through what we call an expert committee. And it really is just that. It's a global team made up from business, commercial, manufacturing, technology, and they really have one job, and that one job is to determine, can we win that project? If we believe we can win it, we keep it. If we don't believe we can win it, we don't.

Then on the very next day, we take that project and we put it into what we call a program. And a program is nothing but a unique way to focus on some attribute that's going to give us the most growth. So we have programs that are centered around products. We have programs that are centered around technologies. We even have programs that are focused on markets, and might set up a program just to address the needs of one customer.

So what you see here on this slide is our appearance program. So within that appearance program, there's projects from auto, appliance, personal care, all right? We really are market-agnostic, and we're also product-agnostic in how we address a particular solution, right? And then we look at trends and translate. And translation has become a real game-changer for us. So when we first run a set of projects or a program, you get an initial penetration experience curve. It's like the lower left S-curve on this chart. But we're able to take that experience and translate to different areas. Some places we may translate to is a different customer set. We may also translate that experience to different geographies, or we may translate that experience to different devices or different parts. But what you really end up with is a

growth curve that just goes on and on and on. Again, there is no entitlement cap on how we can grow this business.

Look, in the innovation showcase, you're going to get to experience a translation room, where you see how this process works. And on top of that, I encourage you to go look at what we call the project progression poster session that we'll have, because we will talk about a specific example of a project of how we translated it to other devices and parts and customers.

Because we're successful at translating, we really are present everywhere in your life. I mean, this is an example of the last time you went to the grocery store. And I can tell you that Celanese Engineered Materials is present in the product you were buying. It's present in the packaging on the product, it's present in the mechanical and electrical equipment that's in that freezer or refrigerator that's in that supermarket. We're even present on those glass doors, because we make an antifog film. We're present in the lights in that freezer. We're present in the lights in that store. I mean, I'll tell you, we're even present in the frame of that shopping buggy, and in the wheels of that buggy, too. And if you were to think about those people shopping, we're in their shoes as well. We provide polymers that are actually spun that is in some of their underwear as well, right? They have electronics on them. We're present in that. They're wearing cosmetics. I already showed you how we're present in that. And we help them get to and from that grocery store as well. We really are present everywhere.

So we have a robust market space. We have the broadest solution set in the industry. We have a novel model to match up that solution set to those broad, robust opportunities. That in itself is enough to have this business grow at a pretty significant clip. But on top of that, we have very specific growth initiatives. Those growth initiatives really supercharge the growth in this business. And what I'm going to do, I'm going to cover 6 or 7 of those growth initiatives for you now. But the number one thing that we do is work on this model, not just in the model. We do the hard work necessary to make sure we can scale this model so that by the year 2020, we are able to juggle those 10,000 projects that Mark spoke of, and we're able to win 5,000 of those. Remember, this is our IP, and this is where we want to spend the most time, right? In 2015, we put in the model that I've been describing to you. And by 2016, we had wrapped it around 700 team members. In '16 and '17, this model was running and you see the volume that's been delivered by it. And here we are in 2018, and it's time to do some more work in the model, and we're going to come out with what we call EM 2.0, where we extend and excel the model again.

Right, here's an example of what we might do. Remember, I spoke of programs, how we arrange things in those focus areas. Well, we're going to take those programs and the resources that support those programs, and make them infinitely flexible. So as soon as we see a trend, we can create a program to address that trend and then we get the run out on that translation curve. And that's pretty unique because it's not many companies that have a global scale of business and an organization this big that can actually change the way the organization works overnight, as the market pulls on us to be able to do that.

We have a clear growth initiative in our medical and pharma business, right? We're present in the body in terms of implants in the body and drug delivery devices that are put in the body as well. We're also present in all kind of drug delivery devices such as inhalers and insulin pens, pens that are outside the body. We're present in a lot of different kinds of medical equipment as well, in the doctor's office and in hospitals. We have a unique way to approach commerce, though, in this pharma business, and that unique way to approach commerce is growing. And the way that works is we typically charge an upfront technology access fee just to provide enough material to do R&D. And normally, that kind of access fee is a seven-figure type of fee. Then when we move forward, we actually sell on a per device royalty. So we used to sell on a dollars per kg, but we don't do that anymore, right? There's another set of value that we can go after. And because of that different model, this business grows about 4x the underlying macro growth rate in the medical and pharma area. So look, I encourage you, when you go to the innovation showcase, there will be a poster session on medical and pharma, where we'll take you a lot deeper into our pipeline and what the growth opportunities are.

We also have a clear growth initiative in energy storage. Where we're typically present in this business is in the battery separator between the anode and cathode through which ions flow as a battery operates. We're also present, by the way, like in trays for batteries and covers for batteries and parts that are

around batteries. But our model here is also a bit novel. I mean, we try to contract with 100% of the membrane suppliers in the world so that our material becomes the gold standard. But at the same time we're doing that, we're out trying to talk to every OEM in the world as well, because of our market range, to convince them to have the pull-through. But because of doing those things, our business in this area grows about 3x what you might expect by the underlying macro market.

Look, we also have a lot of clear growth initiatives around technology programs that are based on customer pull, and I have a couple of examples of that. We have a functionalized set of polymers for cookware. So in this cookware, the food can be prepared, it can be frozen, it can be cooked, it can be served, it can be reheated, it can be put through the dishwasher and it can be used again. So we're solving a unique customer challenge there, all right? We also have a functionalized polymer that's used for conveyor belts, conveyor chain systems in things like food processing plants, even mining and material handling. It's what you see in blue on that slide. Every bit of that conveyor belt is our material. So we've functionalized the polymer to do a number of things, but certainly, to have low wear and require no lubrication. If you've ever been in a food processing plant or mining, you know there can be a problem with having lubricants or even the water that they use to lubricate the system. Look, we have lots of these. There's a lot of technology pull, but the key thing is, it's got to be based on pull. We identify that pull through that customer options mapping process and the trending we do through our programs.

We've been able to grow in doing bolt-on acquisitions. And I said at the start of this, that we took a commitment at the last Investor Day to do bolt-ons in nylon. We did that, that came in the form of 3 companies, SO.F.TER, Nilit and Omni. They're predominantly in nylon. In fact, Nilit was 100% nylon. So yes, we're a nylon player now. But we got a lot more than just nylon. First of all, we acquired a project pipeline. And remember, this is a project-based business. We acquired about 1,800 projects with those acquisitions. But more important than that, we acquired more project generation machines, especially when you integrate them into our model, which is what we've been working on. And in addition to nylon, we're now in the thermoplastic elastomer business as well, and that's going to be a future area of growth. In fact, that's going to be a targeted acquisition area for us also.

The other thing that we got with all these bolt-ons was a lot of excess capacity. Sometimes, these guys didn't operate their plants on 24/7, and they certainly didn't operate it under an optimized global supply chain like we have. So we've been able to support some amount of our organic volume growth through these acquisitions, and we continue to engage with a lot of companies here.

But I want to assure you that we're going to do this in a very value-creative way. And here's how we think about a bolt-on acquisition. If we look at it and believe we're going to pay some multiple of EBITDA, we target a 10 on average with this whole program, if that's \$200 million, our hurdle rate sort of is, in 2 or 3 years from now, that business ought to be worth \$400 million to \$600 million of value. That's how we think about it. But these acquisitions do come in at a lower percent margin, but you shouldn't worry about that, and here's why. I mean, if you just looked at our business today, call it a 20% base EBIT margin. If we didn't do any more acquisitions, that margin would certainly go up over time as we add scale to this business and we're more successful at bringing in a lot of incremental projects. So we go out and do a bolt-on acquisition, it changes the mix a little bit, perhaps that margin drops by 1% or 2%, but there's a lot of synergy value in that acquisition. So now, you've got synergies working for you, where you are expanding the margin of what you acquired. You've got your base business margin improving as well, it gets back to 20%. We find another good opportunity for Celanese's capital to double or triple it in 2 or 3 years. We do another bolt-on, okay? So also, in our innovation showcase, I encourage you to go to the poster boards for M&A and integration, because you'll learn a lot more about what we have in our pipeline. You'll learn how we're being successful at learning how to integrate these. In fact, integrate multiple of these at the same time. And we're really getting prepared for potential bigger strategic options in doing acquisitions as well.

So this is a part of our growth strategy, and we're going to focus this effort, and we are focusing this effort. And some of the representations in our pipeline now, we're looking at acquiring businesses or companies that are in those clear growth objectives that I laid out. So going back to medical and pharma and energy storage, we have a pipeline of those companies. We're also interested in acquiring companies that are in bigger growth geographies. We've really grown our Asian volumes, but we really haven't

grown our Asian assets proportionately, so that's an area that we're looking at. I said earlier, we have the broadest polymer portfolio in the industry, but there's still some things that we don't have. We'd like to have fluoropolymers; we'd like to have polysulfones as well. So those are pipeline opportunities that we have. There's some higher technology areas that I'd like to be able to leap-frog into, and one of those is into 3D printing. So we have a pipeline of additive companies that we're looking at as well. We already supply a little bit of that into the 3D industry, but this is an opportunity for us to jump in, in a bigger way.

Another untapped area for growth is within our joint ventures. And what we can do with the joint ventures is convert equity income to fully managed business. I mean, these are good polymer joint ventures, but they certainly don't benefit from running our model or the scale of our business. And the equity income that we get from these, of course, it's after tax, but when any kind of enterprise value to EBITDA calculation is done, I generally feel that value is not taken into account. So there's a lot of value to get just from doing a transaction here. And what I would say is we're in discussions on all of these on how to do something, right? I can't promise specific success here, but we'll keep you posted as we do make progress.

And we have a complementary growth area in this business. If you look at the POM landscape, it's changed a lot, and demand has continued to grow. A lot of that is due to Celanese's business. Supply or large increments of supply have really not come into the mix. In fact, if you look out into the future, you'll really don't see any major projects in POM. POM is our largest polymer. By next year, this industry will be running at about 100% capacity utilization. So Celanese gets the opportunity to do 2 things. One, we can expand our margin here; but two, we can invest some of Celanese's cash in very high and fast return projects.

