USG Corporation

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Participants

Management

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President & Chief Executive Officer

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SVP & President, Gypsum

John Reale
SVP & President, Performance Materials

Chris Macey
SVP & President, Ceilings

Joe Holmes
SVP, Manufacturing, Technology & Global Operations

Ken Banas
VP, Advanced Manufacturing & Corporate Excellence

Matt Hilzinger
EVP & Chief Financial Officer

Bill Madsen
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Presentation

Bill Madsen
Senior Director, Investor Relations

Alright. Good morning. My name is Bill Madsen. I'm the Director of Investor Relations. I'd like to start off this morning by thanking all of you who have made the trip here to New York City. You've braved the snowstorm. You've made it. Really appreciate it. Being born and raised in Chicago, I thought I had seen everything when it comes to snowstorms. Last night over dinner we actually saw thunder snow for the first time -- the combination of a thunderstorm and a blizzard. I'd also like to thank those of you who have dialed in remotely via the webcast. We are broadcasting the event in real time.

On a quick personal note, I took over the investor relations role on November 1st. So I'm still relatively new to the role. I haven't had a chance to meet everyone in the room, but I look forward to working with you, whether you're in the room or on the webcast. First project that I was assigned in the new role was to help lead USG through its first ever investor day. Perfect job for the new guy. Needless to say, I've been looking forward to March 8th for a while. However, through all the prep -- and the team has done an amazing job of kind of prepping for this event -- we've really focused on one thing. The goal was always to make sure that people walked away today with a better understanding of USG and each of our businesses and how we expect to increase shareholder value over time.

Now before I get started, I've got three housekeeping things I want to touch on. First, we're going to be using a presentation today, or a slide deck in conjunction with our presentation today. That presentation is available on our website -- investor.usg.com. You click on the link to the webcast, you can access the slides. For those of you in the room, the little mini booklets that we've printed out is the same thing. The second item: for those of you who are actually in the room, please take a minute, take your phones out of your pocket, please put them on silent or turn them off, just to avoid any unintended interruptions throughout the day. Lastly, for those of you who are on the webcast, during our presentations today we're going to show three different videos. Unfortunately, with the webcast, those videos can get a little pixelated. So we're not actually going to show the videos on the webcast. But all three videos are available on our website. So feel free to download those videos, and you'll watch them simultaneously as we watch them here in New York.

With that, I'm going to go ahead and jump into the most exciting slide that we're going to cover today -- the Safe Harbor statement. Now there's a lot of, lot of font on this slide. But really I want to make sure I convey two messages here. First, throughout the day we're going to make forward-looking statements. And as you all know, actual results may be different from those, from our expectations, due to certain risks and uncertainties. Those risks and uncertainties are summarized on this slide. So I'd like for everyone to just take a sec, look through our cautionary statement.

Now that everyone's gotten through all this text, the second message I want to make sure I convey is, we're going to use a number of non-GAAP measures throughout the day. We use those non-GAAP measure because we think it's a better way to evaluate the performance of our business. On the back of the presentations we have a number of reconciliations that we'll reconcile from the GAAP numbers to the non-GAAP measures that we're going to talk about today.

Moving on to the agenda -- slide three. There are a lot of benefits to an investor day. But one of the most important benefits of investor day is getting the chance to talk with management. And you're going to hear from each of our business leaders. As you can see on the agenda, we have presentations from each of our divisional presidents, as well as key executives. You're going to have the opportunity to meet with our management team today throughout the day, whether that is over lunch or at the break.

Second thing I want to cover is Q&A. So as you can see -- and a lot of you in the room, this is probably the most important thing that we're going to do throughout the day -- we're going to break the Q&A session into two pieces. First one's going to be about twenty minutes. After that, we're going to do a quick break. The second one we're going to actually round out and close out the day for the second Q&A session, which will last about thirty minutes.

Last thing I want to cover before I turn it over to Jenny is the product fair. So just outside, for those of you in the room, hopefully all of you have had a chance to see the five products that we've decided to showcase today. These are some of the same products that we are investing in. I would encourage all of you to take some time during the break or over lunch to talk to the respective general manager who is here representing that product. Each of these products are fantastic, have great benefits. And I would encourage all of you to actually get a chance to pick up, touch, feel those products. Alright. And now, with that -- I'm sure you guys are all getting anxious waiting for the IR guy to get off the stage -- I'm going to turn this over to Jenny Scanlon, President and CEO.

Jennifer Scanlon
President & Chief Executive Officer

I do appreciate the fact that the sun is shining and that you all braved last night's difficult weather to get here and hear about USG's story. I'm excited to be here. As Bill said, I'm President and CEO. I've been in this role almost 18 months. And before that, I spent fifteen years at USG. I started my career at another company that has a strong brand name recognized in the market -- IBM -- and left IBM, joined a small management consulting firm. And, in 1997, USG became one of my clients. So I've been hanging out with this company for a very long time.

And I love the story that we have to tell -- both of our history and our future. And I think many of you are here today because you think of us as the wallboard company. And indeed we are. We invented Sheetrock® a hundred years ago, one of the greatest brands out there. And Sheetrock® is an important part of our story. It's the beginning of our story. But it is not the only part of our story. And that's what we're here to talk to you about today -- our entire story. So let me get to five key messages that I hope you walk away with today by the end of our first annual -- our first inaugural investor day.

Our first key message -- we are a transformed company. We are a pure manufacturer. We have an enhanced portfolio, enhanced by our innovation. And we've turned our company into four focused divisions. And we've refreshed our operating model to ensure that we fulfill our expectations.

Second, we pivoted to a new strategy which clearly articulates our expectations. And that strategy has emphasis on margin expansion. And that strategy is being enacted in a very supportive macroeconomic environment.

Third, we have a favorable cost position. And we cannot rest on our laurels. We will continue to expand that cost position through advanced manufacturing, which you're going to hear about today in more detail, as well as our long history of operational excellence in many areas, and our established culture of safety. And the reason I bring up our established culture of safety is, first and foremost, it is our number one core value. And second of all, we are one of America's safest companies. We are the current holder of the Robert W. Campbell Award for Safety. And what that showcases is our discipline and our ability to execute on the very important elements of operational excellence.

The fourth message is, we are a leader. We are a leader viewed by contractors as the leader. And because of our leadership position, because of this competitive advantage as leaders, they expect us to provide those innovative products, those new solutions, to their challenges that they face every single day. And part of being a leader is providing those solutions in a quicker fashion. So we're in early days of enhancing our operating model with a nimble commercialization process that gets those new products that we're launching to market even faster. And the products that we're choosing are those products that address the most pressing challenges faced by our industry.

And then finally, the best part of this message is that we've got a strong balance sheet. We can fund our aspirations. And we're deploying a very disciplined capital allocation strategy that provides flexibility in the ways in which we deploy our capital with the ultimate goal of enhancing shareholder returns. So that's what you're going to hear today.

But before we get into all of those details, let me just remind you all of USG's history. We're a 115-year-old company founded, still headquartered in Chicago. We operate around the world on four continents. Our sales, as again, as you can see in/and our operating profit, our spread across not just wallboard and surfaces but across all of our divisions and all of our products. And, most importantly, we hold that leadership position -- number one in North American gypsum; number one in our joint venture with USG Boral across Asia, Australasia and the Middle East -- and number two, in North American ceilings. We are leading manufacturer of building products and innovative solutions.

Now let me talk about our leadership team. You're going to meet a lot of us today. This team, this diverse team, has a tremendous amount of experience. This page, which is our corporate officers, represents over 300 years of experience in our industry. Many of you know Matt Hilzinger. He's here today to present. You'll hear from each of the leaders accountable for each of our divisions: Joe Holmes; Chris Macey; John Reale and Greg Salah. And you'll also hear from Ken Banas, who many of you know, who's going to talk about his leadership around our advanced manufacturing initiative. Additionally, we have a number of corporate officers here: Brian Cook, our Chief Administrative Officer; Dom Dannessa, our Chief Innovation and Customer Officer; Michelle Warner, our General Counsel; and Sean Gillen, our Treasurer.

Supporting this management team is a very experienced and diverse board as well. And our board is actively engaged in endorsing and refining our strategic plan. And they have been actively engaged in encouraging us to accelerate our deployment of this plan.

So now let's talk a little more about the last five years from USG. That first message -- us being a transformed company. We had -- we faced, coming out of the global financial crisis -- a number of challenges. And we overcame them and became very financially disciplined in a number of ways that are illustrated on this chart. We improved our operating profit; we improved our margins; we reduced our debt by more than half; we pay about a third in interest compared to what we used to pay. And that's freed up capital for us to deploy on internal investments around growth and cost reduction, and also cash to deploy to return to our shareholders. Most importantly, this transformation, we focused our portfolio. We now are a manufacturer across North America, Asia, Australasia and the Middle East. So these improved operational and financial metrics provide the backdrop and evidence for why we believe in the strategy we're putting forth.

And let's talk about some of those specific actions that delivered those results. We transformed our company. We transformed our portfolio. And we transformed our balance sheet. From a company perspective, four years ago last week we announced the $1.6 billion-dollar joint venture with USG Boral.

This transformed an element of our cyclicality profile. This opened us up in fourteen countries in the fastest-growing markets across Asia, Australasia and the Middle East. In 2015 we began to look at how USG should prepare *itself* for the next hundred years. We've been here 115 years. We're going be here another century.

So what was the right profile for us to have? And that led us to the realization that being a manufacturer who also owned captive distribution that competed with the rest of our companies was not the best profile for us. And so we came to the conclusion that we needed to divest L&W, a leading distributor, and did that at the end of 2016. That transformed our company. We then have launched a number of new products that have transformed our full portfolio. You see the product fair that's out in the hallway? You'll have plenty of opportunity to touch and feel and understand what we've got. But we've got a lot. And we're going talk about innovation both being our heritage and our future. And then we transformed our balance sheet. By making the divestment of L&W, by having the operational improvements that we have, we could accelerate our redeployment of capital. We could announce a coordinated advanced manufacturing program. We could announce and conclude our debt reduction. And we could announce a share repurchase program and then expand that again a month ago.

One last thing visually to note -- you can see a lot more is on the right side of the page that's on the left side of the page. And I think that this is evidence that we're accelerating our progress and our velocity is increasing.

So now, let's talk about another key point that underpins this entire transformation. And that's the fact that we've achieved these financial and operational improvements in a market that is still lagging long-term industry averages. We believe we're in middle innings of this cycle. And when you look at these numbers, it makes sense. Residential starts still well below the fifty-year average of 1.4 to 1.5-ish million. Commercial, non-residential lag starts still well below 1.3 billion square feet annually. R&R -- still below that year-on-year of 4.6 percent growth. We see tremendous upside, and we're in the right position to capture leverage from what the industry will bring.

So now onto our strategy. We are a leading manufacturer, building products and innovative solutions around the world. And we will extend our leadership and achieve unparalleled customer loyalty to fuel profitable growth.

On our February earnings call, I announced the four pillars of our strategy. I'm going to briefly remind you of those four pillars, and then we'll go into details underneath each of them. Our first pillar: profitably grow our core portfolio. There's some key words in there -- profitably; grow; core. Our core portfolio is our three divisions: gypsum; performance materials; and ceilings; with a fourth part of that portfolio being USG Boral that comprises all of those first three sets of products. We're going to grow that both on the top line at rates faster than the market; and on the bottom line, by expanding margin through both new products, price premiums, as well as lowering our costs. And we'll talk more about that. Second pillar: innovation -- our heritage and our future. We will continue to innovate to address industry challenges. Third pillar: our organization is aligned and enabled to fulfill this strategy. We reorganized into divisions reporting directly to me, and we'll talk about the importance of that in fulfilling our strategy. And then the fourth pillar: maintaining that disciplined capital allocation. This strategy we believe will achieve superior performance at all points of the cycle.

So let's talk about each of these four pillars a little more. First pillar: our core portfolio. It is logical and it is focused. The first piece of this portfolio is our Gypsum division led by Greg Salah who you will hear from next. This division is the home of our iconic brand and the home of our number one leading position across North America. This is the division that contractors recognize our brands, our technical superiority, our expertise, and they are loyal. And what you're going to hear is, in focusing this division, how we're going to expand operating margin through the portfolio that we have and the price premiums and the cost reduction opportunities that we have.

Our second part of the portfolio: Performance Materials. Many of you know these products as formerly known as substrates. But let me tell you why we broke this out as a separate division. This is our entrepreneurial growth division. These are the products, the new products that are being launched that provide disruptive, innovative solutions to the problems that contractors face. And this is a division that has an opportunity to grow both topline at a very rapid pace because of adoption and conversion to new construction practices, as well as grow the bottom line as we enhance our scale and our breadth of what we have to offer. So you'll hear from John Reale today, President of our Performance Materials Division.

Our third division, Ceilings -- we have a long history of a strong number two position in our Ceilings division. And we've got a track record of sustaining high margins. We've been innovating and investing to expand our position in the higher growth portions of the ceilings market and, at the same time, we're true to our heritage in/and preserving that installed base and the ability to address the repair and remodel of annuity business that's out there. This is a division that also enjoys exclusive distribution with leading distributors in every market across the country. And then -- and you'll hear from Chris Macey with a lot more detail about his initiatives.

Our fourth division -- USG Boral. This is a joint venture. Joe Holmes is here today, recently returned from five years overseas, most recently as Chief Operating Officer of USG Boral. Joe does a little bit of double duty. He also oversees our manufacturing and technology organization. But Joe will tell you about how USG Boral has all three of these other product sets across fourteen countries and the highest growth markets in the world. We've got a number one or number two position in plasterboard, as they call it over there, in many of these markets. And we're seeing continued adoption and penetration for Western-style construction practices occur, again, creating greater demand for all of the product categories above it. This is a logical focused portfolio that is positioned to drive profitable growth.

So let's talk about some of the investments though. You have to invest to grow. And I have a philosophy -- that you also have to earn the right to grow. And so we announced a number of investments, specifically keeping us in about ten percent of SG&A as a percentage of revenue. And those investments are required to fulfill the vision of the strategy, because there are some things that are new and different about these products and the growth trajectory that they're on. EcoSmart, the industry's only sustainable wallboard, specified by architects because of the sustainability of the manufacturing process, as well as the way in which it enhances the overall LEED scores or other sustainability factors of the building. To get that message out, you have to have the right interactions with architects; you have to get into the specifications; you have to be able to communicate the features, functions and benefits of that product in a way that's very different than just selling to the channel. Ensemble™ -- the industry's first acoustical drywall for ceilings. This is a product that architects have been clamoring for, begging for, for years. And because of that, we've got to have a team very focused on those architects and getting that specified into high-end iconic projects. Because once it gets out there, people see it, they use it again, and they don't have to shout at each other in a restaurant or in a conference space. Tremendous benefits. But it takes time and energy to get that specified. Securock® ExoAir® and structural panels. Again, different techniques; changing construction practices. These businesses -- John's going to talk about them -- have to get in front of the builders, the structural engineers, the general contractors. They get pulled through the channels by those ultimate end users. But it takes time and energy. So our investments that we're making are in commercializing these projects faster, in having technical sales teams out there in the field getting in front of them, and then using the right types of data and analytics around pricing optimization, around adoption rates, around understanding whether or not our tactics on the street are fulfilling our ambitions, which we believe they are.