So when you stack all those initiatives up, Celanese really is poised to grow. And if you start at the bottom green stack, that's worth about \$130 million of EBIT, and that's really the project pipeline growth from working on the model, going back to our discussion of how do we continue to scale this model. And what's behind that, what's underpinning that, is today, we're running 5 expansion projects. One of them is a polymer expansion project, 4 of them are compounding expansion projects. By the time we get to 2020, we'll either be running or have completed an additional 15 more projects. Again, both in polymer and in compounding. Then you get to the orange block. And again, this is also project pipeline growth. It's just that it's a little different. It's focused on some of those higher-technology areas that I called out as growth initiatives. Again, it's backed up by our work in medical, pharma, energy storage and a number of those other technology growth initiatives, such as the cookware. And finally, you get to the blue on top. This is the \$80 million of EBIT that's contributed through our bolt-on activity. To add that much, we have to do 1 or 2 bolt-ons every single year, and we probably need to get one of those joint ventures restructured as well. But when you add up all of that growth, you get about \$300 million of additional EBIT by the time we get to 2020. So that takes us from \$600 million last year, up to about \$900 million of EBIT by 2020.

And in conclusion, I would just say, look, this is a really great business. I mean, we have a robust market space. We have this broadest solution set that we work on enhancing every day. We put it through a pretty novel model that the whole organization and the whole company is organized and enthusiastic about. We make sure we can match that solution set up to the broadest number of opportunities that we can find from customers. And on top of that, we have a bunch of key growth initiatives. So here's what you should expect. I mean, you should expect us to keep growing this business at double digits every single year in terms of profit. And you should expect us to be able to do that in a way such that we keep the margin at a respectable level. We think 20% is a good place for that base margin. And underlying all that, the organic volume growth should be upper single digits as well, okay?

So that's Engineered Materials. So with that, I'm really pleased to introduce Todd Elliott. Todd is our Senior Vice President of the Acetyl Chain, and he'll take you through another powerhouse business.

**Todd Elliott**

*Senior Vice President of Acetyls*

Thanks, Scott. So powerhouse. We need to come up with a name for our acetyls business. So save that thought. Let's see if we can invent a new tagline for acetyls by the end of today.

One thing I was going to shock Surabhi over, Mark mentioned that this year is the 100-year birthday of the company, so I was going to ask this audience to sing happy birthday to the company. Never mind. So see, she's shaking her head quickly, so we'll save that. But I'll give you an alternative. I would encourage you to go check out the Celanese website, and our corporate communications team put together a really neat retrospective on the early days of the company, with original stories, features of our original products and some interesting print advertising back from the early days of the company. And this retrospective's entitled Celebrating our Past. But the website quickly turns to new things. You heard several examples from Scott, new developments, new customers, new applications. And this part of the website exhibit is entitled Imagining the Future, which I like. I like that theme of imagining the future. And I would ask you, with respect to the acetyls business, to start using your imagination, start thinking about the future earnings power of this acetyls franchise.

The main areas of focus that I will cover today are that our industry fundamentals are sound and are improving with solid demand growth and reforms in China. Celanese has the leading acetyls business in the industry, and we're constantly working to improve this repeatable model and expand our network and create more options from that. And third, we are positioned for further growth with ready now projects that will lift volume and earnings. Our business has delivered on our commitments over this last strategy period. We've progressively increased earnings from \$375 million in 2012 to over \$700 million this year, growing earnings at 10% per year and consistently generating EBIT margins in the 12% to 16% range. And we continue to build on our advantage positions. This team is very focused on this new strategy period to deliver additional growth for our shareowners.

Our acetyls business generates about \$3.5 billion of sales revenue, and while we have a broad product range in acetyls, I'm going to focus on acetic acid and vinyl acetate, which make up and influence a large percentage of our business.

Starting with demand. There's a nice diversity to the end uses served by these chemistries: Using acetic acid to make acetate esters; using acetic acid to make terephthalic acid, which is then used to produce polyester for fibers and for beverage containers. Our vinyl acetate is used to produce multiple products like PVOH or EVOH for the paint, adhesives and food packaging areas. To EVA and emulsion polymers, for various film applications, also for paint coatings, powders and also engineered fabrics. If you add up all of these applications, this represents over 14 million tons of acetic acid demand and over 6 million tons of vinyl acetate consumption. So plus 20 million tons are represented here in this industry. So if you take a 3% growth rate over many years, that rate of demand today represents about 600,000 tons of yearly demand increase. That's very solid demand growth in this industry.

The capacity picture was also balanced until a rapid over-build in China occurred during the 2008 through 2012 period, when China pursued a cheap coal, easy financing, fast-growth phase. If there was a cycle in this business, that was it. The only one back then, a capacity cycle. Basically, an over-build that put new units into China. Industry operating utilization rates before that buildup were in the 80% to 85% range, and then after that buildup, dropping to the low 70% range. So the acetyl industry and all these end uses have steadily grown out from this point. There have been limited capacity additions since 2013 and no major expansions are underway. So if we now look into the end of 2017, beginning of 2018 period, we estimate industry utilization rates at about 83%, expanding to the upper 80s by the end of this decade. This is a significant improvement, built on limited additions and sustainable and solid demand.

In addition to demand growth and progressively improving operating rates, we also see China reforms playing an increasingly important role across the industry landscape. We can consider this time line going back to 2006 and see the growing emphasis in China on emission controls and cleaner air. We now observe central government policy and provincial and local rules and enforcement aligning. This also goes with a greater focus and obligation to deliver economic performance and returns. We're already seeing impact from these reforms.

Our Celanese team is very well represented in China, deep experience, broad exposure throughout the country, and we've conducted a deep review of the major environmental reform policies expected to impact industrial operations. If you read the summaries from the 19th People's Congress in Beijing earlier this year, the absence of the word chemical is noteworthy. There's a shift in focus to consumer goods,

to biotechnology, to advanced products like aerospace and automobiles and IT. There are numerous references to air quality, quality of life, addressing the needs of urbanization. So if you take our research, all of our interviews and we did a plant-by-plant examination, we would point to these 4 environmental policies as being most impactful. And we've plotted the acetic acid and VAM units against these regional reforms.

Shandong Province will regulate new and existing industry parks. The frequently cited 2+26 plan aims to reduce emissions and control pollution in Beijing, Tianjin and Hebei regions. The environmental law shown in blue protects cities along the Yangtze River, essentially banning operations within 1 kilometer of the river. And the Jiangsu 263 plan, which aims to reduce outdated chemical capacity, move chemical plants to industrial parks, control pollutants and close plants with safety issues. There's going to be a lot of different outcomes associated with these, ranging from restructuring, to pollution control upgrades required, to forced relocations, assuming the economics still work and assuming they can get permits, and in other cases, there will be outright closure. So we expect older, more polluting and those plants that are not in an industry park, eventually to decline.

So we've already seen changes. There's a convergence of energy policy and environmental policy. In fact, in the latter half of 2017 and start of this year, there have been energy curtailments, as the country balances power sourced from coal-fire operations to natural gas, thus limiting natural gas available for chemical operations. Another example: We believe there's one major plant in the Jiangsu region that must relocate but has not yet been granted an equivalent permit. As these policies take hold, we'll expect further changes. If you overlay this China reform dynamic onto the earlier global utilization picture, this will likely affect utilization conditions, increasing from the earlier 83% and starting to push up closer to that 90% level. Though some period-to-period variation will occur, we expect a structurally better industry.

Now turning to the second focus area, and that is taking our leading acetyls network and doing more with it. We call that working on and in our model. So I'm going to provide several examples of how we utilize and build from our position and constantly work to improve this, so that we continuously add capability and options. Starting from our methanol integration and ranging into acetic acid, into VAM, into emulsions, we're represented in every region and hold the #1 or #2 position. We go to market representing the products vertically and/or look for value capture moving to the next derivative. For example, taking acetic acid to VAM, VAM to emulsions and out to that customer base. This broad reach and integration supports unequalled market knowledge, and most importantly, optionality.

Technology is important to us, it's a key aspect of our leading position, and we have a deep history here. This has allowed tremendous capacity expansion for low capital generating returns over 25%. Our conversion efficiency is best-in-class. Here, we highlight carbon monoxide and methanol conversion yields. These are the 2 main inputs for acetic acid. This capability is worth about \$15 million per year on an equivalent world scale unit basis. In addition to this, we have industry-leading capital efficiency. We can build capacities for about half the value of our competition. This is a tremendous advantage when you consider the scope of process units for an integrated acetyls complex. This represents hundreds of millions of dollars of advantage. These continuous advancements in process technology and operational excellence underpin the 2 projects we just announced last night, which I'll highlight in a minute.

So now taking a look at feedstock optionality. Our unique position also extends into this space. We produce acetic acid in the United States, in the Gulf Coast, in China and in Singapore. We practice similar technology in all of those regions. However, the critical CO feedstock is derived from different sources: From natural gas in the U.S. Gulf Coast, from coal in China, from oil derivatives in Singapore. As the value for oil or coal or gas fluctuates, Celanese has the real-time option to shift our rates around, to flex production and move that to that output. We've done that over the past few years and have generated over \$50 million of benefit since 2013. Our team is also focused on commercial flexibility, both from a customer perspective and also on the supply side. We value our customers, we work very hard to be the most reliable supplier, we also need to generate the right returns on the business. As the industry fundamentals have changed, we've adjusted our ratio of commercial positions to be more freely negotiated versus formula-based. This action provides margin uplift. We also worked multiple options for structural supply. We invested in methanol integration a few years ago. We've added different sourcing options from methanol for that critical input. And now, we're working cross the ethylene spectrum to layer

in different terms and mechanisms to capture value. These commercial flexibility efforts also support margin improvement.

So I've provided some examples of how we utilize technology, feedstock optionality and commercial flexibility within our network to unlock additional value. These are examples or branches of our global operating network. We continuously work to add to these branches with more customers, with more partners, with more options for production, more options for sourcing, more flexibility. So we add these dimensions or these nodes as we call them, to create greater degrees of freedom for the Celanese acetyls business.

And we run that process with rigor and structure. This is our model, a picture of our model. Our cross-regional teams meet daily and review significant information coming from the field, look at that data, we look at customer demand, customer inventories. We then assess supply options, trade flows, evaluate costs and margins. We bring those insights into these daily or weekly meetings to determine the best path forward for our commercial and manufacturing decisions, for example, whether to change price, or to shift volume around, or to work the derivative option through the chain. And then in parallel, work the commercial alternatives for all of those. This work informs and enables network activations.

As we test and measure our network, we utilize a key performance indicator to gauge the traction. We call this a network activation. We take the insights captured from the daily and weekly reviews and consider all the options. The significant decisions taken out of that process are what we call a network activation. Some examples are when we choose to lift or lower production rates or change sourcing, or modify our supply geographies; when we add or reduce supply chain nodes, like terminals, for example, or make pricing moves. These are all what we call network activations. As the industry landscape has gotten better and has improved, this optionality becomes even more important, as it generates new value for the business. We ramped up this capability over 2017, increasing our activations by 50% versus 2016. So wrapping up the second focus area of expanding and generating more value with our repeatable model, you see that strength in performance and margin development, building from an 8% to 12% EBIT margin range during a period of overcapacity, making choices on cost and site rationalization. During the last 3 years, moving up into the 15% range as we worked on enhanced flexibility, improving our insights and decisions, more activations. And now building from the improved fundamentals in Celanese-generated degrees of freedom, we see margins exceeding 20%, like the first part of this year, and then we estimate margins in that 20% range for the period out to 2020, representing a further lift and reflecting the strength of the Celanese acetyls model. This also gives us confidence to grow and takes us to the next focus area.

So the acetyls team has a series of projects ready for implementation, and I've grouped them into 3 categories through the 2020 period. We have available capacities today. We also have a series of technology-oriented expansions that we're initiating that fall within the 2020 period. And we're also working an effort to link other molecules with customers through our global network. There's a fourth category where we assess other projects beyond 2020. These are all strong investment opportunities and will contribute to volume and earnings growth through the decade and beyond.

Leading off with vinyl acetate. We're ready to expand our vinyl acetate capabilities to support customer needs. We have previously communicated our 150,000 ton expansion of Clear Lake. That project remains on track for a Q4 2018 startup. We just announced last night an additional 150,000 tons of output improvements. This is a direct extension of highly advanced process technology and control capabilities. Our team with a leading external agency on advanced reaction measurement and controls, and we can apply that to our 5 global VAM plants, and that can generate an additional 150,000 tons of output, and we'll match that up to when customers require it. Although these processing capabilities are highly sophisticated, the Celanese capital cost is less than \$50 million, another very attractive, high return on capital project.

We're also pleased to announce yesterday a further lift in our Clear Lake, Texas acetic acid output by 140,000 tons. That takes our global capacity to over 3.4 million tons. This is a technology-based upgrade, and the capital requirements are also minimal. We'll implement this over the 2019 time frame.



Given our leading position in acetic acid and the strategic nature of the product for sales and also for derivative supply, we've started the initial work assessing a large-scale or large-scale additions needed after the 2020 time frame. Together, these just announced, VAM debottlenecking efforts and the acetic acid expansion plus the original Clear Lake, Texas expansion, will generate additional sales volume of over 400,000 tons and will contribute over \$100 million of EBIT through the 2020 period.

We see over 40 companies in the acetyls space, across multiple products and multiple geographies, where we believe linking our network can provide improved access and reliability to global and regional customers. It's complex to produce and store and transport and service global and regional customers on a 24/7 basis. We can do that, because of what we have, because of what our network offers, we believe we can facilitate these connections and provide access to these molecules. It also provides a vehicle for growth for Celanese acetyls. At this stage, we've identified about 200,000 tons that could be added to our network. So think of it as about a 5% volume increase. This is also an avenue to build stronger relationships, potentially create alliances or partnerships, and also reveal M&A opportunities.

So the combination of the strength of our model and our relentless focus on adding capabilities and options to support decisions, are designed to lift margins, generate earnings growth, creating a significant step-up in the earnings profile of the business. And now with these additional steps to add tons. With limited capital, we ramp up that volume growth to over 400,000 tons of new contributions, or 3% to 5% up on volume through 2020. Although there will be some variation in EBIT margin, we see another lift into that 20% range looking out through 2020.

So recapping the 3 main takeaways. We see structural improvement in industry conditions, supported by sustainable growth and environmental reforms in China. Our team is focused on expanding our network and our degrees of freedom, with our unique and repeatable model. And we're ready to execute on these projects that I just outlined, these smart capital growth steps, both for capacities and access to new molecules, yielding returns over 25%. Our leadership team aims to deliver for shareholders 3% to 5% volume growth and lifting EBIT margins into the 20% range. So we're very pleased to project a level of earnings performance tracking over \$900 million in the acetyls business by 2020.

Thanks very much. Look forward to updating you on our progress. And now we'll transition to our innovation showcase. I'll hand it over to Scott and Verghese.

**Scott McDougald Sutton**  
*Chief Operating Officer*

Yes, thanks a lot, Todd. And so I'm pleased to have the opportunity to introduce Verghese Thomas, who is our Chief Technology Officer. But hopefully, what you've seen so far through Mark's discussion, Todd's presentation and my presentation, is that we really do take a purposefully unique approach to commerce. And we believe that yields unique shareholder return as well.

So what Verghese is going to introduce us to, the innovation -- or the technology showcase, is going to show how we're unique broadly. In other words, it's not just unique technology. It's a unique commercial process and also be unique in manufacturing and safety, and we'll be unique in the functions such as HR as well. Because that's the only way that we can continue to deliver outsized results, is to be broadly unique. So that's what the innovation showcase is really about. So with that, Verghese.

**Verghese Thomas**  
*VP and Chief Technology & Innovation Officer*

Thank you, Scott. I'll keep this short. Don't want to keep you from the most exciting part of the morning today. As Scott just mentioned, over the course of the next 1 hour and 30 minutes or so, what we expect you will experience is a lot about how we operationalize the differentiated business models you heard us talk about this morning. You're also going to hear a lot about and experience firsthand how we take Celanese's broad but very unique customer solution set to solve some of the toughest customer challenges that exist out in the world today.

And then lastly, most importantly, we're going to give you some exposure and experience interacting with our employees at every one of our stations. And hopefully, you'll be able to infer and observe the

differentiated talent and the unique culture that we have in the company, which has enabled all the growth over the last 3 years, and so much more that is yet to come.

So I just want to give you a little bit of logistics on what to expect next. Each of you, if you turn your badge over, you should see a group number that you've been assigned to. We'll have you split into 9 groups of about 12 folks each. You will have a Celanese group leader who will be waiting for you outside this room, who will accompany you and sequence you through the different innovation stations. We have a total of 8 stations, including the translation room next door. Your group leader will ensure that you're at each station for approximately 10 minutes and progress you to the next station, with the exception of the translation room. We'll have you there for a little longer period of time, for about 15 to 20 minutes. But I want to encourage you all to have a lot of conversation and dialogue, ask a lot of questions, engage with our team. And we're expecting you back here in the room at approximately 11:10 a.m.

So if you can take a 5-minute break, find your group leaders outside and then rejoin us at 11:10, we'd greatly appreciate it. Thank you.

[Break]

**Scott A. Richardson**

*Senior VP & CFO*

All right. All right, welcome back. I hope everyone enjoyed the last 1.5 hours or so. I have the enviable position of being slotted right between the innovation showcase and Mark doing Q&A and lunch. And as I was told by one of our sell-side friends earlier, I must have done something really awful to Mark to deserve this slot. But actually, I like being positioned here. And I have to admit, as I get started, what I'm going to talk to you about over the next 30 minutes or so is going to be a little bit redundant, maybe a little bit boring, because it's really going to be focused on 2 things: Cash flow -- cash flow generation and shareholder return. Those 2 things. And if I think back to those 2 elements, that's really kind of where we've been focused since the day Mark started with Celanese in 2012. And I remember sitting in a room with other members of the leadership team then, and Mark looked around and said, "You know what, there's really only 3 things that are critical for us. First, making money. Make more money tomorrow than we made today and keep that going for days beyond, and focus really solely on shareholder value. The second, take care of each other. Come together tight as a team. Doesn't matter if we work in a function or in a business, but work tightly together as a group to be focused on shareholder value. And the third, we need to have fun while we're doing it. It's pretty self-explanatory."

Those 3 things, if we really think about where we've been as a company and the journey that we've been on, that's where our focus has been. Focus on generating cash and how we deploy that back into our business in a way that creates shareholder value. And Scott and Todd have talked this morning a lot about the uniqueness of our business models. But I want to spend a few minutes to talk a little bit about something we like to call our financial leadership model. And if we think about what that model is, it's really a complementary approach to how we deploy cash based upon the generation of value coming from our businesses.

And really, there's 4 very simple principles that we align ourselves around. One, that we say -- that we do what we say we're going to do. We meet the commitments that we make to you, our investors. The second is that we drive capital allocation to the highest return opportunities that we have. Now that will change over time, depending on where we're at in the life cycles of our business, but that we're constantly evaluating where the highest returns are. Two, that we are never satisfied with where we are from a capital structure perspective and that we focus on our balance sheet and we focus as a finance team around how we can also drive cash flow and returns. And the last is that we drive cash flow to support growth in our businesses and M&A as those opportunities present themselves. And we create flexibility around our capital structure that allows us to be positioned when opportunities present themselves.

Our ability to do this has really led to us being able to exceed the commitments that we made back in 2015, whether it's EPS or cash flow, M&A, what we've been able to do from a cash return to shareholders or on our balance sheet to become investment grade. We were able to check the box on each of these items; and in most cases, exceed the targets that we outlined back 2.5 years ago. And it is this focus on

both commercial and business model success, combining that with our financial leadership model, that has led us to be able to overcome some headwinds that we've had. We did not achieve this plan the way we set out to do it. We were able to adapt at various times. As we saw headwinds coming in our Acetate Tow business, we were able to make some changes, grow faster in Engineered Materials. We were able to redeploy cash back in terms of buybacks to be able to drive a consistent growth of EPS and free cash flow. And that consistent growth of EPS is something we're really proud of. Despite the fact that we have had some variability in some of our businesses and that we've had to overcome headwinds, we've been able to consistently grow our earnings per share and also consistently grow then free cash flow.