So as I said, every single one of the investments we're making in these new products in this growth plan has a return on investment and a number that we're tracking. And we will spend this money wisely to achieve the growth that we expect.

Now let's talk about another piece of this first pillar, which is how we're going to continue to extend our cost position. Ken Banas is here to talk about advanced manufacturing. You've all heard it's a $300 million-dollar, multi-year investment across 400 projects. And it's got an expected run rate of $100 million dollars of

EBITDA savings, starting by the end of 2020, with $25 million of that committed this year.

But let me tell you why I'm most excited about this. Ken's going to talk about the way in which advanced manufacturing really enhances our workforce and advances their skills and capabilities. And that gives these projects a very long tail. Our workforce, combined with data, will ensure that we've got a continuous improvement process that enhances our operating model for many years to come. This gives us margin expansion independent of volume and price.

And then the second pillar of our strategy is innovation. We're showcasing products that we have already invented. But there's more to come. Our innovation team in Libertyville, Illinois in our customer innovation center spends about one percent of USG's revenue annually on innovation. And it's money spent wisely. About 45 percent of their budget is focused on continuous improvement -- new raw materials; new formulations; product enhancements; just ways to do what we do even better. About a third of what they spend their time and energy on, is on division-led initiatives, kind of the all-new and improved products. And we've got a number of product lines and product line extensions that have been launched as a result of these division initiatives.

Twenty percent of where they spend their time and energy is on what we like to call the big ideas. These are the breakthrough technologies. How do you get water out of the drywall process, resulted in UltraLight™ and resulted in EcoSmart. How do you get a seamless look of drywall on the ceiling with the acoustics of mineral fiber ceiling tile? That's what launched Ensemble®. These big ideas are those next generation, transformational technologies that come out of our leading innovation center.

And within that center, we've got a number of priorities. Dom Dannessa, who is here -- Dr. Dom -- just recently -- is very, very focused on purposeful innovation. And his team is oriented around three major challenges that our industry faces. How do we improve job site efficiencies? We've already got products that do that. We make it safer, we make it faster, we make it lighter weight. We reduce likelihoods of job site delays. And we help with cost savings on the job sites. This is a real challenge that commercial contractors face, as well as residential contractors -- skilled labor shortages, safety, other challenges. The more that we can invent new products that help with that, the better off we all are.

Sustainability. Sustainability has long been a part of USG's culture. If you even think about the way in which wallboard is manufactured, it's a lot of recycled products, both in the paper and in the core. But sustainability is greater than that. It's sustainability in the manufacturing process, in the energy savings associated with the way in which we manufacture EcoSmart, it's savings in the way in which you can put the vapor barrier onto, factory-applied, onto sheathing and ensure that that building is more sustainable. And it's overall sustainability in reduction in greenhouse gases. And we all know that buildings emit about forty percent of the Co2 emissions.

The third area of purposeful innovation is around high-performing solutions. There are new materials out there, new techniques, new ways of doing things. And this is something that we believe as leaders we have to stay ahead of the curve on. And so we've found ways to pre-apply that membrane for ExoAir® 430. We're addressing opportunities where builders, general contractors, are out there addressing skilled labor shortages through panelization or modular construction. And because of new and different materials, we're finding ways to help facilitate their advancements in those areas. So we spend a lot of time -- we've got the commercial construction index in front of all of you -- we spend a lot of time listening to our customers and ensuring that what it is that we're inventing addresses their real challenges and their real needs.

The final element of our innovation pillar is the fact that we've introduced an accelerated commercialization process. Our industry is a tough industry. It can take eight to twelve years on average from somebody to have a good idea, for that to actually achieve a sale in front of a customer. And indeed, when you look at Durock®, which we launched in the 80's -- part of our Performance Materials division -- it took us about nine years for full adoption. But we've been accelerating that. UltraLight, we got to market in seven years. Ensemble™, we got to market in five. And EcoSmart and ExoAir® 430, we got to market in four. Part of our investment for growth is in a new commercialization team in-house. In the past, we've had some outside experts help us with this. But having a team in-house, again, evaluating those customer needs, acting quickly to prioritize and validate what's in front of them, accelerating that research and development around those needs, and then rapidly applying a go-to-market discipline that gets these products sold. So we will see a higher rate of successful outcomes from this process.

Our third pillar: align and enable our organization. As I said, I restructured our organization into three specific divisions reporting directly to me last fall. And this was important. My philosophy is, you have to let the teams be close to the customer. You have to have a flat organization structure. And you have to give the teams the agility to adapt to the different customer needs. The products for wallboard and surfaces have a different cycle, a different adoption model, than the products in Performance Materials and the requirements in ceilings. And so, we've organized around this division structure. And then we underpin that with a low-cost shared services model. So where you don't need to duplicate effort, we don't. Our customer-facing elements of the business; the teams that are out there with the channel, with the independent specialty dealers, with the Home Depots of the world, with the rest of the retailers -- these products are sold through all those channels. So that's one team.

Our innovation process -- that is one team focused on each of these divisions. Because when you think about it, that Ensemble™ invention required expertise in wallboard, surfaces and acoustics across divisions. So again, important for shared services. Our manufacturing technology team -- this is the home of our global supply chain team, a discipline that we've enacted when I started at USG fifteen years ago. Home of all of our manufacturing and our technology, and then our overall support. So it is a cost-effective, agile and responsive organization.

We're enabling our organization in two ways. I commented that we have a refreshed operating model. And there's some elements that are refreshing that through the way in which we're deploying advanced manufacturing. But I think what we all have to remember is USG core values are the basis for our operational foundation.

I said earlier, safety is our number one core value. Our quality numbers are outstanding because of our processes and our plants. Our innovation is our heritage and our future. We've got a diverse team and will continue to expand that. Our efficiencies through a number of mechanisms like our global supply chain, like our continuous improvement efforts, like Lean Six Sigma, which we've been doing for well over a decade, are integral and part of our core values. We've got integrity and an intense focus on customer service.

But one of the important elements of executing a strategy is explaining to the organization what's different. What are the behaviors that they need to enact to ensure that those key elements of that strategy happen? And this is something that we worked very hard on late last year and launched into the fall, which is how you put the strategy into action. People understand what their priorities are. They've got their initiatives list. But this is the way they're going to get it done. They're going to focus on the customer first. The customer is always first. They're going to use data and analytics. And they're going to do it quickly and move with a sense of urgency. We're going to be honest and candid with each other and in what we're seeing. And that will allow us to shift or pivot as appropriate to ensure that these strategies are executed appropriately. And we're going to hold ourselves accountable. We measure everything. We hold ourselves accountable to each other. We hold ourselves accountable to our customers. And we hold ourselves accountable to our shareholders. These are our ways of working. This is our corporate culture.

The final pillar of our strategy is our disciplined capital allocation. Matt's going to talk a lot about this. But let me tell you, this is in order of priority. Our balance sheet will stay flexible. We will keep reinvesting to lower cost and ensure that we're funding the appropriate organic growth opportunities. We will return cash to shareholders appropriately. And we'll evaluate M&A opportunities appropriately. Ceilings Plus is a perfect example of the type of acquisition. It fits into our core portfolio. It enhances our ability to use our current assets. It fits in with desires that our customers have. It's a great acquisition. If we have other opportunities across our divisions to enhance our core portfolio in a similar way, it's exactly what we will do.

But the key message is, our use of capital is disciplined and it's always focused on driving shareholder value.

So finally, the page everybody wants to talk about -- what is this going to get us? You're going to hear from each division how we're going to achieve these numbers. But let me tell you the commitments that we're making today. In our U.S. Wallboard and Surfaces product lines, in those divisions, which is part of our gypsum division, you will see us move from 16% to 20% percent by 2020. And we're going to do this through cost optimization and our product portfolio. In U.S. Performance Materials we're going to move from 6.4 percent to a run rate of over 10% by 2020. This is breadth; this is scale; this is adoption; this is penetration of products; and this is price optimization as well as some cost reductions. And in Ceilings, you're going to see us continue to move up from 19.3% to 23%. And this is through continued evolution of higher-performing, higher margin products, the inclusion of Ensemble®, and the inclusion of Ceilings Plus®, and what all of those products do for us. So I expect margin enhancement across all of our businesses. Our teams are excited and aligned about hitting these targets and these numbers. And you're going to hear from each of them today specifically on how we expect to get there.

So before I turn it over to them, let me wrap up with our investment thesis. And you know, one thing I do want to point out -- anytime you see green on a building, just remember that's USG. When you're driving down the highway, that's us. And that's us, because we are a transformed company. We're pure manufacturer. We're operating in a supportive macroeconomic environment. We've got a logical focused portfolio. And we are leaders. And we have leading positions across North America, Asia and Australasia. And where we don't have leading positions yet, we have a line of sight to get there. We've got a new strategy. That strategy puts customers first. It emphasizes expanding our cost position with manufacturing cost reductions, as well as growing the top line through price optimization. That gives us margin expansion throughout the cycle. We've got a strong balance sheet that supports our aspirations. And we're projecting growing free cash flow and EPS growth. And most importantly, you've got to have the right people to get this done. And what you're going to see today, and the people you're going to meet are a very experienced, very enthusiastic management team. They've got a clear strategy and they understand that we are going to drive superior performance at all points of the cycle and increase shareholder value. So with that, I'm going to turn it over to Greg Salah, President of our Gypsum Division.

Greg Salah
SVP & President, Gypsum

Good morning. It's a pleasure to be here today to discuss with you USG's gypsum business. To give you a little bit of background on me, I've been with USG for 32 years. I've spent my career primarily in sales, marketing, general management and senior leadership roles. I've been very fortunate that I've spent the vast majority of my career directly in front of our customers, which I think has prepared me as I have assumed greater responsibility throughout my career. By nature I'm an optimist, but my optimism in USG's current opportunities are well grounded in the opportunities that lay ahead of us.

As I go through my presentation today, there's going to be a number of common themes. And it begins with innovation. It's a core competency of USG and reflects our deep commitment of leveraging technology to produce product solutions for our customers on the job. It's a key element of our strategy of sustainable competitive advantage. Innovation over the years has led to a steady flow of new products that has created the broadest portfolio of products in our industry that serves all customer segments. Third, we have a national -- or excuse me, a North American manufacturing footprint that services our customers in all geographies. When you have innovation, product portfolio and a great manufacturing network, we're a very attractive partner for the channel leaders. We have a clear conduit to reach all of our end use segments.

And finally, we create value that our customers are willing to pay for across our portfolio. We capture this value through our North American sales -- or our North American commercial and architectural sales teams.

So as you look at our business, in 2017 we generated just under $2 billion dollars of sales and created just a little bit over a $305 million dollars adjusted operating profit. These business results are fueled by a variety of family brands under our flagship brand of Sheetrock®. And just for reference, our Sheetrock® brand turned 100 years old last year during 2017. Within our wallboard and surfaces business, we have a variety of other brands that are well recognized by our end use customers. If you look at how our sales are segmented, in 2017 fifty percent of our sales went through the repair and remodel market. And this is based on the fact that -- this is based on our relationship with The Home Depot that is longstanding. At the end of 2017, we remained the number one manufacturer of wallboard and surfaces across North America.

So our Gypsum division is broken down into two businesses -- wallboard and surfaces. These are excellent businesses that are about as complementary as two businesses can be. Our joint treatment products are used to finish the drywall installation. Both businesses are number one in their respective markets. And they go through the same channels of distribution. Looking at wallboard first, we have an array of products to service both the residential and commercial market. In residential, we primarily go to market with our half-inch UltraLight™ portfolio, which is the lightest weight panel on the market and the contractor preferred product on the market. Later this year, we are introducing our next generation of wallboard that will be marketed under our EcoSmart name. In the commercial market, we primarily sell our 5/8 fire code panels. But we launched our next-generation panel of EcoSmart in the first quarter of 2017, and it is gaining rapid traction. We round out our commercial offering with a suite of high-performing products including our Glass-Mat portfolio.

When you think about the surfaces business, think about customers selecting products based on the workability in the different job applications that they're going to encounter in their work. We have a deep portfolio of products that address these different needs and address the different types of job site conditions that come up. The depth of our product portfolio is what distinguishes us from our regional competitors as one of the driving factors on why we have two to three times greater market share than our competitors in most North American markets.

This next slide lays out our manufacturing footprint. We have thirty-one facilities across North America that shortens the distance from our plants to our customers' place of business. Our supply chain enables us to move around product to serve the busiest regions. We are strong in all U.S. markets, but we have particular strength in the Midwest, Mid-Atlantic and Northeast. Our manufacturing network is in excellent shape, but we are investing in our existing relationship -- our existing network, excuse me -- to lower our cost in the fastest-growing markets.

An example of this is, we recently upgraded our specialty wallboard line in Plaster City, California which has significantly lowered our delivered cost of specialty panels up and down the West Coast. We are currently investing in our Jacksonville, Florida plant that'll improve our costs in the fast-growing Southeast region. We use both synthetic gypsum and natural rock. And we mine our natural rock in twelve quarries around North America. At the end of 2017, our mix of rock and SynGyp was about fifty-fifty. And again, at the end of 2017, we ran our plants at about 70 percent of our nameplate capacity. This is ten points below the industry average. And I think the key point here is that we have low-cost capacity in place to service a growing market.

As I mentioned earlier, we have an array of products to serve the different types of building construction, whether it's commercial or residential or the sub-segments below. One of our key advantages is, we're partnered with the channel leaders that allows us to effectively get to each one of these segments. We have strong partners in the retail distribution, specialty distribution, lumber yards as well as manufactured housing. We close the loop by having strong contractor relationships. We're unique in our space that we call on contractors. And what this does, is it allows us, number one, to provide technical support to our contractors; it allows us to expedite the acceptance or the adoption of our new products; but most important, it allows us to pull through demand for our distribution network.

There are three macro trends that are changing the nature of demand in the gypsum business. As Jenny mentioned, we are going to innovate, to develop products to solve these problems in our markets and for our customers. And it really comes down to what I call jobsite productivity, sustainability, and high-performance solutions. Everyone knows in this room that in the construction industry we have a skilled labor shortage. Our customers are looking for products that install faster, easier and less, with less wear and tear on their people. This led us to develop our -- for us to develop our lightweight wallboard portfolio of products that today is a platform technology that serves all the various products that we make.

Secondly, around sustainability -- we know this is an emerging trend -- the leading architects in the U.S. have come under an organization called Architecture 2030. And this is the goal of reducing the carbon footprint in buildings by fifty percent -- by forty percent. USG is the first wallboard manufacturer that has signed on for the 2030 challenge, meaning we have set the goal of reducing our greenhouse gases in the production of wallboard by fifty percent by 2030. This led us to develop our EcoSmart platform of products. We had launched our first product last year. We have effectively reduced our carbon footprint on this product by 25 percent. We are going to continue to innovate to address the emerging trends impacting our markets and our customers.

So what makes USG different than our peers? And it starts with a, with our broad portfolio of products that are marketed under well-recognized brands. Strong brands support preference and create customer loyalty. Secondly is innovation. We're innovating to solve real problems impacting our markets and our customers. Third, we are partnered with the industry leaders in our distribution channels. Whether it's Home Depot in retail, L&W, GMS, Foundation and other independent dealers, we have a clear path to service our end use segments. Fourth, we have a low-cost North American manufacturing footprint that allows us to serve every region in North America competitively. And we are the absolute low-cost deliverer of wallboard and surfaces in the many markets around North America. And finally, we have a mix of natural rock and synthetic gypsum, which allows us to control the cost and availability of our most important raw material.