You saw a bit of a blip up in 2016, that really came from one-time items. If you take that out, we've been a steady generator of cash on an upward trajectory, really in excess of what we've been able to do from an earnings standpoint. And that growth that we've been able to achieve from free cash flow has come from us being able to be creative around our capital structure and what we've done around our balance sheet. And our expectation is that this year, we'll generate around \$950 million of free cash flow and be able to translate those earnings that we saw from the first quarter results and we expect to continue into the balance of the year into cash.

This focus on cash is something that, for us, is critical. It is job #1. We're a little disappointed that it's not yet reflected in the equity value, however. And if you look at free cash flow yield, this is a very similar story than what we've shown in the past. We still believe there's opportunities here and that there's an attractive value proposition, based upon the consistent cash generation that we've been able to deliver over the last several years. And we believe that consistent cash generation will continue.

We like to use the word discipline, and there's several areas of discipline I want to kind of drill into a little bit. The first is around working capital. We saw working capital move up a little bit in the first quarter. That was not unexpected, based upon the strong business results and the strong business results we saw particularly in Asia. We, however, are tenaciously focused around what we do around working capital. We have a consistent metric that we use across all of our businesses on a percentage of sales basis to make sure we're looking at things on an apples-to-apples basis, but that we also look at trends. We also focus around what we've been able to do from an entitlement perspective around working capital as a percentage of sales and focus really around how we constantly drive for lower working capital.

The second area of discipline is this culture of productivity. And productivity is the hallmark of what we've done for many, many years. And we -- it is not something that's new for Celanese to talk about productivity. Now our productivity, this year, Scott mentioned, we expect around \$50 million in net productivity. That gross productivity number is around \$120 million, about half of which comes from manufacturing, which, again, is about the same level of value that we get from productivity from manufacturing. And it's amazing to me, when I go to our sites, and I sit and I talk to the team, the first order of business is always safety and stewardship. The second, and it never fails, is really around how we drive productivity.

Now productivity has evolved for us. It's not just about cost reduction. It's not just about cost-cutting anymore. It's really about how we drive efficiency more and more in our operations. A great example of this is we had around 400,000 tons of compounding capacity in our Engineered Materials business in 2015. And through a series of steps, some technology-related, some supply chain-related, some mix-related, we were able to achieve 460,000 tons of output from those same assets in 2017. So a 15% increase in the capacity in our Engineered Materials compounding lines in a 2-year period of time. It didn't happen overnight. It was through a lot of planning, careful planning, and working together amongst a large group of people to be able to achieve that productivity. But it doesn't stop there.

One of the elements of the synergies that comes from our Engineered Materials acquisitions that we're doing is around manufacturing. And you take the same tenets that we used in our own kind of base business assets and you apply that to what we're doing in acquisitions and you get a lot more output out of those assets which drive some of that synergy value that's able to lift the margins of that business up to the levels of margins that we expect broadly in Engineered Materials. The balance of our productivity comes in the areas of supply chain and business enterprise, and again, that has changed a lot over the years. The business enterprise bucket used to be a lot bigger number, and that was during periods of time

where we were creating and setting up our low-cost shared service centers in both Budapest and Nanjing, as an example. But we're still driving opportunities for improvement in those areas. It's just changed and adapted.

A good example of that is over the last year, we have localized the site leadership position in both Budapest and in Nanjing. We get the benefit of the reduction of expat costs that comes from that, but we get the added benefit of efficiency of having a local leader who's been with Celanese for a long period of time, knows our company, knows our businesses, knows our functions and is able to drive leadership at a more local level. So we get the benefits of having someone who knows Celanese really well, but is much more locally connected than an expat employee. So we get the benefit of that personal development that hopefully compounds itself over time.

Another important area of discipline is around what we're doing financially. And given the fact that we have had some headwinds in our business, it's been an important value driver for us, to look at our financial organization and make sure that we're being really smart in the areas of both debt and interest, tax and pension.

In the first one, our interest cost was \$220 million in 2011, and through being able to take advantage of the low interest rate environment, kind of having a plan and setting out a series of optionality steps here, we've been able to lower our interest expense by almost \$100 million in 2017. That has been an important lever in us being able to generate free cash flow over the last 5 years in excess of earnings growth. The second is around tax. Our tax rate was 21% adjusted in 2014. Last year, ahead of U.S. tax reform, our tax rate was 16%. Those were all controllable, thoughtful steps that we took to ensure that we are taking control over our own tax rate and making sure that we're looking at the opportunities on a real localized level to ensure that we're optimized and connected to where commerce is being done. And that started with really sitting with our businesses, focused on where growth was going to come from and really be positioned from a tax perspective to lower that rate.

On pension, we were looking at about an \$800 million unfunded deficit in 2011. And through just a series of consistent and thoughtful steps, including in Q4 last year, taking out a eurobond that allowed us to fully kind of pre-fund our U.S. pension, ahead of U.S. tax reform. So it really took this collaboration between our tax department, our treasury team and our accounting team, really looking and working about kind of where things were going and taking that opportunity, it was a no-brainer, from the perspective to get us the full flexibility to pre-fund that pension.

These steps and this concept of discipline has allowed us to be able to generate cash flow that has allowed us to really return cash to shareholders in a way that exceeds our peer averages. Our dividend has been increasing for 9 consecutive years. With the announcement we made a couple of years -- or a couple of weeks ago, we're going to pay out about \$280 million of dividends this year. We expect that to continue, and I'll talk about that here in just a second. If you combine that with the share repurchases that we've done, and we did \$1 billion of repurchases over the course of 2016 and 2017, we have almost returned about 2.5x that cash to shareholders than what our peer averages have been.

And that is an important tenet for us, and I go back to how I started this. It's about generating cash and creating shareholder value. And this was, for us, an important hallmark for what we did -- have done over the last several years. And that has led to industry-leading shareholder returns. And this is something that, as we as a team look at this, and we reflect on what we've done over the last 5 or 6 years, this is an important metric for us, and it's something that the team -- and I know the group that you met with over there, and hopefully you saw the passion that came from our team in the showcase.

There's a lot of really interesting things that are going on in our functions and our businesses, but it's really focused solely on shareholder return. And I think that's reflected here, and what we're doing from a business model perspective and from a financial model standpoint. But where we've been is one thing, where we're going is even more important.

In the plans you heard this morning, we have about \$900 million of EBIT that we expect to generate in Engineered Materials in 2020, coming from project pipeline, the technology programs, as well as M&A. The same amount from acetyls, \$900 million, largely from leveraging what is a very uniquely positioned

business model, to drive value, take advantage of our geographic reach, our unmatched value chain and the fact that we have competitive intelligence that's well ahead, that's able to make quick and snap decisions. And the last is the stable cash-generating business of Acetate Tow, which we expect to hold flat at around \$300 million of earnings. And that creates business earnings of greater than \$2.1 billion in 2020. That gives us a lot of money to deploy cash. So if you think about -- Mark opened by talking about \$4 billion of operating cash flow that we expect to generate, \$3.2 billion of free cash flow.

We look at that being spent really kind of 50-50. First, returning cash to shareholders. We expect, through the strategic time frame, to return about \$1 billion back to shareholders in the form of dividends. So \$280 million this year, and we'll increase that over the next couple of years up to \$1 billion over the 3-year time frame. The other area is in share repurchase, \$1 billion repurchase program between now and the end of 2020. The balance of that is going to be spent on organic growth and M&A.

Over the last 2 years, organic growth and M&A has actually only been about 1/3 of our cash deployment. We look at that being about 1/2, as we go forward, and a lot of that is because of the growth programs that Scott and Todd discussed, but it's also about the robust project pipeline that we have of organic growth projects. Our prioritization of cash deployment has not changed. This is the same chart we've shown for the last several years. We still look at organic growth first, we look at M&A. But repurchases and dividends continue to be something we want to be very consistent and deliberate about in terms of returning cash.

If I break down that CapEx component, our CapEx levels have been around \$250 million over the last several years. About \$125 million to \$150 million of that is maintenance CapEx. So call it, roughly, \$100 million of growth CapEx over the last several years. At \$350 million CapEx levels, that amount doubles. Maintenance CapEx is going to remain relatively flat. So that, from 2018 to 2020, represents about \$600 million of specific investment in growth projects, as Scott and Todd outlined a few of those earlier today. If I break down those, and I'm going to give 3 examples here.

The first is in acetyls. We have a debottleneck project that costs a few million dollars. We get about a one year simple payback on that project, something that's really interesting. The second is a typical investment in a new compounding line, call it here Project B. That project tends to cost us about \$4 million to \$5 million. Scott talked about having about 15 of those in the pipeline over the next several years. We get \$1 million to \$2 million of earnings from each of those, depending on mix, sometimes higher than that. And the third is really what I would call more of a hallmark productivity project. We have one of our core legacy, strong strategic assets here in the U.S., low-cost natural gas, but we're still able to drive energy reduction projects that have about a 20% return. These are projects that we see as very low risk. It's on a strategic asset. It's at a low point for U.S. natural gas and it's something that makes a lot of sense for us to continue to invest in.

These are 3 examples of many that we have every year. And we have a robust process that we have internally, where we look at and evaluate all the projects that we have. We review, as a leadership team, every project of around \$1 million or more. And it's something where we talk about it, we dialogue it, we come up with ways at which we can make that project better. And we find ways at which we're constantly trying to challenge the economics and find ways at which to expand those returns on all the projects that we have, whether they be cost reduction projects or revenue generation.

And this has led to -- and this diligence and this rigor around discipline of returns has led to an extremely high return on invested capital over the last several years. As we look through the strategic period of time through 2020, we see that maybe coming down slightly, but still being in around the 18% range, based upon bolt-on acquisitions that we've outlined, as well as the project pipeline that we see implementing during this time frame.

And with that and the strong cash flow generation, I do want to highlight that we still have leverage capacity if we need it. This isn't the priority, but with \$3 billion of free cash flow generation expected during this time frame, \$1 billion going to dividends, \$1 billion going to share repurchases, that gives us surplus cash that we've earmarked for bolt-on M&A of about \$1 billion. At our current leverage ratio, given the earnings growth that we've outlined for you today, that would give us about another \$1 billion worth of room. We have roughly around \$1 billion worth of room today in our leverage that we could lever up

and still remain investment grade. And again, that gives us around \$3 billion of room, if we would need it. Again, this isn't where the focus is. The focus is on using our free cash flow to continue to invest in the business, but we do have room. And I highlight that because we are going to be looking at the balance sheet over the next year or so. We have one of our eurobonds coming up in 2019. So we are going to be in the market. We also have the \$800 million of prepayable debt that we had outlined for an Acetate Tow joint venture transaction that we were planning to pay down had that transaction gone through. So we still have that as flexibility for us and we'll continue to look for opportunistic ways to continue to improve the balance sheet.