So as we look to the future, our path to growth in the gypsum business is about extending our leadership, creating greater customer loyalty, and improving profitability. The way we're going to do this is by creating a differentiated product offering that benefits all of the customers that we touch through the supply chain.

So here we are today. End of 2017, USG is the number one wallboard manufacturer throughout North America, the largest manufacturing footprint, and we have capacity in place to service a growing market. Despite this, I wake up every day focused on how I'm going to extend this advantage. Our path to growing profitability in the gypsum business is going to be squarely focused on differentiating our product offering, focusing on the best end use segments, positioning our customers to win, and getting paid for the value that we provide.

We offer a deep portfolio of products that differentiates us from our competitors. But, on top of that, we have a slew of proprietary products that allow us to pull through our total portfolio at a price premium. Let me give you an example of this. We are changing the commercial and multi-family wallboard market through the development and launch of our 5/8 inch EcoSmart panel. EcoSmart weighs 21 lbs. less per sheet. And as you can imagine, if you're working with drywall and putting up forty or fifty sheets a day, this is a big advantage. EcoSmart provides economic value for every customer in the supply chain. EcoSmart is sold at a premium. It has higher margins. And our customers win because we position them to get work in the market that other dealers cannot get. Overall, this is a win-win for everyone that we touch.

My second objective is to create greater customer loyalty by leveraging technology, our relationships and brands, and operational excellence. Technology leadership is about having the best products and the best processes in the industry. I've talked about our product innovation around our lightweight technology in EcoSmart. But we are also a leader in process innovation. Process innovation are the technologies that we pioneered at our plants over the years that allow us to manufacture the highest-quality products on the most consistent basis. In our industry this is fundamental to our customers. Because for our customers, they've got to get it right the first time. Because if they don't, you can wipe out the profit on any job with any type of product problems.

Secondly, it's around relationships and brands. I've talked about our channel partners and our brands. We're going to continue to invest in this area to make sure that we're capitalizing on these franchises. Finally, operational excellence is about going from our gypsum mines to our customer's place of business in the most efficient and effective way. It's about having the right network of facilities and the right supply chain to make USG the most dependable deliverer of product throughout North America. These three drivers have enabled us to date to have a net promoter score that's 3X of our closest competitor in the wallboard business, and 2X to our closest surfaces competitors. We do not take this position lightly, and we're going to continue to work to extend our advantage.

My third objective is to improve profitability. To my team at USG, this is straightforward. We think about it in three dimensions. And it starts with price management. We manage price and volume to maximize profitability. We're deploying pricing analytics to make sure we are making decisions in the market based on facts and not emotions. We're also using these analytics to make sure, as we go through our full portfolio of product, we're capturing the full value of everything that we sell.

The second dimension of profitability is our cost management. We are investing in advanced manufacturing. We're implementing lean manufacturing and Lean Six Sigma. Seventy percent of our company's investment in advanced manufacturing will be in the wallboard and surfaces business. This gives us a great opportunity to lower our cost and improve our operating margins. And finally, driving profitability is around portfolio management, we go to market trying to create differentiation with proprietary products that allow us to get a price premium on our full portfolio.

The other thing I just want to quickly mention is that we are investing, we are investing in our, in our CRM technology in order to provide our customers with the highest level of service. And that'll be up and implemented over the next two or three years. Success in these three areas will allow us to move our operating margins from 16% to 20% over the next three years.

What I'd like to do now before I wrap up is just give you a quick case study on EcoSmart. Jenny talked about our commercialization process that we've implemented in the last year. And remember, the goal of our commercialization process is twofold. The first is, is to get product concepts from idea to invoice in less than four years. Secondly, it's about accelerating adoption in an industry that historically has adopted new products very slowly.

I think about commercialization in three buckets. The first bucket is around doing more up front work, more analytics, to make sure that you are meeting the needs or unmet needs of your customers, and you have the technology to deliver. The second bucket is going out and going through thoughtful pilots, to make sure that the product you have in the market is marketable and that you can get the returns and the margins that you need to make it a successful project. The third leg is around going through the process of creating the business case and competing for capital internally against other divisions and then, once you have those projects approved, of having the resources to go out and execute to get adoption. EcoSmart hit each one of these buckets. And what it has allowed us to do is to bring this product to market in less than four years and have success in the first year. We launched this in the first quarter of 2017. In 2017, it allowed us to grow our five eighths volume across the full portfolio of five eighths by 9%. EcoSmart, by the end of 2017 became 20% of our five eighths in sales. And remember, EcoSmart is sold at a price premium, higher margins, and benefits our customers.

To wrap things up, we have a great opportunity in the Gypsum Division to expand our operating margins. And there's a few key points that really jump out, that really clarify this. The first is that the macroeconomic and industry indicators are favorable. We have capacity in place without any capital or investment to serve the growing market. Secondly, we have the broadest portfolio of products, many of which are proprietary, that allow us to sell our full portfolio at a price premium. Third, we have incremental operating leverage in advanced manufacturing to drive out cost to drive margins. And then finally we have a focused and skilled North American sales organization that can go into the market and sell value. And that, with that, that concludes my comments. I'd like to introduce John Reale, our President of Performance Services.

John Reale
SVP & President, Performance Materials

Good morning, everyone. And I'm thrilled to be here today in representing USG in the Performance Materials Division. In my thirty-plus year career at USG, I've been very fortunate to have held a number of positions within the company including regional sales, customer service, IT, marketing, and product development, prior to some general management opportunities. And that, those experiences gave me a unique perspective, and really add to my confidence and my excitement about what's in front of us and about what I'm going to be presenting to you today. I know that the Performance Materials Division may be new to many of you. So what is it? We consider ourselves a growth engine for the company. And we do this by focusing on solutions that simplify and speed up the construction process, and by utilizing high-performing materials that we expect to outpace the industry growth. And you may be familiar with this type of story in the residential area where building materials introduced disruptive materials like James Hardie's fiber cement siding, or Trex Company's exterior decking and railing. Well, in similar fashion with our portfolio, we are introducing disruptive solutions for the commercial and multifamily sectors. And we feel this is a great foundation to build and deliver profitable growth to our investors.

So as I go through my material today, I hope you take away five things. First, we have innovative and disruptive solutions that can really make a difference in the industry. Second, what I'm talking to you about today is already making an impact. These solutions have been fully developed; they're commercialized; and they're already generating new revenues and profits for the company. Third, there's a significant opportunity for market penetration and share gain with these solutions. These products have been fully tested. They meet the needs of the marketplace and our customers already like what they see. And then fourth, we fully understand this is not just about scaling revenue. We must have corresponding margin expansion, and that is part of our plan. And then lastly, I have a great team that we have built. They have a proven track record. And they're ready to, they're ready to deliver on our growth plan. So to highlight some of these points and give you a little bit more perspective on why we're so excited about not only our portfolio but about our growth opportunities, I've got a quick video for you to look, look at.

[Performance Materials Video]

John Reale
SVP & President, Performance Materials

You can do me a great favor. So, at the next break or at lunch, please stop by, stop by the tables out there. We have two of these products that you saw -- the ExoAir® 430 air barrier and our structural panel. You get to see it, touch it, feel it. And you'll I think get a better sense of why we're so excited about these opportunities.

So as we look at 2017, really the most notable change in 2017 was the fact that we separated from what once was substrates into our standalone division of Performance Materials. Obviously, this calls out our excitement and confidence about this business and its future. In 2017, we had $373 million in net sales and added $24 million to the bottom line. As the video said were broken out into three different units, the first being the building envelope, which includes our Securock® ExoAir® 430 air barrier system along with our roofing business, that made up 20 percent of our sales.

Then the structural panels -- it's a newly formed unit, and it's a portfolio of structural panels that is already changing the way buildings are being built. That made up only five percent of our revenue in 2017, but you should note that we were sold out the vast majority of the year. We're adding capacity to keep up with the demand of that product.

And then third is our underlayment business. And our underlayment business includes some industry-leading tile backer panels; our new waterproofing systems; as well as our fast-growing port flooring products. So as we look at the overall portfolio of the division, it's really a mix of both established and new, newly-commercialized products. With building envelope and structural panels, we are really focused on high-growth areas, by focusing on demands of customers where they're asking for job site efficiencies and speed of construction. So those are the products we have there. On the underlayment side, it's really -- we have both new and established products; we have our industry-leading brands like Durock® and Fiberock® tile backers and our Levelrock® poured floors. But we've also added new products like our shower systems and waterproofing systems that are going to bring us new business moving forward.

But we know it's not just about the right products and the right solutions. We must deliver what the industry and our customers are asking for. And obviously, when we look at the availability and skill level of workers, that's one of the biggest concerns contractors have out there. So it's imperative that the labor that does exist has to be as efficient and productive as it can be. So one of the things that USG is doing to help that, is we are integrating solutions in the factory, and we're taking steps and waste out of the field and we're utilizing lightweight, higher-performing, more sustainable solutions that are not only providing better quality products, but they're also helping to solve for issues that are industry has dealt with for far too long.

So why is USG best suited to be able to deliver these solutions? First, USG has a great reputation for both quality and innovation. And we have strong brands. And that promotes loyalty among both our customers and our end users.

Secondly, we take great pride in our inventions. So when we have innovative products we make sure they're patent protected through patents, trademarks and trade secrets. Third, we can leverage the extensive network of plants that USG has to not only manufacture our products, but also have additional shipping points to better serve our customers. Also, we benefit from the fact that we are able to use established USG customers to distribute our products. Products like the ExoAir® air barrier system and the structural panel actually go through gypsum specialty dealers where we have built deep and long-lasting relationships over the years. We're also able to leverage our relationship in the retail channel when it's appropriate.

So and the last point there was, we have great experience in scaling new businesses. And what I mean by that, is that the people I have running each of these units is experienced, they're creative, and they're driven. Prior to the segmentation, we were part of the U.S. Gypsum segment. And we were considered the incubator for new product ideas.

And during that time we earned a reputation of being nimble. We earned a reputation of finding non-traditional outlets for our products and being fast to meet the demands of our customers. And during that time, through the last housing cycle, we were able to generate a 12 percent CAGR over that time frame. So I feel great about the team. They're experienced, they understand the market, and they have a proven track record.

So now as we look at our overall opportunity -- and as I've mentioned, we have opportunity in both established and new business areas -- so these are our four pillars of our organic growth plan. And there's a common thing among each one of these. First, there's a large addressable market opportunity in each one. Second, USG provides superior performance to our customers with our product solutions in these areas. The other thing to note is that each one of these areas provides a significant upgrade to the current construction method that exists. And it also happens to be in areas where we don't have a huge market penetration. So we have this significant opportunity to gain market share in these areas with these innovative products to hopefully -- and expect, we expect to significantly outpace the growth of the industry.

So with that, here are our four product focus areas. One, to establish a leadership position in the building envelope world with our new ExoAir® 430. Second is to fully commercialize our new-to-market structural panel. Third is to penetrate the fast-growing waterproofing segment. And then lastly, leverage our multi-family position with our poured floors and extend into the commercial flooring sector, which has a larger opportunity. So let me talk a little bit more about each one of these and talk about the market dynamics, value proposition and the incremental revenue opportunity that we have.

So if we look at the ExoAir® 430 -- and that is the orange product that you see out there. So as Jennie said, when you see green, it's USG; but when you see orange, it's USG too. So hopefully you'll start to see more of those. But we consider this a $900 million-dollar opportunity. And one of the things that we realized when we looked at this opportunity -- today, in today's world this is a manually applied air barrier system on commercial structures which are required by building codes. What we have done by partnering with another company called Tremco, that is an expert in air barrier systems, we basically factory apply this membrane on top of our green product that Jenny talked about, that glass mat sheathing in the factory. We take out all the variables when it comes to weather. We take out a lot of labor in the field. We're able to install this 40 percent faster. We have seen jobs shave weeks off the construction cycle. So we feel great about this product. We feel like it's an industry changer. And we're just now making some great strides in penetrating the market. So we see this, and we -- our goal is to become the number one air barrier solution out there. And we expect $30 to $50 million-dollar incremental revenue gains by 2020.

For our structural panel, again, we see a very unique and industry-changing opportunity here. Our solution is a ¾-inch high strength structural concrete panel that is a dry construction method alternative to poured concrete. So you're taking the variable out of cure time of a poured concrete floor. Also, also other weather delays that can happen on a job site. So we feel that this is a great opportunity, a lower installed cost because of the time savings, labor savings. And it's also a lighter weight construction method. So it gives you a little bit more flexibility around the design of a structure. And a good example of that is in Chicago on Navy Pier -- they're building a new hotel. And if that hotel was built in traditional methods with poured concrete, they would have had to add and reinforce additional pillars under the pier in Lake Michigan, which obviously would be very costly. But because of this solution, being lighter weight, having the flexibility of design, they're able to build that six-story hotel with our panel in a much more cost-effective manner. So we see those types of opportunities in a lot of different areas. And again, if you have time to go see this product out there, I think you'll get a better feel for what I'm talking about. We see this as a $35 to $55 million incremental revenue opportunity by 2020 with significant upside in the long term.

Our third initiative is to penetrate the fast-growing waterproofing segment. And where we see a significant shift in consumer preference going to larger walk-in showers, more open spaces in bathrooms, these waterproofing systems have become extremely important. We know this market well. We're in the bathroom and high moisture areas with our tile backer products. This is just a natural extension of the product offering we have today. And this is growing at five times the pace of tile backers, so it's a part of the segment that we need to get into. And we have a great solution. Our solution can save up to two days in labor over a traditional mud bed. So we again see significant opportunity here -- $35 to $55 million dollars in incremental revenue by 2020.

And then lastly, and in similar fashion, we're taking advantage of our current existing leadership position in the multi-family sector with our gypsum poured floors, and extending that into the commercial flooring sector, which is a much larger opportunity for us. Very contractor-friendly products; lot less preparation than your traditional Portland cement-based products. We have a great track record with this business and with these products, high confidence that we can scale this in the near term, and by 2020 add an additional $40 to $60 million dollars in incremental revenue.

So as you see these opportunities -- and one thing I want to step back and say is that, you know, we've spent a significant amount of time of evaluating this business and its potential. And one thing that our market research told us is that there's a number of industry trends out there, construction trends out there, that the products I showed you can take real advantage of. But most importantly, our research told us that there's going to be sustainable growth opportunities in the long term. So we feel very excited about what we have. We know it's not just about scaling revenue. We know we need to get the margins. And we have measures and metrics, and we're going to look at each one of these initiatives to make sure we're getting the value for our innovation. And we feel good about our plan and we feel good about what we need to do to get to those margins that you see there. I'm certainly holding myself and I'm holding my team to get there. And we have high confidence we can do that. So hopefully that gives you a better feel for the Performance Materials division.

We feel really good about our team and about our plan and our ability to execute. We feel like we have the right products at the right time, the right team in place, and the right plan to execute on profitable growth. So we feel good about the future and we feel good about this business. Thank you. And with that, I'd like to introduce Chris Macey, President of Ceilings.

Chris Macey
SVP & President, Ceilings

Good morning. My name is Chris Macey, and I'm the President of USG's Ceilings Division. As Jenny mentioned earlier, I've spent over 20 years working in the building materials manufacturing industry. I've actually spent time with two companies, two leading companies – Owens Corning at the front end of my career, and now obviously with United States Gypsum, USG. My background, much like Greg as well as John, sales and marketing, operations and now, for several years, general management. So it's a real privilege to be here today. And let me start by saying, it's a great day to be in the USG Ceilings business.

We expect to expand our margins by taking advantage of this ongoing shift toward premium products and finishes that present themselves and the commercial opportunity. We're investing in our capabilities, both from a specialty ceiling standpoint as well as a monolithic solution standpoint -- again, looking to take advantage of these premium opportunities. We're focused on growth by innovation. That's what USG does. So we're going to innovate to take advantage.

And this is all about meeting the needs of our customers now, but also their future needs. And I would highlight for you that we are partnered with leading exclusive commercial distributors across North America, as well as leading retailers across North America.

So we're a leading manufacturer of specifiable products that go into largely the commercial space. And we're a highly profitable number two in North America. In 2017, we sold $477 million dollars' worth of product. And that generated over $90 million dollars of adjusted operating profit. When you look at the list of brands that support this great business, think about how that positions us in front of architects, designers, building owners, major tenants when they're contemplating the choices they have. And we are adding to that portfolio now with USG Ensemble®, as well as USG Ceilings Plus®.

Where are we today? The largest part of our business has been in the tile and grid portion. But looking ahead -- and we're going to talk a lot more about that -- that's going to change going forward. But certainly in 2017, tile and grid was the largest portion of our business. And the repair and remodel segment represented over 75 percent of where we placed our products in North America.

In terms of the product portfolio, when you think about specialty, whether it be wall-to-wall, a cloud, open plenum, and now looking ahead with USG Ensemble®, we are very well-positioned with a broad and deep portfolio. When you think about our core tile and grid business, whether it be our USG Halcyon® Fiberglass tile offering at the high end, or our Mars® offering -- again at the high end -- supported by our Donn® suspension grid systems, or our more commoditized USG Radar® product portfolio -- again, we have a broad and deep offering for our customers.

On the right, when you look at the makeup of our business, this again highlights for you where the largest portions of our business are today currently. But I also want to show the installed pricing really dramatically changes as you go up that chain of opportunity. And I think you'll see, as we talk a little bit more about our strategy, USG is well positioned to take advantage of this opportunity.

Here's what I'd like you to think about as it relates to USG Ceilings from a competitive advantage standpoint. Again, as mentioned, we have a very broad portfolio. We also have this tremendous legacy installed base that generates just an ongoing annuity for our business. So what does that mean? It could be in a shopping mall, an office space, a hotel. When a new tenant comes in and they get tenant improvement money, most typically they'll swap out tile. They'll just flip it out -- a new two-by-two tile will go in. And that's just a portion of our business that just keeps on ringing the cash register year on year on year. It's a very significant portion of the business for us. We have proven innovation, and we have advanced specialty capabilities supporting our business. We have a demonstrated ability to bring customer preferred products to market. And we're a preferred and valued partner to architects, contractors and distributors across North America.

But here's one more piece I'd really like you to think about. We're part of USG, as USG Ceilings. That is a unique part of our value proposition ultimately to our customers. So when our very large and broad selling organization, be it in front of architects or designers, distributors, contractors, building owners -- when they open up the USG portfolio, we're a part of that. And we believe that that really places us in an advantage position in those conversations early on in the process.

So from a strategic initiative standpoint, we're going to capitalize on the change in mix. We're going to strategically invest in the fastest-growing segments within the business opportunity. And we're going to leverage innovation to disrupt and bring new opportunity to our customers. All of these things together position our customers for long-term success. And it's why they choose to partner with USG.

So the product mix piece. On the left, the good news for all of us in the room, this industry, this part of the opportunity commercially is growing through the period, 2020. But there's some things a foot. The fastest-growing segments, as shown here, are in the areas of now acoustical drywall, where we've commercialized USG Ensemble® -- very attractive CAGR rate, ten plus percent, as well as specialty metal -- six to nine percent. And with USG's acquisition of Ceilings Plus®, we're very well positioned to take advantage of that opportunity. So this richer mix is expected to drive growth and profitable margin expansion for USG.

Well, let's talk a little bit about the very large tile and grid portion of our business. It is really important. And the way I describe this slide -- and this is something that's been ongoing for some time now -- we're probably mid innings in this dynamic, this shift toward premium type products in the tile area of the business. Architects and designers want smooth, bright, white aesthetic in terms of their tile selections. Really, really important. And the good news for us is, that affords us a great margin expansion opportunity to a magnitude of four to five X at the gross margin dollar level. So USG is really well-positioned to take advantage of this opportunity.

So specialty ceilings -- why does that make sense for USG? Architects and designers, building owners, they have this great desire for inspirational and creative spaces. They want alternatives to open plenum. And again, there's this trend toward higher-end finishes. However, in order to participate in the specialty ceilings business, it requires advanced digital engineering technologies. There's a lot of investment in the technology, the back end of the business, to support all of this creativity. And it requires some more sophisticated go-to-market capabilities. And for that, there's a cost. The SG&A profile in the specialty business is different than our core tile and grid business.

But here's the kicker -- having USG with a more robust specialty offering enables us to be in the conversation with architects and designers far earlier in the decision-making process. And that enables a tremendous cross-sell and pull-through opportunity for not only USG products and systems in Ceilings, but in fact more robustly across the entire USG portfolio. Specialty ceilings is a great enabler of this cross-sell opportunity.

So what did you USG do knowing this? We went out and acquired the leading specialty ceilings manufacturer in North America. Jenny and I got together with Nancy Mercolino, who's now our General Manager of Specialty Ceilings, late last spring. And early, early days, we established that there was great fit between our two organizations. We felt that there was great promise to take all of the things that Ceilings Plus does really, really well from a product innovation standpoint in this area and leverage the power of USG to really take advantage of the CAGR growth opportunities that present themselves in the market. And, in so doing, really enable this cross-sell and pull-through opportunity for the overall Ceilings business, but also USG in totality.

So as you'll see here, aside of one-time integration costs, this acquisition will be accretive in 2018. And the integration is well under way. Integration efforts in the area of market-facing opportunity -- how do we collaborate with the core USG commercial ceilings effort -- what about the architectural selling effort across the two organizations, making that effort one? How do we integrate operationally to bring USG excellence in manufacturing and operations to what Ceilings Plus already does well, but make it even better? So these integration efforts are underway, and there's great promise for this coming together of these two great companies.

And here are some examples. We all travel extensively. As you look through airports, as you check into nice hotels, as you walk into new commercial space, more often than not in today's world you'll look up and there will be some form of a beautiful specialty ceiling. And it goes across major sectors: transportation, education, office space, civic space.

If you take just a second and look at this sales opportunity we have right here in this room… [laughter] Nancy, I can see a beautiful Ceilings Plus ceilings right here, in this space. But here's what I'd like you to really consider as you look at these amazing projects. Look at the USG opportunity. Because it's about the specialty ceilings, but it's also about the other ceilings products. It's about EcoSmart. It's about performance materials. And if we're at the front end of the conversation with the architect, the designer, the building owner, it really just enables this great opportunity for our company.

A little more specifically. So what does this mean? How does it manifest in terms of margin expansion opportunity? We created a, a small example based on our efforts through due diligence in our early days post acquisition. Simply put, if you look at a million-dollar specialty job, we believe, incremental to what we would have had before, it creates $200 to $300,000 dollars of ceiling tile and grid opportunity -- incremental. We also believe in the areas of USG Ensemble®. We're early days with Ensemble®. But we believe the potential exists for pull-through on USG Ensemble®, enabled by specialty ceilings. And as I mentioned, other USG products. But for today's purposes, think of it, a million-dollar specialty ceilings job, $200,000-$300,000 dollars of incremental tile and grid, $1.3 million-dollar opportunity.

USG Ensemble® -- and Jenny mentioned this earlier -- the long sought-after solution for what architects and designers have been asking us for -- acoustical drywall. We innovated; we leveraged our expertise in the areas of wallboard, surfaces, suspension, acoustics. We wrapped that around appropriately with IP. And we have now commercialized USG Ensemble®. It provides the smooth, monolithic look of wallboard with the acoustical performance of traditional ceiling tile, with great design flexibility. This space that we were all out, in earlier today, having a coffee, meeting one another -- perfect opportunity for USG Ensemble®. As more and more people crowd into that area, all of those hard surfaces bouncing noise around, in future state, if that was USG Ensemble®, that noise would simply be absorbed into the acoustical panel. It would be a much more pleasant, comfortable environment. Opportunity. I'm going to now play a video, give you a little more context on USG Ensemble®.

[USG Ensemble® Video]

Chris Macey
SVP & President, Ceilings

Very importantly, on the left-hand side of the screen -- we are going to deliver in the period 370 BPS of margin expansion. It's going to happen because of everything that I presented previously. We've got a great core tile and grid business. There's a continuing opportunity from an annuity standpoint. And there's this demand for more premium tiles. We're very well positioned there. With the acquisition of Ceilings Plus, it enables a very early stage conversation to not only secure specialty ceilings opportunity but pull through core tile and grid as well as USG opportunity. We're investing in the fastest-growing segments. We are very well positioned. There's a shift toward premium solutions, and it is expected to continue. Even with cost inflation across our business, we expect to offset cost inflation with price improvement. Jenny has mentioned it. I know Matt's going to speak to it. That is an expectation that we have within the business. I've mentioned at length these pull-through cross-sell opportunities. Very real opportunity. Trust me when I tell you, our selling organization is all over it.

We're going to accelerate the adoption of USG Ensemble® to displace more traditional acoustical plasters and drywall ceilings. And the ceilings business is absolutely in the middle of our advanced manufacturing program and fully participating and expects to drive out cost leveraging the full potential of that initiative. There's going to be a continued shift toward premium. I've said it several times. It is going to continue. And it presents an opportunity for profitable growth. The investment in Ceilings Plus allows us to win in the marketplace and our customers to win in the marketplace. With USG Ensemble®, we've met the long sought-after need architects and designers have for acoustical drywall. And we are well positioned now to take advantage of that opportunity. And so we're investing to deliver superior performance and continue profitable growth of this great business. So thank you. I'd now like to call up Ryan Flanagan who's going to manage our first Q&A session. Thank you.

Question & Answer

John Lovallo
BofA Merrill Lynch, Research Division

Thanks for taking my questions. First one is for John -- the prefabricated wall panels; very interesting. I mean, do you see a residential application for this as home builders are getting, trying to get more efficient?

Jennifer Scanlon
President & Chief Executive Officer

I'm going to let John talk about the long-term focus on this. But I will say one of the things I'm emphasizing with each of these teams is to focus on the elements that we've laid out. And so their initial focus is on the commercial side. But I do know you've done some research on that.

John Reale
SVP & President, Performance Materials

Yeah. I mean, no doubt. This is more of a commercial play. And in residential, you're typically going to see OSB, plywood. So this isn't a residential play for us. But I will say -- and you don't say it often with our business -- that, you know, it's sort of an elegant solution for commercial. Because it's simple; it takes away the variables of the job site. So it's a great commercial play, and that's where our focus is going to be.

John Lovallo
BofA Merrill Lynch, Research Division

Okay. Then maybe just one more for Jenny. You talked about some of the investments that the company is making. If you were to kind of break it down into people, process or product, I mean, how would you kind of bucket where the investment is going?

Jennifer Scanlon
President & Chief Executive Officer

Well, one of the things that we want to make clear, is on the product side we've already made those investments. So we've made the investment in all of these products out here in the research and in the early stage production. And in fact, ExoAir is coming off of a pilot and fully productionalized, as John commented. The structural panels were sold out last year and a fully commercialized plant is coming on line right now with additional plants. So we've already built those investments. Either we've completed them or they're built into the capital plan.

On the SG&A side you can, you can really bucket it into a couple of groups. It's the technical selling team required for all three of these gentlemen to get those products in front of audiences who are going to pull them through. And then there's supporting data and technology. Greg mentioned investing in the customer experience, you know, around the ability to search and Revit and BIM and CAD and other things that help draw contractors and architects to understanding the features and functions and benefits. And then also in pricing optimization and data optimization. So that's really the categories of, of where we're spending our money.

Mike Dahl
Barclays PLC, Research Division

This question is also for John, but maybe Jenny or Matt, you want to chime in as well. One of the striking things with the performance materials to me is, you look at what you have the potential to deliver in terms of performance and efficiency to the job site. But the margin profile's 6.4 percent today, even if we look at 2020, only getting to ten percent. Can you help us understand just either the competitive dynamics or other structural limitations that are leading to that margin still remaining what would be fairly low compared to your other segments?

Jennifer Scanlon
President & Chief Executive Officer

I'm going to start with just our philosophy on this. When you look at -- John had a slide in there that goes back to 2009. And one of the things that you can note in that is that 2016, there was really an inflection point. We were hitting a point of diminishing returns. And some of those diminishing returns were because they were niche products. And for us to invest into a much broader both coverage and margin profile, we had to invest up front. So we've taken a margin hit in 2017. But the expectations are important here. When you look at the whole world of building products, the ones that deliver high value, you know, are -- to contractors -- have a, you know, a, a strong margin profile. We're fortunate that drywall and ceilings tend to have two of the best margin profiles in the world of building materials. John's products, 2020 I believe is only the beginning. And even when you look at the revenue expectations and the penetration, his team clearly understands that that is only the beginning. And he can talk a little more about where that's headed.

John Reale
SVP & President, Performance Materials

Absolutely. 2020 is not the end of the story. I mean, we're in early days. We're penetrating markets. There's new methods of construction. So there's a lot of up front work that we need to do from an awareness and from an education standpoint. But -- and Jenny mentioned, you know, the run rate is -- we're going to get there. And we're, we're in early days. And so we feel good about that, but feel good about what's in front, what's past that time frame.

Garik Shmois
Longbow Research LLC

Just a follow-up on performance materials. I think if you take the midpoint of your revenue guidance by category -- it's about $180 million dollars of incremental revenue growth -- to get to ten percent margins -- my math is somewhere in the 16 to 17 percent incremental margins -- that are needed to get to the margin targets. So just, if you could provide a little bit of perspective backward-looking at the historic incremental margins within performance materials, understanding there's been some investments. 2016 was a transition period. And just curious as maybe, as the business gets humming, what the right incremental could be over the medium to long term?

Jennifer Scanlon
President & Chief Executive Officer

Yeah, we'll let Matt go into the detailed numbers on that. But I think one thing to point out is, again, in many of these categories, we've been running pilot plants or pilot processes. And, so John, why don't you talk about just the evolution there and then Matt can talk about incremental margins.

John Reale
SVP & President, Performance Materials

Yeah, we obviously have three levers, right. We have the scale lever; we have, we know we're going to get the value out of the innovation that we're bringing to the marketplace. And from a cost side, like Jenny alluded to, we were early days with the concepts, pilot plants. We've already made the investment. And if we're going to see the cost lever right away, and we're going to see scale right away, and we have a price strategy in place, that gets us penetration up front but gets us the value of those innovations during this time frame.