As I said before, we have lowered our interest cost by about \$100 million over the course of the last 6 years. Now there's probably not another \$100 million tranche here, but we're still going to be focused around how we can drive cents per share to the bottom line by looking at our balance sheet.

So if I start to summarize kind of what we've heard over the course of the last several hours, we feel like there's a very clear value creation path. And if I just kind of go step-by-step through that one more time, acetyls has outlined \$150 million of growth coming from volume. That \$150 million of growth does seem, on the surface, like a big number, but it's really us growing with the market. Market growth of 3%, which is something that's historically been there and it's not something that we see changing, but it's us holding our share through that market growth over the next 3 years. That's what that \$150 million comes from. The second and third really are how we leverage this unique business model that we have, the breadth that's really unparalleled in the industry, to take advantage of changing utilization environment, largely in China, but impacting the world. And then the Engineered Materials growth story, which is really about kind of more of the same: Driving pipeline growth; continuing to increase our project wins, driving to 5,000 by 2020; improving our win rate up to 50% from 45% today; and then also leveraging our technology programs, of which you heard about several of earlier today in the showcase; and then the last piece is doing -- continuing the acquisition path that we had before. That's how it breaks down. That's what -- how the \$600 million of EBIT growth breaks down.

And as I look at that, and I step back and I look at it from a real strategic perspective, it's about 3 businesses: Acetate Tow, a stable cash generator; Engineered Materials, Scott called it a powerhouse, but it's really a business that is systematically and meticulously driving projects that we can deliver value from; and then Todd's business, which is really uniquely positioned to leverage our technology position, leverage our global business model, to generate high levels of returns over the next several years and kind of grow with the marketplace. And those 3 things will yield earnings per share of around \$11 by 2020, which equates to about \$1.2 billion of free cash flow, which is a 13% increase over where we were in 2017. \$3.2 billion of free cash flow cumulatively over this period that we can then deploy to cash. So double-digit CAGR in EBIT growth; double-digit CAGR, top line growth; double-digit CAGR in cash flow growth; and \$2 billion of cash redeployed specifically for shareholders. That's our plan.

And we believe by combining these strong business models, combining our financial leadership model, that this is a very achievable plan. And based upon, hopefully, the folks that you met in the showcase, you know that we have the team in place to go it, a team in place that's very uniquely positioned, that has a passion for driving shareholder growth for Celanese.

So with that, I'll invite Mark up to close us out and take us into Q&A.

**Mark C. Rohr**

*Chairman, CEO & President*

Great, thanks a lot. Thanks, Scott. So I don't want to spend a lot of time doing this, but a few comments here. You've heard us walk through this in a very systematic fashion, and you may not be used to people speaking quite so bluntly, but we're quite confident this plan is going to be delivered. The foundation work in the Tow business that Scott Sutton outlined is there. We have control over the variables we need to have control to maintain that business, and we still have a lot of optionality there. So I will be disappointed if we don't find a way, in the next -- over this next period of time, to really introduce to you some optionality in that business like you had before that would help us monetize that and create a pathway to the future to eliminate that as a risk that you folks may feel.

Scott also then took you through the EM model. It is stunningly simple in a lot of ways. We have the broadest portfolio, the most depth in terms of how we apply these materials. It is an unassailable position, practically speaking. We don't have competitors. And we do that because we care about \$100,000 deals. This is a series of stackup of small opportunities that we're able to go get, and it really is almost unlimited for us. So there's no doubt in my mind it's going to be 100, 100, 100-plus, plus, plus in that business. We also have chances to, and opportunities to, expand that business through M&A, some of which is counted here, but only some of which.

Todd then took you through the Chain business. And I know it may be a bit counterintuitive for you, because a lot of folks have felt like this is a very volatile, peak-to-trough kind of business. It really isn't. The data doesn't show that. What the data shows is a history of a business that actually has been very well managed, with the exception of one time period, a very unusual set of circumstances, a flood of the market based on a hope and a dream that didn't materialize and will not replicate itself again.

So that business is just going to shore up and the 20% margin that we put up there is our margin. It's not the margin that competitors would see. We can tell you that last year -- and this is a pretty good business for us -- last year, the major players in China were all losing money last year. Today, they're probably just hitting double-digits return. So strong business, strong foundation, differentiated in many ways and a real contributor, also with ways to bring in stranded molecules, also with ways for us to do more there to make sure we can maintain this business in this state for some period of time.

If you roll all that up in this process, what we've done here is just, in a real simple way, we've looked at equity value, market cap. So we took the current multiple, current not necessarily meaning this moment in time today, but a multiple over the first quarter of this year, and applied it simply to 9, 10 and 11 -- \$9, \$10 and \$11 in there. When you run that up, we'll be at \$150 a share in 2020. That's \$20 billion, and you've heard me talk about \$20 billion in that process. What you need to know is what's not included in this is the share repurchase. What's not included in this is optionality for us to do other things. Scott took you through one example of that optionality before, that was a \$1 billion to \$2 billion value accretive deal for us. We're going to try to do that again. It doesn't include optionality for us to do a bigger deal in one of these 2 base businesses. It doesn't include optionality for any kind of transformational deal, all of which are in front of us to look at and consider. What I can tell you is we won't do anything that destroys our ability to make that \$11. And we won't do any deal in any way, shape or form, that would disappoint you in terms of return or risk profile of this corporation. It would all be accretive. And we have 3 or 4 easy ways to do another \$5 billion on top of that.

So we think it's a very compelling story, and I'm a bit disappointed that The Street doesn't think so this morning. But it's a very compelling story, and we're quite confident that we'll deliver these results as we go through the next several years.

So with that, why don't you, Scott and Todd, if you will come up, join me on the stage, and we'll just get into Q&A. As I always tell folks, there's no question you can't -- not that I need to tell you, answer -- that we won't answer.

Surabhi, did I miss something there? Okay.

## Question and Answer

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**Mark C. Rohr**

*Chairman, CEO & President*

I think there -- are there mics for folks, Surabhi? What's the routine?

**Surabhi Varshney**

Yes, there are mics around.

**Mark C. Rohr**

*Chairman, CEO & President*

Okay. So just raise your hand, if you will, and who's got the mics?

P.J., why don't you start? You'll scream it out. There's a mic coming to you, sorry.

**P.J. Juvekar**

*Citigroup Inc, Research Division*

Thank you, and a good job. So a question on acetyls. You mentioned the Chinese were losing money last year; this year, they are in double digits. You guys are going from 10% to 20% margins. At what point do the Chinese decide to add more capacity? And could that sort of spoil the party?

**Mark C. Rohr**

*Chairman, CEO & President*

Well, if you -- I'll start on this and maybe, Todd, you weigh in here in a second. We walked this business up with 70% capacity utilization, if you look at that. So the march from 10% or 12% margins that we had to, let's say, 16% or so, that 400 basis point step was really -- had nothing to do with capacity utilization. It was all just the model and our ability to operate the scope around the world. What we saw at that period of time, if you look at -- and I'm going back to China now. China was probably a 50% capacity utilization in those days. And the move in China to shore up industry, part of that is to get that capacity utilization way up. So I think that's happening today. I think industry today over there is making it into the low double digits. And I'm talking about the big, state-owned kind of industry, which kind of sets the pace in this. So we don't see that situation in terms of over building. We don't think that's going to happen again in the near time frame. I mean, maybe it would at some point, but it's hard for me to see that it will happen again. Todd?

**Todd Elliott**

*Senior Vice President of Acetyls*

Yes, I mean, if part of the question or behind that is, are people going to add again or bring new capacity back into the fold, I think we've got to think about the landscape today and the ability to find a space in a sanctioned industry park. That's limited, not much space left. It's got to be in a chemical park that's already been greenlighted for these types of operations. Again, that's limited today versus 10 years ago. You have to get the permits. So that goes back to environmental reform, energy policy. So question mark there today versus going back. Ten years ago, there was cheap coal, not really the case any longer. So that feedstock profile has also changed. Capital cost to build, probably 40-plus percent higher today than it was -- than 10 years ago in terms of capital cost -- I mean, lots of different things would have to be in place to set the environment to expand more. The other one, of course, is technology. Which technology would be practiced? Some of this was coal-based syngas through methanol, ultimately to acetic acid. Different than our process, very, very capital-intensive process to do it that way. You're talking probably close to \$1 billion all in, so you'd have to have the funding for that. And then the technology, at least relative to acetic acid, is something we're very proud to have a major position on in terms of our know-how. We also work with the leading technology offerer in China with respect to acetic acid technology, SwRI, which we just extended our multiyear agreement with. So we think we've got our hands around



that type of technology on top. So lots of pieces would have to be in place to get anywhere close to what was done 10 years ago.

**P.J. Juvekar**

*Citigroup Inc, Research Division*

Just a broader question on that. The goal of Chinese government is not to just shut down capacity, it's to shut down oil capacity and add less polluting new capacity. So do you see that happening? I mean, maybe they could relocate those into other parks and oil capacity?

**Mark C. Rohr**

*Chairman, CEO & President*

I think that's totally different. This whole dialogue got started, in my point of view, around the Chinese government's concern, rightly so, in the 2012 kind of time frame, of every business they had there, industry operating at 50% capacity and knowing full well that the loans and the financial integrity of that system was at risk. It was solely and deliberately set in place to rationalize capacity. Now it's taken on a lot more of a life of the social justice portion of it, just having a healthy workplace and the environment. But the root issue from the Chinese government is to get their industry up to a viable operating capacity with operating profit. Why did they raise the price of coal? It is really so the coal industry itself could survive and could be functioning and could put in the right pollution gear that it needed to, to operate. So they've artificially done that. So my belief is that, that is the real, P.J., that's the real driver here at the end of the day. And so I'm quite confident that's -- they'll work hard to maintain it. You also need to appreciate when the investments occurred in China, it was really of a view that Chinese could compete externally with their product and move it offshore. They cannot, in a real sense. It's very, very difficult for them to do so. So in that process, you got -- you're then building to satisfy the local market. If you build, and the kind of investments that Todd is talking about, it makes it very unlikely that you see major investments in this particular vehicle in what I'll say the next 5 to 10 years. It's just -- it's hard for me to see a scenario where that will happen. And there's going to be enough acid out there to keep everybody okay in this 85% to 90% kind of range, and I think we'll -- I think it's where it'll run.