Matt Hilzinger
EVP & Chief Financial Officer

Yeah, John, from a, from an incremental standpoint, you know, we typically -- I would say about 40 percent is about fixed in that business. Which is pretty close to where kind of wallboard is. So that's how I would think about that.

Jerry Revich
Goldman Sachs, Research Division

Good morning. Can you folks talk about the potential for bolt-on acquisitions like this one that you folks executed on in ceilings? What the prospect list looks like and the broader opportunity set as you see it across the businesses?

Jennifer Scanlon
President & Chief Executive Officer

Now, we've got a core team internally of -- headed up by our Head of Corporate Strategy, our Treasurer, part of our Legal Team. And we meet frequently, monthly, to look at what do we see is out there. We say no to a lot of things. You have to. And we've got to be very deliberate about what actually adds real value to USG. There's lots of companies that would love to be part of USG. There's not as many that fit in. So I think when you look at certainly Greg's business that there's opportunities to help, you know, roll up the industry, we would love to participate. When you look at John's businesses there are a lot of smaller companies out there that could potentially be additive to his portfolio that support the strategy and the categories that he talked about. And I think Chris' team has a lot of great things on their plate and tremendous opportunity for upside.

Jerry Revich
Goldman Sachs, Research Division

Thank you. And then separately in wallboard industry you've got, on the east side of the U.S., the synthetic gypsum reliance. Can you just talk about, out of the footprint, in which parts of the network do you see the greatest risk of synthetic gypsum cost pressure? And how optimistic are you on the ability of the industry to have meaningfully different pricing in parts of the footprint where everyone's facing the synthetic gypsum versus the rest of the U.S.?

Jennifer Scanlon
President & Chief Executive Officer

I'm going to let Greg talk about both of those.

Greg Salah
SVP & President, Gypsum

SynGyp is primarily east of the Mississippi. For us, we have a balance of SynGyp -- synthetic gypsum and natural rock. And anything west of the Mississippi is natural rock. Keep in mind, there's plenty of SynGyp today. It's just that we're going farther distances to bring into our plants. We have, we have more freight. But from our view, as our raw material cost goes up, we have to pass that on. I think synthetic gypsum and the availability is going to be there, the cost is going to be higher. We're just going to have to capture that in our price. We don't see any real issues in the near term in terms of availability. And that's kind of how we look at it.

Scott Schrier
Citibank, Research Division

I wanted to follow up on the performance materials questions. Basically on the operating leverage. Do you see materially different operating leverage across the different products within the performance materials? And then a follow-up that -- it was interesting what you were saying about the structural panels. And when I look at the incremental revenue relative to the addressable market, maybe it seems a little lower than the others. And I'm just curious -- it seems with what we're seeing in ready mix concrete with labor increases or drivers, and it being a lot more cost effective to perhaps use that strategy, what's inhibiting you from getting more penetration within that product? Is it the competitive market, or is there something else to slow it down? Or are you just being conservative with your estimates?

Jennifer Scanlon
President & Chief Executive Officer

I think -- let me take the first part of that question back on the, the distinction between the products. When you look at all of John's categories -- and he did a nice job of explaining which ones are, you know, require kind of distinct manufacturing facilities like the structural panels, versus the ExoAir which just extends off of our glass mat sheathing -- so I would say the leverage profile's pretty similar, you know, as Matt described. But -- and we've got the capabilities either in place or about to be put in place on all of those. On penetration rates, I push John's team every day. So I'm going to let him answer that.

John Reale
SVP & President, Performance Materials

And I would say, you know, if you look at the addressable market -- I would say when you're looking at poured concrete, that's a huge addressable market. But what we try to do is be conservative in that addressable market. Obviously, you take out manufacturing, you take out parking lots; you take out… You know, our sweet spot is anywhere from that three to twelve-story type of low to mid-rise and roof decks. And I guess I would say, early days, conservative, we're getting great response as we get out there and make people aware of this. And so, I guess conservative label isn't unfair.

Phillip Ng
Jefferies LLC, Research Division

Hey, guys. Architectural specialty seems like a nice growth market for you. I believe right now it's about four percent of your mix. Is their an internal target over the next three to five years what you want to achieve? And getting there, you know, is that largely driven by internal investments, or M&A? Thanks.

Jennifer Scanlon
President & Chief Executive Officer

Yeah, one thing -- I'll let Chris answer the exact target, but one of the things that was very appealing to us when we were looking at Ceilings Plus, and in discussions with them, is the fact that they've got a nice footprint in L.A. But we also have a long history in understanding how to bend metal in our four grid plants across North America. And so we do already have capacity for upside growth in those types of products across the United States. So given that, I'll let Chris talk about actual growth targets.

Chris Macey
SVP & President, Ceilings

The way I would think about specialty ceilings and what, what specialty ceilings enables as part of the overall ceilings business, is as part of the growth strategy in totality obviously. We presented CAGR rates in specialty of six to nine percent. You accurately pointed out that our existing specialty business, about four percent in 2017… So certainly I would think about that six to nine percent range as, as being appropriate when you think about our business. And, as Jenny said, bringing this all together, integrating it appropriately, front end, back end of the business, taking advantage of that growth opportunity -- that's how I would think about it.

Bill Madsen
Senior Director, Investor Relations

Okay. With that, we're going to conclude the first of our Q&A sessions. So it is about 10:50 Eastern Time. We're going to take a ten-minute break. We'll go ahead and get started at 11:00 o'clock Eastern.

Presentation

Joe Holmes
SVP, Manufacturing, Technology & Global Operations

Where's Bill? (laughing) Good morning. Glad to see everybody showed back up after the break to hear about this joint venture. My name is Joe Holmes and next week I'll celebrate my 34th anniversary with USG so I'm very pleased to be with you here today. I've worked in nearly every manufacturing and technical role within USG, both in the field and in senior levels, but beyond manufacturing I've worked as a general manager and a VP in USG's distribution business, as an international general manager establishing a quarry and a wallboard business in the Middle East, and then most recently I was chief operating officer of USG Boral. So I'm very excited to talk to you about this wonderful joint venture today. I repatriated late last year to work for Jenny. She mentioned also I managed our manufacturing and technical organization within USG. But I'm pleased to share with you this exciting business that exists outside of North America.

USG and USG Boral really share a unique relationship and I hope to give you a sense of the excitement that I have lived and experienced the last 4 years since the inception of this joint venture. There's a lot to talk about, but I'll focus on these key messages for the next few minutes. First and foremost, USG Boral is a proven success. As somebody mentioned I believe, it celebrated its fourth year last week. It is a proven success. It is growing. It is self funding. It has got a terrific cash position and practically no debt, so it's just something that can allay any fears that are associated with a joint venture.

Secondly, it's got a leadership position in all of its markets. USG Boral is a leader. This leadership, which is enhanced by USG products and innovation, has enabled it to grow both the top and the bottom line. Also, being a market leader positions USG Boral for future growth. You know you've heard a lot from my colleagues today – Greg, John and Chris – about new innovation at USG. All of these things have significant ramifications for USG Boral.

This is a snapshot of USG Boral. As I've mentioned we're 4 years old. It's a 50/50 joint venture based in Singapore. Now, 50% ownership of a joint venture is a good thing only if you have a good partner. Well, let me assure you we have a great partner with Boral Limited. For those of you not familiar, Boral is a multi-national company based in Sydney, Australia. They manufacture building and construction materials, and they understand the construction space. They understand our space. And there's complete alignment on strategic initiatives and investments for growth. The USG Boral board is very active in setting the strategy for USG Boral. There are 4 members from USG and 4 members from

Boral on the USG Boral board, including the CEOs and CFOs of both companies. So it's a very well governed company.

So Boral had this wonderful network of plants, manufacturing facilities, spread across Australia and Asia, but they lacked technology and innovation. So enter USG and you have this perfect marriage of geographic location and USG knowhow. And that's what we're here to discuss today.

You can see the revenue, how the $1.2 billion is split amongst the different products. We're 60% wallboard and our goal now is to make that number lower, not by diminishing any effort on wallboard but by growing the other categories – ceilings, surfaces, performance materials. It's a very logical focused portfolio, just as you saw in Jenny's presentation.

This is the footprint of USG Boral that I've referenced, and it covers a big part of the world. USG is truly international now. And we cover markets and all phases of material. Emerging markets, those with limited adoption of dry wall construction practices like Cambodia, places like that. Developing markets, such as Thailand, who have adopted dry wall construction practices to a greater degree. And also South Korea and Australia. Very sophisticated markets, not too dissimilar from what you would see here in North America.

You can also see that there's an expansive network infrastructure of gypsum mines, quarries and manufacturing facilities that produce wallboard ceilings, joint compounds, metal studs, metal components. Quite an enterprise.

One point I want to make is that this is truly a strategic fit for USG. This joint venture does nothing that USG doesn't do, and it's in a special position because it can leverage USG products, USG innovation and adapt it to the diverse markets in which we operate. We manufacture and/or sell products from all three of USG's businesses.

These next 2 slides are content-rich. I'm trying to make a point so please bear with me. But this is some additional information on the wallboard markets in our part of the world. First and foremost, this is a huge market. It's bigger than the U.S. market, and that is the largest market in the world. You can see our share position across our network. We enjoy a number 1 and number 2 position in most markets, and where we don't have that position, we have a higher share of the high-end work – commercial applications, typically higher margin that require technical assemblies, fire rated assemblies and things of that nature. You can see regions like China and the Middle East, we only participate in that high end work. There is so much state-owned capacity at the very low end of the quality spectrum that's just not USG or USG Boral, and so we don't participate in that end of the market.

There's going to be a lot of growth in this market. There's new markets to be explored. We have the lowest cost facilities in the world, in Thailand, that we seed new markets and when the time is right we will add manufacturing capabilities. We have a lot of room to grow with our adjacent products.

But the most important area that we are seeing right now is really above and beyond organic growth – the adoption of dry wall construction practices. For those of you who have not worked in that part of the world, 80% of the wallboard sold goes on the ceiling. It's not like your house where all your walls and your ceiling are made of wallboard. Eighty percent goes on the ceiling. Just imagine the opportunity as this evolution from wet wall construction, which is brick and mortar and concrete walls, to dry wall construction – just imagine the opportunity that exists in that part of the world.

One other point I want to make before I leave this slide is that these markets vary. History shows that even prior to the JV that there were ups and downs. Right? One year Thailand is up, South Korea is down. The next year it varies. There's a general balance in market activity, and we see that. What's important for USG is USG Boral continues to grow. We fully expect it to moderate the impacts of the cyclicality that occurs in U.S. construction markets.

Okay. So what is the outlook for our industry in USG Boral? I was asking Ken Banas about metrics or whatever, and he assured me that you would never model wallboard penetration. But I want to show you these numbers here. This is a metric we use for capacity planning purposes. This is the amount of wallboard that square meters use per capita in our region. And this has been tracked for several years. And you can see we have markets – low penetration markets, medium penetration markets and I've shown the U.S. and Canada just to kind of give you a perspective on how products are used in these various countries.

But what does this tell us? All of these markets are growing. All of these markets are growing. You heard it from John, you know, the construction techniques are changing. And that's what the most exciting part is. They'll grow organically but this evolution from wet construction to dry construction is occurring and we're leading the way and trying to accelerate those efforts.

There's three big drivers for this change in construction practices that is occurring. The first is the influence of multinational corporations. If you can just imagine an SAP or an Oracle office being built in India, or a Hilton or a Marriott being built in Jakarta, they're going to be built differently than they would normally be built. They'll have design associated with it regarding aesthetics, acoustics, fire safety, things of that nature. And what provides those attributes? Dry wall partition systems. And so it's just very exciting to see this and USG Boral is trying to accelerate these efforts.

A second driver of this conversion of wet wall to dry wall construction is quality. You know, as markets increase in sophistication, quality becomes more important. Concrete, brick and mortar walls crack, they're difficult to repair. Once again, the solution is dry wall.

And then the third is just cost efficiency. John referenced it here in the U.S. The U.S. is still trying to make job sites more efficient. Same is true in that part of the world. It's just they're behind us, and trying to catch up, but lighter weight structures are less costly, they're easier to build, they're faster and there's just many benefits associated with that.

So, all these things are good for our industry. And all these things will change the bars on this graph. And I'm not telling you that India will be at US penetration rates any time soon. But India will double, and it will triple, and that will provide rich opportunity for our industry, not only in wallboard but all the adjacent products associated with wallboard.

Here's a slide on our, on kind of our track record, our financial performance. And I won't go through all these numbers. You know, you have them in your deck. But one thing, one point I want to make is that these financial results were attained without sacrificing the future. Yes, it's true, we went into this joint venture and we took out a lot of cost. But we also spent aggressively on implementing technology, USG technology. We purchased gypsum reserves. We implemented salesforce.com and created a university for training our sales force. We improved non-performing facilities. We added incremental capacity in every market and are working on green field capacity in some of the fastest growing markets. So it's really a steady growth trajectory without sacrifice – it's built on a good foundation and will serve us well into the future.

We deal with a lot of good competitors, multinational competitors as well as strong regional competitors. I view that as healthy. It really keeps us on our toes. I doubt you've had any company tell you that they're not competitively advantaged, so let me just give you a few examples that illustrate our strength in that area. And the first example I'll give you is in the operational excellence area.

The first thing we did when we went over there is centralize our supply chain. Whereas before we had 14 businesses operating their own supply chains, negotiating with the suppliers that supplied the same materials to all 14 countries. We were able to consolidate that, leverage our volume and significantly lower our variable cost. It was a big win for us. And along the way we created some strategic partners in very important areas of supply.

Secondly, Jenny mentioned this, we have the best R&D in the world located outside of Chicago in Libertyville. We created an Asian R&D facility to help us more quickly and efficiently leverage the products and the innovation in cost reduction that comes out of Libertyville and adapt it to the markets in which we serve.

And then last – and this is probably the most important, there was a question earlier about this – is gypsum security. We have the best position with respect to natural gypsum rock reserves in our part of the world. Gypsum security is very important to have. Depending on third party suppliers for your most important raw material is not a good position to be in, and we own substantial reserves in Australia, the Middle East and Southeast Asia.

So just briefly here, I want to just kind of go over USG Boral strategy. It's not rocket science. It's very simple. One is we have to accelerate this wallboard adoption that we've been talking about. Secondly, we have to sell more non-wallboard products. And third we have to continuously improve as a manufacturer.

On accelerating wallboard penetration, this conversion from wet walls to dry walls, we've got two initiatives, really. One is called Easy Finish. And this is an initiative really that makes you think of the phrase: if you can't beat them join them. This is when you cannot convert the wall from a wet wall to a dry wall, the next best thing is cover it up with USG Boral joint compound, bonding compound and Sheetrock®. It provides an attractive, crack-free surface that is actually applied more quickly than a cement render, and it's an interim step in this wholesale conversion from wet walls to dry walls. And we're starting to see some good traction in this area.

But the more exciting initiative is using good, sound building science, good data, to demonstrate to influencers – architects, owners and developers – the advantages, the significant advantages of light weight structures. They go up faster, they go up quicker and they save a lot of money. And so what we did is we worked with the renowned engineering firm, Jacobs Engineering, in all of our major markets to do a detailed, pretty exhaustive study of a typical 30-story hotel and 30-story residential complex, designed to illustrate these advantages of light weight construction. And the results are compelling. It's a very long report, but look at the time you save, you look at the money you save, you look at the additional usable space with the same footprint, the time value of money – it's a really compelling argument. And I would submit that this is what's leaders do. You know, we will certainly enjoy the organic growth in the region, but we try to create part of our future by training our sales force to be in front of these influencers, leading the way on accelerating wallboard adoption. When you have those discussions, you're not only talking about wallboard, it's all the adjacent products and also products that deal with the exterior envelope of that building.

The second leg of our strategy is really to sell more non-wallboard products. And you can read all the bullet points there. I will not discuss each one of those. But basically what we did about a year ago is we created a category organization, not on the same scale that Jenny did with USG, but we have leaders in each of these categories, and they wake up thinking about their particular category. They're central. They set the strategy for the category which is then executed by the category leaders within each country. And we're starting to see really good traction here. And we expect profitable growth in each category going forward.

And then lastly, the one that I probably worry the least about but still very, very important is we have to continuously improve as a manufacturer, as an operational organization. I told you a little bit about our supply chain group and the strategic sourcing. We have more opportunity in freight and logistics management centralized, and also production planning to reduce our costs and improve service to our customers. Our manufacturing base is solid. USG is operationally excellent. So is USG Boral. We have a solid Lean foundation and we're enhancing that with Lean Six Sigma going forward. Obviously, we have projects going on in every country. At any given point in time we have at least 100 manufacturing excellence projects ongoing that either are designed to improve efficiency or reduce our costs. So this simple three-prong strategy is one that we will follow for the next several years and will serve us well. The task will change but the strategy will remain the same.

That's pretty much it for USG Boral. I just want to say that it is a proven success. It's four years old. It's investing in a future, and I think that future will benefit USG for several years to come. So with that, I'll turn it over to my colleague, Ken Banas, to talk about advanced manufacturing.

Ken Banas
VP, Advanced Manufacturing & Corporate Excellence

Thanks Joe. It's great to be up herd today answer see so many familiar faces in the room. As many of you know, prior to taking responsibility for advanced manufacturing last summer, I was the corporate treasurer and before that the head of IR. And you may be wondering, how does the treasurer end up in charge of advanced manufacturing. I had a couple theories put in front of me on the break. The first was: after we fix the balance sheet, the job got so boring I fell asleep at my desk and Matt Hilzinger kicked me out of finance. That wasn't it. The second was that it was so complicated they had to take one of the biggest nerds in the company and put him in front of it, and as an astro-physicist I definitely fit that mold. That's not it either. While complex, there are a lot of great operational folks who are implementing this and know what they're doing.

Actually it's why I was hired to USG 14 years ago, after I transitioned from my graduate work, I went to work at Arthur Anderson in their strategic consulting practice. And much like Jenny's story, USG was a client for about a year before joining them. And so advanced manufacturing is actually the third large enterprise-wide project that I'll have responsibility for rolling out across the company.

I want to communicate three key messages today on advanced manufacturing. The first, I want to confirm the financial guidance that we've given about advanced manufacturing in the past. I want to give you some visibility to the projects. We've got some examples that we'll discuss so you can really touch and feel what we're doing to drive this value. And finally I hope to get you excited about the opportunity beyond just what we've committed to as part of this program when we really think about the foundation that we're going to be able to build on after the conclusion of the program.

Advanced manufacturing is building on the strong operational framework that's been in place a USG for 115 years. If you did not have an organization that had the commitment to safety, the Lean Six Sigma principles, the employee engagement philosophy in place, you would not be able to achieve the kind of return that we have here as part of this program. Three hundred/one hundred. Those are tattooed on the inside of my eyelids so I see them every night before I go to sleep and every morning when I wake up. Three hundred million dollars worth of spend over four years to drive a hundred million dollars in incremental EBITDA at the conclusion of the program. And that's about $80 million in EBIT.

The projects are focused on three dimensions. We have capital to improve efficiency. We're implementing breakthrough technology and we're advancing our workforce. And I'll talk about the different attributes of those three dimensions as well as example projects of each. And finally, again, not only will we achieve that $100 million over the course of the four years, we will have a foundation in place to create even more value in the future. And so I want to show you some of the projects that fit in these various categories. We have some live in some plants right now as we test them out before we replicate them across the network so you get a chance to see what some of those look like.

[Advanced Manufacturing Video]

Ken Banas
VP, Advanced Manufacturing & Corporate Excellence

So that's just a quick look at three of the projects that we're implementing and those are live in our facilities. You saw the plant managers talking about those. We completed those projects in 2017 and are replicating them across the plant network today.

I want to talk a little bit about the methodology that we're utilizing for this program Hopefully it gives you some sense of the risk profile of the program and what I believe to be a lower risk program. It's not three big $100 million bets. It's a series of projects. The chart on the right shows you, for projects that are going to complete in 2018, 75%, that's about ¾ of the projects, are less than a million dollars in spend. We have a very rigorous stage gate methodology. We spec out the project at the beginning of the effort. We implement it at a pilot plant. We go in and we take a look to make sure as the project's being implemented that it's achieving the level of benefits that we've laid out. We take a look at every project and examine it for replication opportunities across the network. And then when it's complete, we go in and audit the benefits. We have a dedicated team of about 30 people, former plant managers, engineers, process experts, that are working with the entire manufacturing organization to implement this. This program will touch all 5,000 of our manufacturing workers, hourly and salary.

I talked about the three dimensions of advanced manufacturing. The first, capital through improved efficiency. We now have the capital to take a series of really good ideas and best technologies that had been in place in one or two of our facilities already and replicate those across the entire network. And what's interesting about that, and one of the things that I think makes advanced manufacturing a unique opportunity for USG relative to our competition, is that economy of scale that comes with having the largest network in the industry. Greg talked about that network. It shouldn't come as a surprise that the first time you implement a project it costs more money that the fifth or the tenth or the fifteenth. And so when we implement a project, the return on that first implementation gets higher as you roll it out across the network. So if you think about buying software and putting it in place at one plant and then getting to leverage that software investment across the entire network, working through the bugs of getting the continuous miner to work or the automated guided vehicles to work, getting those systems integrated into your process control network – once you do that on the first project and you can scale it you get an even greater return. And so the fact that we have the largest network really creates a unique opportunity. That's one of the reasons why you see that $300 million investment scaling to $100 million in benefits for USG.

Breakthrough technology. This is the new-to-the-world, or new-to-USG technology. The 3 projects that we saw in the video were all in that breakthrough technology category. You know, and again, here's something where if you didn't have that foundational expertise, if you didn't have the best gypsum board makers in the world, you wouldn't be able to scale this technology, bring these ideas because this is not easy. It requires that expertise and we've got that at USG.

And finally what I think is the most exciting of the three dimensions, it's advancing the workforce. Here is putting in the management system and providing the data that Jenny had talked about earlier that will not only allow us to hit those metrics that we talked about over the 4 years, but as a foundation that will drive even more value going forward.

So let’s just talk about a couple projects in each category. I’ll just highlight a couple here. Material handling improvements. Implementing optical sensor technology and laser technology to better control how product moves across the line lowers your waste, it improves your speed, it can unlock excess capacity with a very minimal capital investment. It allows you to better control how much product you make in a certain period to allow you to better respond to customer needs. It allows you to help address an expanding SKU portfolio as we continue to innovate and launch new products. And so we look at metrics like recovery, waste, line speed, output per man hour to track the benefits that were coming through when we implement that technology across our board lines.

Automated tarping. You know, this is not rocket science. You're taking, instead of people climbing all over trucks and throwing straps and tarps over trucks, you have an automated way to put that on, to protect the product from the door of the plant to the customer. It reduces manpower, improves safety and ensures a consistent quality of the product from when it leaves our facility to when it gets to our customer.

Breakthrough technology. You saw the three projects in the video. These are step change opportunities in our facilities. You look at some of the numbers on this slide, that continuous miner cuts down the number of people per shift by 50%. It cuts down on the amount of equipment we need, the physical pieces of equipment, by 50%. I don’t’ know if you can tell in the video, but everybody was squatting in that video. That’s because the seam of gypsum in Hagersville is 42” high. And so when you're a miner at Hagersville, you start your day by going over a hundred feet underground and spending 30 minutes on a little train going 2 to 3 miles out underground to the face of the rock where you work the remainder of your 12 hour shift, not standing up more than 42”. Now, we’ve got a lunchroom and a machine shop and so you can stretch your legs. But that is a job that is not something that every sixth grader is sitting in their classroom now thinking that’s what they want to do when they grow up. And so when we look at the opportunity to reduce our labor, these are the kind of jobs that we eliminating. And while labor is the largest component of savings across the entire network, we have the advantage of implementing these projects at a time where demand is increasing. And so I can take advantage of the natural churn we have in our labor force. We do have a long-tenured workforce. There are retirements. There’s churn on the front end as people come in and leave within first year or two. When we are adding shifts at our plants to meet that increasing demand – and you saw that demand increase across all the presentations earlier – we can redeploy that labor that’s not exiting on its own. And so implementing this program at this point in the cycle is very advantageous because you get that real savings in output per man hour without having a huge employee engagement issue. And so this is very highly supported across the network. I know we’ve had some questions in the past about that.

Specialty board handling, the same way. Fifty percent of the workforce needed it because you're not touching the board from the moment it gets put on the stack on the front end until it comes off the other end of the line in a shrink-wrapped pallet.

Advancing the workforce. This bullet, the lean management system. This is the USG implementation, of effectively the Toyota management system, the Toyota way. Many folks in the room would be familiar with that. This is putting the mechanism in place for every single one of our employees, those closest to the opportunity, those on the floor of the plant, putting the mechanism in place for them to contribute continuous improvement ideas. Whether that saves us a nickel to the largest idea that came through here was $400,000 of savings per year. This is something that brings the strategy from the C-suite down to the floor of the plant. When you see this in place, when you see what that does to employee engagement and retention, the ideas that come through the increased level of safety, this is an accelerator for value creation well beyond the four years of the program.

The next two are around data, advanced analytics and the manufacturing execution system. How do we take advantage of the new data that comes from our automation technology, the new software that’s in place to put product quality data, product formulation data, machine data, integrate it directly to the order information that’s coming from our customers so that we don’t run bad board for 2 hours that we find out fails the quality test and we have to dispose of that rather than shipping to our customers. We’ll find out much more quickly if there’s an issue. That will cut down on our waste. That will increase our throughput. That’ll allow us to better adapt to our changing customer demands.

Here’s the breakdown of the savings in 2018. Again, we’re reconfirming today that of that $100 million in run rate savings, we will put $25 million in EBITDA to the bottom line in 2018. That’s not a run rate number. That’s actually hitting the P&L. You’ve got the breakout by business unit here. There’s a little bit of a range as you’d expect for the number of projects we’re talking about here. Some are going to be a little bit ahead, some are going to be a little bit behind. I’d love to hit the high end of all these ranges. But as a product manager I clearly know that there’s going to be some issues that pop up, vendor lead time, you something that’s a little bit more complicated than we thought. So we’ve got some ranges up here. But we are still on track for that $25 million of benefit this year.

Here’s the trajectory over the course of the program. This is confirming what we’ve said in the past. You see about the same level of spend between 2018 and 2019, the real meat of the program. And you see the trajectory of savings that we will realize over the course of the program.

And I think the relative breakout between the different business units that you see in 2018 is a fair proxy for how this benefit stream is realized across the business units as we go forward. So with that, again, very excited about the trajectory of the program, excited about the opportunity that exists above and beyond the 100 million dollar investment. There's a huge amount of energy for this across the enterprise. You see how it contributes to the operating margin expansion that the business unit leaders talked about today. This is a self-help investment that is really independent of volume and price and market conditions that I think is uniquely available to USG because of our heritage, the size of our network, and the expertise we have. And so with that, I'll turn it over to our CFO Matt Hilzinger.

Matt Hilzinger
EVP & Chief Financial Officer

Thanks Ken. I'm going to move these chairs back because I get pretty excited up here so I don't want to create a safety issue. Great to see a lot of folks here. I know there's a lot of folks on the phone. For those that don't know me, I'm Matt Hilzinger, CFO. I've been at USG for almost six years. It'll be six years in April. Prior to that I was with Exelon Corporation in Chicago. I was the CFO there. I was there for 10 years. For those that don't know, Exelon is one of the largest electric generation utility holding companies in the United States.

So, I got to tell you, I'm going to say I'm excited to be here about 12 times today, and in the six years I couldn't find a better time to be at USG. And, you know, we spend a lot of time-and you heard from a lot of the executive committee members today. We spent a lot of time talking about strategy. Talking about the business, talking about financial practices. Talking about the long term. And it's so nice to be able to share that with the investment community now because we do spend a lot of time in 90-day increments trying to explain a business that's cyclical. And you can see the excitement that we have and the prospects that we see for this business over the next three years and beyond.

And so, we're at a real inflection point. If that didn't come through, I hope my presentation can at least reinforce that. Right? We've transitioned the company and put it into a pure play manufacturing company, right? We've fortified the balance sheet and we're now reinvesting back into the business. So, you know, we couldn't be at a better spot at a better time than we are right now. And it's all, you know, as Jenny said, with a very supportive macro backdrop right? And we're reinvesting back in the business. We're seeing margin growth come from pricing actions, from cost actions, from growth actions, so it's a multitude of things that are driving the margin. And as I said we're operating with a fortified balance sheet now. I mean it's an awesome balance sheet. And then, you know, I get to, you know, talk to you about the margin slide, but I also get to give you some free cash flow numbers right? We're going to more than double free cash flow in the next three years at this company, which is awesome.

So let me just step back and give you a little bit of a historical perspective right? You know, take a look at revenue. We've grown revenue substantially over the last four years. Adjusted operating profit. We've moved up. You'll see in 17, obviously we got hit with a little bit of inflation. Adjusted earnings per share we moved up, and in part because we've reduced the interest expense in our share buyback program that we introduced in 2017. And then return on invested capital. We don't spend a lot of time talking about return on invested capital externally. We spend a lot of time talking about it internally. We thought it was best just began to share at least our consolidated return on invested capital with you folks, and we expect this to grow obviously over the next three years.

So we've taken some really deliberate steps over the last, you know, call it three, four years, to really transform the business. And first is, we've transformed the portfolio of companies. And Jenny talked about this earlier in her presentation. And we have basically redeployed that capital into higher earning businesses. Secondly, we spent a lot of time and effort reducing costs. We're going to continue, you just heard Ken talk about advanced manufacturing, and we've essentially strengthened the balance sheet to a point that we're very comfortable with that works in all points of the cycle.

So let me just get into a little bit of detail of each of these. Transform the portfolio: go back to 2013, we actually exited Europe, this was under Jenny's leadership. This was her idea. She pushed it, even though Europe was profitable, we felt that that was not a place that we wanted to put capital at that point, and we actually redeployed that capital into our USG Boral JV in 2014. Most everybody here knows that in 2016 we exited our distribution business. It worked for a number of years, but finally I think, we determined that the best way to drive shareholder value was to get back to being a pureplay manufacturing company. And then we started down the road of at least looking at some acquisitions, and we spent some time talking about Ceilings Plus which had been an awesome addition to the company.