**David L. Begleiter**

*Deutsche Bank AG, Research Division*

Dave Begleiter, Deutsche Bank. Mark, with respect to your acetyls business, in the past, you've discussed maybe doing a joint venture-type transaction, similar to tow. Is that still a possibility? Is it likely over the next 3 years of this plan or has it evolved going forward?

**Mark C. Rohr**

*Chairman, CEO & President*

Well, I think one of the things we've learned dealing with the European Commission is that the concept of material volumetric overlap within the European region is a principal position, and at least with us, they wouldn't budge on. So it's hard to do a deal, like a Blackstone kind of deal, if it's going to be direct competition in the European, I would say, or the U.S. market, between 1 of the 2 players there. So that kind of deal, I think is difficult. Now roll it the other way. There are a number of smaller players out there. They could open themselves up to a venture kind of deal. And we've had dialogue with those and have ongoing dialogue with those today. There's also molecules that are out there that don't have access to the market and there is a whole family of deals, and that was Todd's, if you missed it, I think in my own personal view, the most impressive chart that Todd showed you was the one that showed all those points of connection. That all relates to different companies and groups we're interfacing with where we have potential to work together in ways to service the market. So I think a combination of those things could end up setting us up or teeing us up as more of an independent entity.

**Kevin William McCarthy**

*Vertical Research Partners, LLC*

Kevin McCarthy, Vertical Research Partners. A two-part question on M&A. Mark, you have a number of existing joint ventures in Engineered Materials in Japan, Korea, Saudi and elsewhere. That's been the case

for many years. Would you like to acquire a controlling interest and consolidate these JVs? And if so, do you see any chance of that happening in coming years? And then the second part would relate to acetyls. I think Todd in his presentation made a reference to M&A possibilities there. And so my question is, as you consider the coming years, do you see any meaningful potential for M&A outside of Engineered Materials? And might there be opportunity to consolidate what has become a more fragmented industry over the past decade?

**Mark C. Rohr**

*Chairman, CEO & President*

Yes, so I'll start here. Maybe Scott, you jump in, in a bit and Todd in a second. When you look at the joint ventures, they've been extremely good partners for us in many, many ways. Some of those ventures we actually have control -- market control over those ventures. At the same token -- by the same token, I think as Scott said, we don't feel that we get -- shareholders will get value for those in the right kind of way. It's valued as -- anyway, we don't think that value is fully recognized. So we look for ways to enhance those through restructuring of those deals. I don't want to get into details about exactly how that would happen. We would certainly be willing to buy out partners as part of that and those kind of proposals have been given. There has been other proposals given to work together in a different fashion to maybe be more Solomon-like and sort of divide it up. There's different ways to approach it. But I think you should know what we really want to see happening is we want to see the industry continue to improve itself and we want our shareholders to get a return for that. And I mean, we're going to leave no stone unturned until we make that happen. And is how I would say that. And do you want to hop in on, maybe with the Chain business? Or Todd or somebody?

**Scott McDougald Sutton**

*Chief Operating Officer*

Well, I'll just finish the comment on the joint ventures in Engineered Materials. I mean, there surely sits an upside there if we can pull it off, but I would say, every day we make more progress and having a bigger role. I mean, we're participating in offtakes to support some of our growing business. We participate in some of the leadership as well. You've seen us change our economic interest in one. We participate in some of the marketing through our broader channel and with our solutions set as well in another. But those are all incremental steps today. So an upside exists to do something.

**Todd Elliott**

*Senior Vice President of Acetyls*

We said that we see over 40 companies in the acetyls space across multiple products and geographies. We are ramping up that work. We've identified 200,000 tons of new capability, new volume that we could bring in through that, connecting these molecules into the Celanese network. It's an enhanced way to grow, a fresh way to grow for us. It can lead to other things. It's a great way to build relationships, might lead to alliances, forms of partnership and helps start to identify potential M&A opportunities for us.

**Unknown Attendee**

So right now, you're at around 2x net leverage and you mentioned that there's \$1 billion of capacity to maintain IG. What is the implied net leverage there? What guidance have the agencies given you? Is that 2.5x, 3x?

**Scott A. Richardson**

*Senior VP & CFO*

It's in that range. We haven't commented specifically on that, but -- and a lot depends upon kind of where we go from a growth perspective. And as we grow earnings, that capacity will increase. It's important for us just to outline that there's room, and it allows us to make sure, to Todd and Scott's point about leaving no stone unturned, from a business perspective, that we have options.

**Unknown Attendee**

And is it safe to say, if there is something truly special transformational, that the IG ratings, you'd be willing to jeopardize that to pursue the growth initiatives?

**Mark C. Rohr**

*Chairman, CEO & President*

Yes, we're all about shareholder value. So if it made sense to do that, we'll do it.

**Ghansham Panjabi**

*Robert W. Baird & Co. Incorporated, Research Division*

Ghansham Panjabi at Baird. So maybe a question for Scott Sutton. During your Engineered Materials presentation, you kind of showed us a progression curve, initial phase, translation 1 through 3. Off the 3,000 projects you have sort of targeted for this year, how will they drop into those various phases and how should we think about that 5,000 -- how would that sort of translate into that 5,000 by 2020? Just curious as to what kind of visibility you have on the 5,000 projects.

**Scott McDougald Sutton**

*Chief Operating Officer*

Yes, sure. I mean, we can -- I would say on average, we'll be able to see 18 to 24 months out, but that's only for a portion of those projects, a good deal of what we get because the introduction cycles and the commercialization cycles are so much shorter, we go out and obtain them in the same calendar year that we actually close them. So getting to 5,000, right, really is dependent on changing the model and evolving the model, such that we have in place the ability to do all those things I talked about, starting with customer options mapping step, within a shorter time frame. I mean, the time frames are not getting longer. They are all getting shorter, right? So it's not about we're never going to have a pipeline that we can go out and say, well, 3 years from now, we already have a window there. We won't have that. But we will have the position that enables us to do that.

**Mark C. Rohr**

*Chairman, CEO & President*

Whoever's got the mic?

**Arun Shankar Viswanathan**

*RBC Capital Markets, LLC, Research Division*

It's Arun Viswanathan, RBC. Just 2 quick questions. First off on the financial side. If your implied EPS is above \$9 this year and your implied EPS is \$11 in 2020, I mean, that could imply a slightly lower than 10% growth rate, so maybe you can just explain your thinking there. And then, secondly, you've explained a lot on the innovation model within EM. And you've talked a lot about it. I mean, what's the risk that some of your competitors can replicate some of that? In the past, you've talked about your hit rate, is that also increasing? Maybe you can just touch on that.

**Mark C. Rohr**

*Chairman, CEO & President*

Well, I think we're seeing we're off to a really strong start in the Chain business. And we haven't, in some ways, these numbers don't necessarily fully reflect our thought process about how that rolls through and evolves. So by your method, that will be correct, it will be a little bit more front-end loaded with that process, but that's a finer pencil than we use on some of these things, if I could say that. We don't have any competitors. That's how I'd answer that question. There are people that produce these same polymers and sell these polymers, and there are -- from time to time, we bump heads with those guys. But the reality is, in terms of what we're doing and the way we're doing it, we don't really have competition. It's how I would say it. You may say it differently.

**Scott McDougald Sutton**

*Chief Operating Officer*

I would say there is not a ceiling on where we can go, certainly, right? If you thought about, what, if there is such a thing as a market share in this business, right, it's sort of infinitesimal, right? It's tiny, at maybe 1%, something like that. And there's hundreds of different players, maybe a thousand out there. We don't think of ourselves every day competing with any one of them, just like Mark says. So the risk isn't from the outside. The only risk is making sure that we can scale the model.

**Mark C. Rohr**  
*Chairman, CEO & President*

That's right.

**John Ezekiel E. Roberts**  
*UBS Investment Bank, Research Division*

Way back here in the bleachers. John Roberts. You're not expanding methanol. So is your thoughts maybe about better to be a buyer than a producer, maybe over the next few years? And is it also perhaps a good time to think about locking in some ethylene for a longer-term period, given kind of where we are in the ethylene cycle?

**Mark C. Rohr**  
*Chairman, CEO & President*

Yes, methanol -- our methanol project economics are still attractive and there are people that approach us, and our partners approach us from time to time, we still talk about it. But we don't see it at this moment in time as being totally critical to expand that methanol mix. Is that fair?

**Todd Elliott**  
*Senior Vice President of Acetyls*

Yes, in the 140,000 tons of additional acetic acid that we just announced overnight, we got that covered. So matched up well on the balance side at this stage.

**Mark C. Rohr**  
*Chairman, CEO & President*

Yes, yes. So we're pretty good there. Yes, ethylene prices have wandered down a bit and there are starting to be some moves and then other folks thinking about contracting ethylene. So we'll take advantage of that to the extent we can this year and the next couple of years.

Whoever's got the mic -- maybe guys, hand out the mics and...

**Jeffrey John Zekauskas**  
*JP Morgan Chase & Co, Research Division*

Back here. Jeff Zekauskas with JPMorgan. On one of your slides, you talked about a longer-term acetic acid expansion of 600,000 tons. I assume that's in North America. And I assume that if you did that, you would back-integrate into methanol. Are those reasonable assumptions or those are not? Not that you have to build your own plant yourself, but you might own a piece of somebody else's plant.

**Mark C. Rohr**  
*Chairman, CEO & President*

Well, I think we like the integrated concept, and so that's not an unreasonable assumption if it worked out. At least, today, we don't have an interest of being solely just invested in methanol solely. But that linkage of methanol to the Chain business is really pretty attractive in that. And we kind of think when we look at that, there's actually a lot more value in that methanol route than is perhaps being capitalized, so on so far. The methanol industry is about 1/2 fuel and MTO, maybe it's 45% now. And the acetic acid piece, I'm not sure what we're down to, 15% or 16% probably of the methanol market, something like that.