So we've obviously reduced cost and improved some efficiencies. Let me start with SG&A. So, if you take a look, since 2012 we've actually reduced SG&A as a percentage of sales every year with culminating of 9.3% in 2017. As I hope you saw today, there is some reinvestment that we're doing back in the business and we could not do that at a 9% level in 2017. We needed to have a little bit more money to go make these investments, to grow this business. And so, that's why you see an SG&A target of around 10% now. Right? It's still lower than any other year other than last year going forward, so we are good stewards of capital, and we're very thoughtful about how we spend our money on the SG&A front.

Then you look at working capital, back in 2014 we put in an initiative to really focus on working capital. We focused on inventory and inventory levels by SKU. We went and renegotiated virtually every payment term that we had with suppliers and vendors. And we effectively generated almost 100 million dollars of cash that's in fact, permanent capital, right? So, it wasn't a one year, one time and we're done-you can see that we remained disciplined in our financial practices across the company.

This is a really cool chart. This is one of my favorite charts, and it shows what we've done to improve the profit efficiency of the company. So, I'm showing 2007 and 2017, housing starts of 1.355 million in 2007. 1.2 million in 2017, 11% lower in 17 than it is in 07 but take a look at the adjusted operating profit. More than double the operating profit in 2017 on 11 percent lower volume in terms of housing starts. Phenomenal right. All of the things that we've done to transform this company. All of the things we've done to redo the portfolio, to take costs out of the business has positioned us so well for the future not only just about any point in the cycle, right? So, this is a really important chart and one that I think the management team is incredibly proud of.

And of course being a CFO I can't get up here and not talk about the balance sheet. It's easier to talk about it now than it was five years ago, but you know, quite frankly we fortified the balance sheet. I mean we were very consistent in our message to I think all our investors about how important that was. We've executed on that right? We were at close to 9%-nine and a half times leverage, net leverage back in 12 and we set a target of 1.5 to 2 times based on a bunch of analytical work we've done. And we got there in 2016. So we're going to operate within that 1.5 to 2 times net debt to leverage. The other cool thing, quite frankly is we have no debt payments due until 2025. So, from a use of cash standpoint, it's kind of clear sailing for quite a while, and we've reduced our interest expense from over 200 million dollars to 60 million dollars, a phenomenal improvement just in that alone. And then one last thing here is I do not want people to forget we have a 1.1 billion dollar tax shield between NOLS and foreign tax credits that will shield our US Federal Income Tax for the next couple two, three years. No clapping on the balance sheet at all? Not yet? Okay, I'll wait till we're done and then you guys can clap for the balance sheet.

Jenny talked about you know, our capital allocation strategy. And this is-we've spent a lot of time thinking about this, putting it together. It's how we prioritize things. It's literally how we prioritize. You know, maintain a flexible balance sheet. I just got through the importance of maintaining a balance sheet with that leverage ratio that we have, and we started to reinvest back in the business. Jenny talked about the importance of earn the right to grow. We talk about earn the right to grow everyday. It's not that we just pass out dollar bills and people get to go spend them. We expect returns and we track that very, very carefully.

In 2017, we moved to returning cash back to shareholders. We were very firm in our approach on this and how we wanted to do it. But we initiated a program in February of 250 million. We did $184 in 17, we announced another 250 million dollar program this last February, and we've got about $316 million dollars expected to be bought back over the next 12 or 18 months, and we have been in the market as you can imagine with what we think is a undervalued stock price.

And then lastly our acquisitions, we’re always going to look at M&A, and as Jenny said, there are many, many things that flow in front of our desks. I know some of my banker friends are here and they’re not shy about bringing ideas to us, but we’re going to be incredibly disciplined about how we go about that.

And so, you know, one of the things that we really do think about it how is this acquisition going to help our customers and our channel? Are we the best owner of that asset? I mean that’s what we ask about when we sit and look at something. And yes, we’ve got some strategic criteria and some financial criteria that you can see up here and we’re very rigorous and disciplined about that. And there are some areas that we are looking at, right? And Jenny touched on this and I think part of it came up in the Q&A. You know we will consider participating in industry consolidation in North America. We will. We will look at adjacent products and adjacencies to you know, some of the great businesses that you heard today-Ceilings Plus is a great example of that, and then we will consider other geographic locations depending upon where we are and how we’re thinking about it. So, you know, again, I think the takeaway is M&A is clearly something that we’re going to look at as a way to drive shareholder value, but it’s going to be incredibly disciplined on how we go about that.

So let’s move a little bit into the financial side of my presentation, and lets start with kind of the 2018 outlook. So this is what we presented and what Jenny and I talked about in February when we did our fourth quarter call. There’s really no changes here. I did want to give you a little bit of update in the first, call it, 60 days of the quarter. You know I would say that we’re still encouraged on pricing. We said that, you know, at the beginning of February, I’ll reiterate that. I would say that we’re seeing inflation as we guided to. We’re seeing some inflation in the business. And we’re seeing low volumes, right? I mean we said that were really two things and it’s consistent with what we said in February. Between the weather and the pre-buy we’re seeing, you know, relatively low volumes in the first quarter.

And one of the things that I want people to understand about is we think about 2018-you said this-2018 we’re going to sell more product in 2018 than we did in 2017. But as we thought about the first few months of this year, we did not reduce our staffing. So our staffing levels have been fairly consistent with what they were in the fourth quarter just because it’s disruptive to try and pull staffing down and then pull it back up as you think about the second, third, and fourth quarter. So, you know, we’ll continue on and you’ll hear more about obviously the first quarter near the end of April.

One of the things that did come up and has come up with quite a few questions after earnings call, is our investments. I hope today helped answer many of those questions, and clearly we can spend some more time in the Q&A session. But we're investing about 90 million dollars of additional capital this year in growth, and about 30 million dollars of additional SG&A. And think of the SG&A as very focused and very targeted around the customer. And it's really three areas: First there's really around, we want to do things that help our customers sell more products profitably. Hopefully you heard about some of that stuff today. The second is increasing the speed of innovation and commercialization. Jenny spent a lot amount of time talking about that. And then the third is we're putting a little money into data analytics, you know how we look at cost, how we look at pricing. And so these are all things that we think can help drive margins and improve the business, but it takes a little bit of money to make some money, and so we're very focused on this. Again, this falls in that category of right to grow. We're going to make sure that this stuff delivers or we're not going to spend.

So let's get to 2020. So I'm sure nobody's flipped to this section yet. I'm sure this is new for you guys for the first time, but you know, take a look at our outlook for 2020. Quite frankly, it's very similar to 18. You know, we give some end market data points here. We give our USG volumes kind of mid-single digit for gypsum. 15% CAGR for performance materials. Our ceilings kind of low single digit. I will say 2018, I would think of that more as an investment year, right? It's important to know that we're making some investments. I think some of the questions around performance materials kind of got to that. There are some investments that are going in this year, and we would expect to get more payback in 19 and 20 than we would in 18.

Financially, again we see inflation of 3-5%. I've talked about SG&A around 10% of net sales. Okay, we're very disciplined here, we can scale that up, we can scale it down as need be. Capital spending under 200 million dollars, you can kind of see the categories that we're spending there. And then again, income taxes, we've traditionally before the new law came in we were around, call it 32-33% effective rate. We're now between 20 and 23 with the great NOL that I had talked about earlier; so that's kind of how we're seeing the 2020, you know again the takeaway to me is end markets remain strong. We expect to sell more product in 18 than in 19 and then in 20 than we do and have in 17.

So we've talked about inflation. We've talked about-you know that we're seeing inflation. I think you're seeing and hearing more about that from not only people in our industry, but across other industries in the United States and we have a model. I'm not scared of inflation. I really am not. And we have a model to deal with inflation, and we can grow our margins in an inflationary environment. It's really simple. Two buckets: Pricing initiatives. So, we're going to look to offset inflation and beat inflation in terms of pricing on our products. We expect to get value for the products that we're selling; so you heard a lot of that from the folks earlier today around the value proposition and getting a premium. You heard a lot about mix. You know, looking at and thinking about the mix, and then pricing analytics. So, big drivers that we have on the revenue and pricing line; and then on the cost side, you heard about Ken-you heard Ken talk about advanced manufacturing and lean, but we've got other cost initiatives too. I mean the manufacturing folks come in every day and are reducing costs in a lot of other ways than just advanced manufacturing. Joe's coming back and he's going to-you know we're going to really take a harder look at the way we're doing sourcing and logistics and network optimization. I think there are some opportunities there to help drive some additional costs out in that area. So we have a model, we're very firm in our conviction that it will work.

So this is a slide that I'm sure nobody turned to at all. This is an exciting slide for us, right? I mean this is the first time we've ever given kind of forward guidance. The first time that we get to really talk about how we think about the business and the margin expansion that we're seeing. So, just take a look at wallboard, right? We're going to go to 20+, at least 20% margins. Performance materials at least 10% margins. US Ceilings, at least 23% margins, and then Joe talked about USG Boral, we should see you know kind of mid-single digit growth on the equity income line. And we give the key drivers both in terms of kind of end market and in terms of how and what those drivers are to get to the margin. It's really important that I point out that in the US Wallboard and Surfaces we did not put in a price increase for wallboard. We're going to let the world figure out what that is, right? And you know quite frankly the way I would think about it is think about 2017 average price, and anything above that will be enhancing to the margin of 20%. And given the sensitivity, which is pretty powerful, a 1% increase in price equals 50 basis points of margin expansion. So, very very powerful. In performance materials and ceilings, there we did put in some pricing assumptions. We just didn't want to do it in the gypsum business because if we did, our sense is most everybody here would figure out how to isolate price to some extent and we, just for competitive reasons, do not want to give that. So we're going to let folks figure that out. I can tell you this: It's Jenny's intent as just as everybody else's intent that we're going to get price. So I don't want anybody to take away that oh, we're not going to get price. This is just simply a modeling way for us to get some information out and let you figure out how you think the profitability of the business will look like. So, I'm really excited about this. Confident about how we're going to get there.

So, more money, more profits, more cash. Right? I mean this is pretty exciting too, right? You just kind of move over to the right hand side and you'll see, free cash flow, we're going to more than double free cash flow by 2020. And you know, that assumes you know, a kind of an average mid point of cap'ex of 160. You guys can figure out what you want to put in in that for your models, but very, very exciting about how we see the free cash flow generation of this company.

And so, kind of my key takeaways as you think about the business USG Volumes kind of in that mid-single digit area, we're going to continue with our fortified balance sheet. We expect margins to improve across every business. We're going to more than double free cash flow. We're going to return some capital back to shareholders and we're going to look at M&A. What's not to be excited about that? I mean you got to be excited about this story. And I'm incredibly excited to be here at this moment, telling you about it and being involved in the next three years of this company. It's going to be awesome. So, with that I'm going to turn it over to Jenny, and she's going to give some closing remarks and then I think we're going to do Q&A.

Jennifer Scanlon

President & Chief Executive Officer

Thanks Matt. So I think this was a great day. I hope you all also feel like it's a great day. 114 pages of our story. I saw Wallboard is the beginning of our story. It's an important part of our story, but we have a pretty comprehensive story, and I hope that that's what you all heard today.

I do want to remind you of the five elements of our investment thesis. I mean when you think about it we are a transform company. We've transformed our-the composition that we have of solely focusing on manufacturing. We've transformed the geographies, we've transformed our cyclicality profile. And we did all this in what we believe is a supportive macro economic environment for the next planning horizon. Our portfolio is logical. You can see how it fits together. Gypsum, performance materials, ceilings, USG Boral, it is logical. We share assets, we share customers, but we have different growth trajectories and different profiles, and that's why it's important to run them as divisions close to those customers.

Our strategy is focused on our customers. It's focused on extending our cost position, optimizing price, and extending margin in every single business. And slides 112 and 113 are very important slides. But more importantly are the preceding slides, those preceding hundred slides that explain why we believe in this plan and this strategy. As Matt aptly pointed out, we worked hard to get our balance sheet into a place where we can support this strategy and we're very confident in our financial capabilities to execute this strategy.

And I think you had an opportunity to enjoy our management team as much as I enjoyed this management team. We have a long history in the industry. We also have a long history together. We've all worked together, know each other well, and trust each other in our abilities to execute this plan and have superior performance at all points in the cycle. Ultimately, we're here to increase shareholder value, and we're confident that we're going to do that. So with that, I'd like to bring up the whole management team who you heard from today and we'll take some Q&A for the next 25 minutes.

Question & Answer

Michael Rehaut
JP Morgan Chase & Co, Research Division

Thanks. I guess it's now good afternoon. Thanks for the presentation and all of the targets as you said, Matt. It's a great step forward and we look forward to seeing realization over the next few years. It sounds like-obviously it's an exciting time. You know, I think-maybe I'll just hit, I mean I have several questions, I guess I get only one maybe you could circle back.

Jennifer Scanlon
President & Chief Executive Officer

(laughing) We're going to hold you to the one Mike.

Michael Rehaut
JP Morgan Chase & Co, Research Division

It's what you get when you get analysts in the room. I'd love to focus a moment on, you know, the margin story. Obviously I think it's going to be one of the more focused on elements of today. When you think about the different segments in particular that you've laid out, at least the three consolidated segments. To me it feels like you have three different elements for each, or a different element in terms of a primary driver for each segment. And correct me if I'm wrong, and I'd love to get some, if perhaps some you know, rough numbers on some of these things. When you think about wallboard for example, you know it feels a little bit more cost and perhaps volume leverage driven. When you think about performance materials, scale kind of seemed like the big driver. And then on ceilings, you have mix as well as being one of the big drivers.

Matt Hilzinger
EVP & Chief Financial Officer

Mike you want to come sit up here?

Jennifer Scanlon

President & Chief Executive Officer

I know he has very astutely summarized that.

Michael Rehaut
JP Morgan Chase & Co, Research Division

I guess I'd love to get a sense of when you think about the three different businesses, when you think about those different buckets, what are the big drivers? When you're thinking about a 400 basis point average margin improvement over the next three years, how should we think about the different buckets driving those different businesses?

Jennifer Scanlon
President & Chief Executive Officer

Yeah. I'll tell you. The place that I started thinking about it is always the customer. And, it's very, very important to realize that across those three businesses there is a similar channel but the way in which those products get pulled through the channel is different. But it's very, very important to note that that value proposition for the customers is as compelling as it is for USG when you look at it from a margin perspective. So if you're a distributor, and you've got to use your boom trucks, and its asset utilization, and it's all about what's that margin on that boom truck, and having a higher margin product in the wallboard side is useful. When you compare that to ceilings, which is much lower volumes, you know, so you can't use your boom trucks all day long on ceilings. But a margin per ceilings for a boom truck full of ceilings is about three to four times what it is a boom truck full of dry wall. You get into some of John's products and it's above five, maybe six, maybe seven. So, it helps the distributors to have these higher performing, higher margin products, and so as we drive that margin profile, we know that there are also have the capability to drive their margin profile. The trick in all of this is that we're an industry that needs a lot of encouragement to try something new and different, and that's why we have to invest in the technical sales and the marketing up front to get that right. But, I do believe that this is a flywheel, and getting these new products going with those expanded margin profiles in every single one of these divisions, has a lot of payoff. So that's the way that I think about it.

Matt Hilzinger
EVP & Chief Financial Officer

And Mike, I would just add, I mean I think the way you kind of characterized the pieces you know, makes sense. Right? That's kind of where it's coming. We haven't explicitly gone through and said, here is what pricing is, here is what, you know, but you've got some of the pieces right? You've got advanced manufacturing, giving you what we think inflations going to be. We've given you volumes. I mean I think you can kind of back in to some of it, but also, you know, part of this is it's-some of this stuff is just going to change over three years, right? You're just going to get a little bit of movement in some of this stuff, and so we did not want to go through and say we're going to give you an exact basis point number for each one of those elements, but I think you got enough that when you go through two or three your models you're going to be able to get a pretty good shape of what things look like and where the savings coming from.

Scott Rednor
Zelman & Associates

All right. Good afternoon at this point. I have a question on the wallboard side. I think you threw out two stats at nameplate capacity 70% utilization. And that's 10% below the market. I was curious, curious just given it's a regional business how much that varies across your network? Maybe you can give a sense for how much of your capacity you think is above or below that 10 points relative to your competitors across the nation and is that targeting where you're putting incremental capital back into the business?

Jennifer Scanlon
President & Chief Executive Officer

Yeah, before Greg answers that, I do want to point out one thing about the benefits of our lighter weight product and shipping radiuses from our plants, is that in wallboard, truck loads weight out before they volume out. And so having lighter weight product does change our ability to load more onto a truck. And so a product like Eco Smart for the commercial space does you know, add to the dimensionality of those decisions around shipping radiuses. But given that I'll let Greg talk about specifically the gypsum network.

Greg Salah
SVP & President, Gypsum

So in the wallboard business, it is a regional business. And then our supply chain, we are leveraging our lowest cost facilities and we will move product around. We have no facilities that are out in the market as part of that-as part of our capacity. They're running at very low levels. It's a blend, but we do run our low cost facilities first, and then secondly, our manufacturing platform is servicing a lot of national customers. And we have to have the ability to service them through all points of the cycle as well as times have really increased demand. And I think the way our network is set up today, we're in a great place to deliver on our service commitment to the customers that we have. As we progress through this slight cycle, our utilization rates will naturally come up as the industry goes up higher. Typically as your-as the industry goes to a higher utilization rates, manufacturers will tend to be at their capacity share. And we see that unfolding into the future.

Kevin Hocevar
Northcoast Research Partners, LLC

Nice presentation everybody. In the 2020 targets you have, looking at the gypsum side, looking at market growth out of the gypsum business, and I know with the sale of L&W, you eliminated that channel conflict, and I think we saw that last year your volumes grew nicely in excess of the industry, so I just wanted to get a sense for, you know you talked about how you guys are at 70% utilization, the rest of the industry is at 80, so as the industry just grows you would naturally at some point close that gap and outperform the market. So, I just wanted to get a sense for how you view the next couple years. Do you view this as kind of a conservative expectation? And because of this elimination and channel conflict you can potentially exceed the market growth? Or do you think that market growth is the right way to think about it?

Jennifer Scanlon
President & Chief Executive Officer

Yeah, I'm going to let Greg talk about the price volume equation, but I will say our philosophy is that profit is the way to think about it, and so as we look at the evolution of L&W as an independent specialty dealer, and, to your point the elimination of channel conflict and the fact that contractors want our product and now there aren't members of the channel who are opposed to buying our product, carrying our product because of that channel conflict that existed. There really is, I think, more degrees of freedom for Greg and his team to evaluate that volume price equation.

Greg Salah
SVP & President, Gypsum

We're always going to balance price and volume to maximize profitability. L&W is an important customer of ours and we're going to continue to do a lot of business with L&W, but eliminating channel conflict has allowed us to greatly expand our customer base. And so I think that's going to be foundational to how we grow our business into the future. And we want to grow our business, and improve our profitability really based on creating value. If we can grow our business based on creating value, we're going to do that, but ultimately we fall back to managing price and volume to maximize profitability.

Stephen Kim

Evercore ISI, Research Division

Matt, I think you had made a comment about staffing not changing since the end of 4Q.

Matt Hilzinger
EVP & Chief Financial Officer

Yes.

Stephen Kim
Evercore ISI, Research Division

And due to this disruptive aspect, it probably it's going to be a temporary shortfall in volume anyway. Generally speaking, it looks like your outlook and what you've done historically is kind of low 40% incremental margins in that segment. Was curious if you could give us a sense for how much higher you think the incremental/decremental margins likely to be here in the near term while you have this sort of, you know, volatility on the top line. Or, alternatively, how much labor represents of costs for the gypsum segment.

Matt Hilzinger
EVP & Chief Financial Officer

Yeah, so labor is probably around 20% for the gypsum business. It's probably you know, similar for the performance material business as well. You know from a short term standpoint, you know, I think as I said, we're really kind of bullish on 18. I mean we've given our end guidance. I mean I think we're you know, second, third, and fourth quarter. You know we'll sell more than we did in the first quarter, and so again, I just, you know, I highlight that because I want people, when you think about first quarter earnings and you see our numbers, you'll know that that was a conscious business decision that we kept labor, because it takes a long time to staff up one of these plants, right? And we've been really disciplined about how we've done that in the past, right? We want to make sure that there's almost permanent kind of volume and demand there before we'll go and put in a shift. But on the same token, it can take anywhere from six to nine months to get a shift on. So, you know, to pull that labor lever and pull all those folks out and then try and to go back that as you anticipate higher volumes just doesn't make sense. So, think about incremental margins is around 40% and labor is probably 20% of that. Or half of that.

Mike Wood
Instinet, LLC

I just wanted to get back to performance materials. Based on the sub categories that you provided that incremental growth for, I calculate it's roughly a 5% market share addition that you're going for over the next three years. And you said you did a lot of work in market dynamics. Just curious in the initial stage of you gaining market share in those areas, what has been the competitive response and what you expect over the next few years?

Jennifer Scanlon
President & Chief Executive Officer

I'll let John talk about-because every competitor is different across his products.

John Reale
SVP & President, Performance Materials

Yeah, so as we look at those growth areas and I did mention that we have relatively low penetration in those areas today. So we feel our opportunity exists as we come up with these new innovative and more efficient types of building systems. So we feel like we can gain a significant amount of share because of that. If we look at, you know obviously we have a leadership position in tilebacker panels, but as we go into the waterproofing segment, we're new to that, so we're going to be aggressively targeting other leaders in those areas. In the premium air barrier market, we're really competing against liquid applied membranes versus any other integrated product. So we're really going after that old construction methodology and trying to convert people. The same with structural right? We're going after a poured concrete installation market versus what we have to offer.

Michael Rehaut
JP Morgan Chase & Co, Research Division

Great thanks. Matt just a question for you on the Cap ex coming down from I think about 250 expected this year to about 160. How should we think about that step down? I mean is that a step function 19 to 20?

Matt Hilzinger
EVP & Chief Financial Officer

Think of it primarily around advanced manufacturing. So, you know, maintenance of business kind of stay in business capital is you know between you know, call it 60 and 70 million, growth capital between 50 and 100 million, and then the step down is really, you know, the step down in Cap ex on AM, and I think Ken, AM next year is-

Ken Banas

VP, Advanced Manufacturing & Corporate Excellence

It's very close to the 90. It's a little bit less capital next year, a little more expense, but about the same spend, and then as we mentioned it goes down about 20 million dollars of spend in 2020. Because that's really the tail end of the projects that are going live to hit that run rate. And so that's 70 million dollar difference between 18 and 20 is where most of that step down comes from. And so it is very much a sort of step function from 19 to 20 in the AM space.

Scott Schrier
Citibank, Research Division

A question on the ceilings and with the attention to steel prices and everything, and we've seen how it impacted you margins in 16, and then in 17. As you change your product mix, going to the more high-end products that the specialties types of Ceilings Plus; how does that change your sensitivity from a margin perspective to steel?

Jennifer Scanlon
President & Chief Executive Officer

Chris will answer this, but one thing I do want to point out: If you look at 2016, we got ahead pricing wise of anticipated increases, so it really was a great bump in margins. 17 normalized back to a normal level. Chris and his team are very focused with our global supply chain team on analyzing and understanding and ascertaining where they believe trends will go and ensuring that they make the right pricing decisions around that. And I'll let you talk about some of those for the future.

Chris Macey
SVP & President, Ceilings

And just a quick build on Jenny's comment in 16, it was really the perfect storm of price improvement, while at the same time, low steel costing, and so the margin enhancement in 2016 was very nice. And then in 2017 some cost inflation on the steel side, and so continuing a focus on pricing ahead of that inflation is going to continue to be very, very important. Obviously, in light of the tariff situation and how that evolves over the coming days and weeks, we're watching that keenly, but it really doesn't move us away from our strategy which is to focus on knowing we're going to have some level of inflation, how do we price appropriately relative to our value, in the demand of the marketplace. And that goes across both our core grid as well as specialty, certainly as much as it relates to Ceilings Plus.

Susan Maklari
Credit Suisse AG, Research Division

Thank you. You talked about how this is an industry that's very slow to change; and so as you kind of position your sales force and think about bringing these products to market. Can you talk about some of the ways that you are training them, preparing them perhaps for some of the resistance that does come from your key customers?

Jennifer Scanlon
President & Chief Executive Officer

Yeah, I'm going to let maybe both John and Chris highlight even events that we held in the last 10 days that really address these opportunities and the excitement that you hear from the industry to have a trusted leading manufacturer with the quality record and the safety record that we have bringing forth something new as opposed to products from perhaps other parts of the world that they can't trust as much. So, John you want to talk about the event you had last week?

John Reale
SVP & President, Performance Materials

Yeah. Just last week-and we do this around the country. We happened to do it in Chicago, and we had a very similar weather event, and we originally had 100-some people that wanted to come hear about these new products. We talked about the structural product, the ExoAir and even Chris's Ensemble, but we ended up getting close to 80 architects in there, and the interest is phenomenal. We really feel like we have a compelling solutions to old methods and people really see the value pretty quick. I don't know if you got it in that video, but there was Marquette University where we built those dormitories and they shaved months off their construction cycle, because when they put the air barrier on the outside of the building, they were able to do the interior drywall weeks ahead of schedule. So, it's really awareness and training on the value proposition, and once you get them, once you tell the story, it's pretty captivating.

Jennifer Scanlon
President & Chief Executive Officer

I got an email last week from a contractor I think in Oklahoma that had a similar experience and said, we won't revert now that we've tried it, and Chris had, what, 80 architects here last week here in New York?

Chris Macey

SVP & President, Ceilings

Yeah, actually I been in New York a lot in the recent weeks. We had a great event in New York City last week over 70 architects came for the launch of USG Ensemble in New York City, and it afforded not only myself and my leadership team, but a number of our key technical selling resources to be in front of leading architects based here in New York. We had folks that were flying in from elsewhere, but it was just a great opportunity to educate them and really help them understand a lot of what you've heard today. I would also add as we are building our team and making those SG&A purposeful SG&A investments in the team, there is just a very robust training that goes on to ensure that when those team members are out in front of architects, designers, distributors, contractors, we're very well positioned to truly sell the value proposition of the new technology.

John Reale
SVP & President, Performance Materials

Can I add one more thing that highlights this? Jenny just referred to it. We had a general contractor that used our X Aware 430 system on a hospital in Arkansas. And they, first time they used it they saved weeks off the schedule. They have no instituted a corporate policy that anytime there is an air barrier system that needs to be applied to their structures, they have to use our product. That's because it's a compelling savings and time.

Matt Hilzinger
EVP & Chief Financial Officer

And Jenny, I'm going to just bump in one thing. Maybe you can just talk a little bit about the patent structure around this too because I think from a competitive standpoint that's a really important part of what we're doing.

Jennifer Scanlon
President & Chief Executive Officer

I'm glad you brought that up actually. It cannot be understated how hard our research facility works to invent these products is how hard our legal organization works to protect our patents, our trade secrets and our ability to have a leading edge. Every single one of these new products that we've talked about. It's not just one patent or one piece of technology, it's a combination of trade secrets and patents. Some of them more than a dozen, or two dozen depending on the product. We defend that rigorously. We will not let someone else come in and takeover what is our proprietary technology and believe they get to use it on their own. We defend vigorously our trade secrets and our patents.

Scott Rednor
Zelman & Associates

This is a question on ceilings related to the relationship with L&W Chris. How has that changed, just given that it's exclusive now that they're no longer under your ownership? And how do you make sure that they're incentivized on growing that business since it's much smaller relative to their overall organization now?

Jennifer Scanlon
President & Chief Executive Officer

I commented on the value proposition for ceilings for a distributor and I think it's something that Chris sees every single day in the value of that relationship.

Chris Macey
SVP & President, Ceilings

Sure. So my overarching comment as it relates to L&W specifically is they're a great customer. They have a very broad network of branch locations as you're well aware. They do a very nice job for us in commercial ceilings and we expect that that that is going to continue and so as our overall relationship with L&W evolves over time, I expect that they will continue to be an important part of our customer mix in North America. That said, they're an important part of our mix, they're clearly not the only important part of our mix, and so we have several large, exclusive distribution relationships supporting the commercial side of our business, you know, from Canada through the United States all the way down to Mexico. We're very well positioned with L&W, outside of L&W to support the commercial part of our business.

Michael Rehaut
JP Morgan Chase & Co, Research Division

Thanks for squeezing me in. So just going back to you know discussion around the SG&A and the 10% long term target. You know it seemed like looking at the incremental SG&A spend slide there a lot of areas investment that highlighted it. It seemed to be more like in terms of one term cost, you know when you think about you know an investment and the customer experience platform, maybe hiring some additional sales personnel. I mean those two buckets in and of themselves are about half of that spend, so you know off of that, it would seem like there could be some leverage to return in 19 and 20. So when you talk about the 10% ongoing, are you being a little conservative there, because it just seems again like, as you've discussed, 18 is really an investment year and there seems like a lot of one time step up costs, but you're not going to see those step up costs repeat and repeat.

Jennifer Scanlon
President & Chief Executive Officer

Yeah, I think that's a great way to characterize it, is that I view the request for investment as, you know, a onetime step change, and they each have to continue to prove that there is an ROI. Now, as John's business expands, he may need greater geographic coverage of technical resources, but there may also likely be opportunity to move people from other roles into that. So, I do think we will keep it below 10% and over time as we gain scale and leverage, I would expect to see that manifest itself in SG&A as a percentage of revenue below 10. For this year, 10s are guidance.

Matt Hilzinger
EVP & Chief Financial Officer

And Mike I would just mention, Jenny had talked about the pipeline of stuff coming up, right? So, you know part of this is you know as something falls off, we may end up having a new product that we want to invest in as well; so I think 10% is a good way to think about it and if it's below that it's below that and we aren't going to spend money that doesn't need to be spent.

Jennifer Scanlon
President & Chief Executive Officer

Right.

Bill Madsen
Senior Director, Investor Relations

Great at this point it is just about 12:30 Eastern Time, so consistent with our agenda we're going to go ahead and wrap up today's event. For those of you on the webcast thank you very much for joining us today. For those of you in the room, we are actually serving lunch just outside and the management team will be available for call it the next 30 to 45 minutes for additional questions. But thank you very much for attending.