**Todd Elliott**  
*Senior Vice President of Acetyls*

Or less.

**Mark C. Rohr**

*Chairman, CEO & President*

But that connectivity is kind of interesting to us around that piece of it. So I think your comments make sense. The reason we put the 600 up there, that's called optionality, production options. So if we look at our portfolio at the end of this decade or start of the next decade, we need to decide where we're going to make, everything that we're making, and so there could be a chance for us to rationalize something and then reinvest somewhere else or something like that. So that's why we tagged that as 600.

**Todd Elliott**

*Senior Vice President of Acetyls*

But you're right, Jeff. We didn't put a location on any of that at this point. No location was set. So too early to talk about where that would take place, and if we would do it. So that's for later.

**Jeffrey John Zekauskas**

*JP Morgan Chase & Co, Research Division*

So if you didn't build it in North America, where would you build it?

**Todd Elliott**

*Senior Vice President of Acetyls*

We didn't talk about location.

**Frank Joseph Mitsch**

*Wells Fargo Securities, LLC, Research Division*

Frank Mitsch, Wells Fargo. And Jeff, I asked that question of the gentleman who is doing the poster session, and I couldn't get him to confirm Asia either. And to that point...

**Mark C. Rohr**

*Chairman, CEO & President*

Let me just ask, does it matter to you, guys? Do you really care? If we end up doing that, it would only happen because the market was there for it. We weren't being disruptive to the market. And we were creating the economics that are consistent with those up here. And so if I could do those things, do you really -- I'm not being flippant, but do you -- does it -- I want to make sure I answer it the right way, does it really -- do you really care?

**Frank Joseph Mitsch**

*Wells Fargo Securities, LLC, Research Division*

My point of view is simply talking about Asia, given the fact that there is an expectation of Chinese facilities being shut down and then you guys can operate in a more environmentally friendly way, and debottleneck, et cetera, maybe do a greenfield there. And sticking with the acetyls theme, Todd, you put up a nice chart showing how margins have trended since 2012, and kind of depressed, then moving up and so forth, then in '17, reaching a nice high level as a base going even further. So my question is, over the next couple of years, what do you see is the risks to that occurring and perhaps the opportunities on the upside of that forecast?

**Todd Elliott**

*Senior Vice President of Acetyls*

Yes, I mean, we're largely trading on fundamentals. We talked about 83% utilization rates today. It's starting to track towards the upper 80s by 2020. So that's kind of the fundamental trading environment that we're working in. We've got about \$100 million associated with price out through 2020. So that's -- that was in the 3 -- kind of 3 buckets that rolled up to the \$900-plus million dollars by 2020. So a key

piece of that is price margin-related. So that's in there, that also keeps us within the 20% EBIT range in terms of outlook. So we've got price in, good start to the year already.

**Mark C. Rohr**

*Chairman, CEO & President*

Yes, so that's an average. So you shouldn't have a view that we're saying that on one quarter, we're not down at 17% sometime. We could be. What we're kind of saying is we're indifferent to that. Does that make sense? If I'm bringing in more molecules and I got more control, I can still maintain the profitability. And so as we look at this normalization of sort of margins, we believe that, that is a range that has a lot of economic sense associated with it. If you guys wanted to sit down with us for a day or 2, we could explain that to you. But when you look at every derivative, every market, every place it is, it's a good average net back position. It seems like that's where we should be. And that is also, historically, if you roll up historical pricing, before we got into the sort of China syndrome, that's where it was. So it's just a very -- it's a normal place for this business to hunt. I think in terms of what we reflect at 20%, the industry margin would not be that high at that same point, because these are individual players spread all over the world, very, very different situations for them. So they'd normalize at some level much lower than that, probably 400 or 500 basis points.

**Frank Joseph Mitsch**

*Wells Fargo Securities, LLC, Research Division*

And then just simplistically, over the next 3 years, you have an 11% sales CAGR, how should we think about that breaking down price, volume, M&A, FX?

**Mark C. Rohr**

*Chairman, CEO & President*

I don't have that data here.

**Scott A. Richardson**

*Senior VP & CFO*

Yes, well, I mean, you know, I can just add -- I mean, there are -- we're not planning on an FX gain or loss, right? So I mean, it comes down to volume and price. You see the Engineered Materials business driving volume still in a big way. You've heard Todd talk about continuing to pick up volume through alliances and other reasons as well. So there'll be some price, but it will be mostly volume-driven.

**Mark C. Rohr**

*Chairman, CEO & President*

Whoever has the mic?

**John Patrick McNulty**

*BMO Capital Markets Equity Research*

John McNulty, BMO Capital Markets. Two questions, Mark. On the sale side, you're looking for 11% growth, the EBIT long-term forecast is 10%, I guess. It's a little less leverage than, I guess, I would expect. So I guess, what are the puts and takes that maybe hold back that EBIT growth versus the sales growth? How should we be thinking about that?

**Scott A. Richardson**

*Senior VP & CFO*

It's really more mix-related, John. So if you really look at, at where the margins are being generated, it's more of a mix thing. I wouldn't read too much into it.

**John Patrick McNulty**

*BMO Capital Markets Equity Research*

Okay, fair enough. And then, the question for Todd on the acetic acid side. The last time we saw utilization rates kind of at the level that you're thinking they're going to get to by 2020, give or take, we saw acid prices bouncing around \$900 to \$1,000 a ton, I guess. Are there any structural reasons why we wouldn't necessarily see that happen again? And I guess, how should we be thinking about that going forward?

**Todd Elliott**

*Senior Vice President of Acetyls*

If I understand the question, I think -- I mean, there's probably a lot of logic in that. And we were touching mid-900s back in the pre-China buildup range. We're mid-700s today. Lot to work on to make that happen. This is something we'll pursue with our network, with our customer base. So that's certainly something we'll work hard on.

**Mark C. Rohr**

*Chairman, CEO & President*

Yes, I think the important thing is that you are selling that stuff by the ton, and so \$750 a ton is still a very cheap price. And if you look at it in terms of its implied use and our theoretical substitution, it still fits in very well. So I think the pricing is resetting at a level that is going to make sense. And it's going to be driven off the biggest consuming part of the world, which is China, which is as its reference point. So we're pretty comfortable that we'll settle in that range, 600 to a little north of that.

**Michael Joseph Sison**

*KeyBanc Capital Markets Inc., Research Division*

Mike Sison, KeyBanc. Mark, when you come back in 2020 and host the Investor Day in Cleveland, likely, right, because LeBron will be there, but...

**Mark C. Rohr**

*Chairman, CEO & President*

We've been looking at Cleveland. We've been really looking at Cleveland.

**Michael Joseph Sison**

*KeyBanc Capital Markets Inc., Research Division*

And you hit your 2 goals in terms of the 900 for the Acetyl Chain and in EM and your multiple isn't where you want it to be, what sort of is the decision-making process in your head to maybe separate the business to ensure that you get the value that you want?

**Mark C. Rohr**

*Chairman, CEO & President*

Well, I put the slide up to show -- I don't know how to express disappointment. I think the model we've put out and the growth, we follow the plan. It's very methodical. And we're not -- there's not a lot of pomp and circumstance in what we do. We just work hard every day. I really would have expected there to be more of valuation go to our shareholders. So it's a disappointment to us that, that's not yet happened. We are working hard to see that, that does happen. We think that there is roughly \$5 billion to \$7 billion of embedded value in our company that's not recognized by shareholders. There are different ways you can do that math, but it's a fair amount. And we show that range up there. When we talk about optionality, we are looking at ways we can unlock that value for our shareholders. And that could well result in us having more than one corporate entity as Celanese. That's okay for us. We're not married to a structure. We're not married to a specific portfolio. We're just committed to and married to driving shareholder value. So I don't think that will be the case. Not that we won't be in Cleveland, but I don't think that -- I just find it hard to believe, if you look at that point in time, it's 8 years of this and 8 years of us looking for ways, and we'll find ways to keep unlocking value that there's not a lot more of that recognized by shareholders.

**Michael Joseph Sison**

*KeyBanc Capital Markets Inc., Research Division*

Great. And as a quick follow-up, when you think about Engineered Materials, the process seems very unique. I don't see a lot of plastics businesses growing anywhere close to where yours is at. You've got a robust new project pipeline. In the event you get capital from other areas, is there other chemical businesses that you can replicate that? Maybe chemicals for consumer that on an acquisition base, bigger base, that would be -- that could be unique for you to buy and restart this engine in another area?

**Mark C. Rohr**

*Chairman, CEO & President*

Well, we've played with that, but I didn't know how you guys would react to it. I think that a model that says that we care about really driving the rate of change embedded within any kind of product line, is a pretty intriguing model. It works well for materials because everybody is focused on the material valuation. So you just have to make sure that it was a model that was demanding that kind of rate of change. We tried it in a former life in fine chemicals and it really was there, but I think at that time, we couldn't put together the right asset mix to make that work. So yes, we will consider that, but we're pretty happy. Folks they know our materials, and as Scott said, we have really, really small market penetration in terms of what's theoretically there. And that's almost infinitely large for us. And in the Chain business, we're focusing on making sure that all our shareholders recognize the value that's really built up in that.

**Vincent Stephen Andrews**

*Morgan Stanley, Research Division*

Vincent Andrews from Morgan Stanley. I have a quick clarifying question, then I have 2 questions. Mark, I believe when you had your value slide up there, you said that the \$11 did not include share repurchases, is that correct?

**Mark C. Rohr**

*Chairman, CEO & President*

No, if you do the math, it's not in there.

**Vincent Stephen Andrews**

*Morgan Stanley, Research Division*

So that was one. And then, secondly, in the innovation sessions, there was some discussion, at least in my group, about how your products -- one of the capabilities is replacing paint -- and traditional paints and coatings. So can you talk about how large of an opportunity that is going forward and sort of where you are, what inning that -- what inning that is in...

**Mark C. Rohr**

*Chairman, CEO & President*

Thanks, Vincent. Scott?

**Scott McDougald Sutton**

*Chief Operating Officer*

Yes, I mean, sure. I mean, Vincent, I mean, it's, of course, one of many opportunities. It's one that we have some very interesting technology to be able to do that. But remember the value of this. I mean, the value is that you're replacing a lot of chaos that's happening within our customers, because they're getting someone to make a part. They're having to ship it somewhere else to get them to paint it. There's all kind of issues with that and ship it back. So I don't classify that opportunity as, for example, bigger than our opportunity in the medical and pharma space, but it is one of those where what we're doing is going out and taking care of the customers' complexity. We're pulling it to our side of the table where it tends to disappear, right? So that situation replicates it 30x or 40x over. We just picked paint for that example.

**Vincent Stephen Andrews**

*Morgan Stanley, Research Division*



Okay. And then, I just have a follow-up on Acetate Tow. And then I apologize if I miss this during the presentation, but I didn't see -- you have utilization about 80% now and that's where the bar ends. So how do you see...

**Mark C. Rohr**  
*Chairman, CEO & President*

Well, we're just going to 2020.

**Vincent Stephen Andrews**  
*Morgan Stanley, Research Division*

How do you see utilization going forward and maybe some comments on the recent declines in cigarette consumption that have been reported in the first quarter?

**Scott McDougald Sutton**  
*Chief Operating Officer*

Yes, I mean, I would say, as far as capacity utilization going forward, I mean, one of the things that we did put forward is, we'll be closing an asset, right? And we'll be looking for ways to accelerate doing more of the same. So I would expect that, certainly, our utilization is going to likely improve over that period. You net that into industry utilization, perhaps it stays in that range for a couple more years out. Your second question, I mean, I realize in at least one quarter, there was some decline in cigarette sales, right? I think we step back and take a look at that. I'm not going to worry too much over one quarter, because you've seen that happen before. You've seen sales go up and down, depending on what promotions are running. Things that are going on in the cigarette industry. So I'm not too worried about it. From our perch, we see that there's still that sort of slow decline going on, not a change.

**Robert Andrew Koort**  
*Goldman Sachs Group Inc., Research Division*

Bob Koort from Goldman Sachs. Scott Sutton, you gave a slide in your presentation that talked about the substantial increase in projects, but not a substantial increase in personnel. Can you give a little more flavor on how that can happen? I would assume a lot of this customer engagement in your model requires face time and headcounts, so how are you able to get that much more efficient with your...?

**Scott McDougald Sutton**  
*Chief Operating Officer*

Right, right. Well, our -- the #1 thing we do is work on that model every day. And as we work on the model, it gets more effective, right? So let me just give you a simple example, Bob. Like, I explained the customer options mapping process, right? If you think about what's going on there, behind a significant-sized customer, there's hundreds of opportunities. Behind us, hopefully, I made the proof, that our solution set is thousands. So how can you get one person to discover, instead of 2 opportunities at a customer visit, discover 30? How do you get him at the same time to match that up against thousands of possibilities and basically conclude a project right there? We get more efficient at the process, right, because that is our IP. We're working on our IP as opposed to just throwing resources at it. When we end up throwing too much resource at it, you bring too much chaos into the system. So you fix the process first, then you grow with some limited resources and add them.

**Mark C. Rohr**  
*Chairman, CEO & President*

It is a key point, because you could bog down the system. I mean, it was -- when we started this in early '13, it was really bogged down with 300 as the output. So that model and how you work that model is going to be a really important part of it. And the informative nature of how we conduct ourselves over this, Bob, we see that as really fertile territory for us to get a lot smarter and a lot better with this.

**Robert Andrew Koort**  
*Goldman Sachs Group Inc., Research Division*

And Mark, you alluded to you would consider whatever business strategy or segmenting makes sense for shareholder value. Is there any issue about lack of scale? If you were to think about separating businesses, that something with \$900 million of EBITDA would suffer a penalty from a valuation standpoint? Or do you think both businesses, both cores are big enough, that as standalone entities there wouldn't be a...?

**Mark C. Rohr**

*Chairman, CEO & President*

We looked at -- we -- I think you guys asked us to, and we did look at it several years ago, at the sort of the hurdle rate which you'd have to achieve to have a blowup, if you will, if I can use that term, end up with the same total shareholder value. And we had some pretty big hurdles there to do that. We have taken steps to pull those hurdles back, really dealing with tax rate and some of the penalty associated with our debt structure. We've even pulled back the pain associated with fixed cost, by thinking -- by being more mature about how we handle the operation of our businesses. Having said that, there still is a negative to that, that you would have to overcome when you -- if you did that sort of thing. So we look at that from a point of view of not so much whether there's scale, but can you actually -- can you really get 2 viable businesses, the sum of which on that instantaneous day, is no worse than the collective sum of the equity value of the corporation. Shareholder value is really then created based on what that -- what happens after that. So if we ever get to that scenario, I think it's going to be a part of a transformational kind of deal that tees up 2 different paths that are immediately seen by you and The Street as being more favorable than the existing combined path.

**Unknown Attendee**

So I guess 2 questions, Mark. So in the Engineered Materials presentation, you guys had a couple of slides that talked about tightness towards the end of the decade; POM going above 100% utilization rates was one of them, but also just more broadly. In that environment, would you expect margins to be -- would you be able to piggyback that environment? Or would you expect margins to decline? And secondly, rather swaggishly, could you address how you think the portfolio acts differently in a recession now, compared to say 5, 7 years ago?

**Mark C. Rohr**

*Chairman, CEO & President*

You want to do the first one?

**Scott McDougald Sutton**

*Chief Operating Officer*

Yes, I'll take the first part of that. And that's right, I mean, in POM, for example, you see industry utilization tightening up. That's also the case in some of the other polymers, certainly not every one that we have. I do expect to see some margin improvement because of that. You may have noticed that we're raising price in this business, and it's not a business that we've traditionally raised price in, but we're bringing a lot of value. Investment cost is quite high, continues to grow, utilization is there at a reasonable level. So I expect to see some expansion.

**Mark C. Rohr**

*Chairman, CEO & President*

Swaggishly, I'm not sure we can handle that. But if you look at it from a recession point of view, if you look back at 2008, 2009, it was certainly as tough a time as any that you would see. You did see movement in demand for a short period of time. So demand kind of really collapsed down and came back up. You saw movement in pricing in the Chain business at that period of time. But keep in mind, if you were operating at that period of time, you were already starting to come off that curve, so you were probably already down at 80% capacity, even in 2000 -- 2008. So I think our view is, or my view is anyway, that I don't think that the EM business would be materially impacted by a recession. In fact, if it was a slowdown, more of a classic, just lethargic business operation, that's what's driving all the change that you saw next door. So in many ways, it just reinforces the need for somebody to do something

differently. And so I think as long as we can find ways to continue to grow in that regard, I think we're probably okay for that business. In Todd's business, I kind of don't see that same pricing dynamic right now. We would not sell acid for \$400 a ton. And we have a machine where I don't need to, if that makes sense. It's a machine where the fixed cost sunk are very, very low. So my guess -- gut is it's not quite as volatile a situation in that arena as we would have seen before.

**Scott A. Richardson**

*Senior VP & CFO*

Yes, I also think if you look at the global nature of our corporation now, we have a lot more balance regionally than what we did before. We were more overweight in the Western Hemisphere back in 2008. Now Engineered Materials has a substantial part of its business now in Asia. So we have a little more global balance than what we had historically.

**Mark C. Rohr**

*Chairman, CEO & President*

Other questions?

**Aleksey V. Yefremov**

*Nomura Securities Co. Ltd., Research Division*

Alex Yefremov from Nomura Instinet. Coming back to Engineered Materials. Mark, your comment that you have no competitors there. Could you, first, maybe expand on that? And in particular, I wanted to know when your initial sale of new, let's say, product development concludes, and you sign a contract, after some period of time, presumably that contract ends, what happens competitively after that?

**Mark C. Rohr**

*Chairman, CEO & President*

Well, the comment on no competitors is the combination of what we're doing in terms of going in with a single point of focus and being product agnostic on that transaction that's occurring. That's how we have no competitors with. So we may be competing with somebody who is selling nylon on that moment in time. And we're selling nylon plus this, plus that, plus that, plus that, plus that. So the deals we like are the deals where they're looking for a unique solution. And the solution set portfolio that we bring is not matched by anyone. That's what I mean by no competitors. So yes, if you're just buying nylon or POM, and you don't care about anything other than making a zipper for your trousers, there's a lot of folks who could satisfy that transaction, not just us. We try to minimize that portion of our business in there. And with the success that Scott and team are having, we're seeing that happen, just minimize over time. I'm not quite sure -- can you ask your second question in a slightly different way to make sure...?

**Aleksey V. Yefremov**

*Nomura Securities Co. Ltd., Research Division*

The second part is just life cycle of this innovation, right? Let's say you have -- you develop a new compound, right, and you sell it and it's unique in -- at that first time of sale, but then after sometime, let's say, the first contract is up, and is there a rebid process when others can come in, and that rebid is more competitive?

**Mark C. Rohr**

*Chairman, CEO & President*

Yes, yes. And Scott, I will let you give more contemporary data, but there is always leakage. We do something, we make a product, we sell it, at the same time, there's another product that's dropped out of the portfolio. They made a substitution, they quit making that model, they've done something different. So part of this process is having enough embedded growth in there, which needs to be probably in the teens, for us to end up sub-10, where we are. Is that fair, Scott? I mean, how you...

**Scott McDougald Sutton**

*Chief Operating Officer*

Yes. I mean, I think, that's right, Mark. I mean, there's a constant attrition in that business, right? But I would also say that a lot of times when you have an order or a contract expire or a certain life cycle, really, it's just another opportunity. In fact, it's really an opportunity to go in and get more projects, right? Having the need to have those extra interactions to prove the solution has been delivered, the enhancements we have and the ability to match that set up, every time we go through that cycle, we normally pull a lot more projects into our system. So you get the attrition, but you get a lot more projects, too.

**Mark C. Rohr**

*Chairman, CEO & President*

Anyone else? Okay, Surabhi in the back. So do we have lunch outside? Is that right? Or...

**Surabhi Varshney**

We do. We're set up.

**Mark C. Rohr**

*Chairman, CEO & President*

Okay, well, listen, thank you very much for being here. Really appreciate the chance to spend this morning with you and all you do for us. Thank you.

**Scott McDougald Sutton**

*Chief Operating Officer*

Thank you.

**Todd Elliott**

*Senior Vice President of Acetyls*

Thank you.

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