



James S. Metcalf

EDITORS' NOTE James Metcalf was elected Chairman effective December of 2011. He has served as Chief Executive Officer and President since January 2011 and was President and Chief Operating Officer from January 2006 until becoming Chief Executive Officer. He is a director of Tenneco Inc. and the National Association of Manufacturers and previously served as a director of Molex Corporation. Metcalf has been a director since May 2008.

COMPANY BRIEF USG Corporation (*usg.com*) is the world's leader in building materials and technologies through its United States Gypsum Company, USG Interiors, LLC, and L&W Supply Corporation subsidiaries and its USG Boral Building Products joint venture. Headquartered in Chicago, USG worldwide operations serve the commercial, residential, and repair and remodel construction markets, providing innovative building products and technologies that enable their customers to create sustainable, inspirational, inviting, and safe spaces where they work, live, and play. USG wall, ceiling, exterior sheathing, flooring underlayment, and roofing systems provide leading-edge building solutions, while L&W Supply branch locations efficiently stock and deliver building materials throughout the United States. USG Boral Building Products are leading plasterboard & ceilings businesses across Asia, Australasia, and the Middle East.

What is the heritage of USG and how has it evolved to where it is today?

For more than 110 years, USG has expanded the boundaries of building science. We have a great library at our R&D Corporate Innovation Center that has the very early plaster that we developed for the White City in Chicago for the World's Fair. It was one of the first exhibitions where we showed our innovative products because plaster still was new. We called it Ben Franklin Plaster, because he brought plaster from Paris back to the U.S. but it was never marketed.

Open Innovation

An Interview with James S. Metcalf, Chairman, President, and Chief Executive Officer, USG Corporation

Before developing Sheetrock® brand wallboard, USG started as a mining company that extracted the rock out of the ground to make plaster. We began as a mining plaster company, and that's how the business was built in Boston, New York, and Chicago.

We have a heritage of always coming up with something new, dating back to the early 1900s. For the Empire State Building in New York, we invented the first elevator shaft that was not constructed with concrete block. Constructing the tallest building in the world at that time required going high but light. Concrete block elevator shafts were also built from the inside so they had to scaffold up, which was very dangerous and caused many fatalities.

Skyscrapers were still relatively new so we invented a system with plasterboard and steel studs to install it from the outside. There wasn't scaffolding and it was lighter – so we invented the elevator shaft.

We had Sackett Board and it was like Sheetrock® but it was in larger pieces and no one wanted it because it was considered cheap. After World War II ended, GIs came back in 1945 and we had to build houses faster to keep up with the demand.

There was a shortage of workers and a lot of babies being born so we needed houses. This is when our wallboard product called Sheetrock® took off because it was efficient and easy to install. Builders no longer had to wait three days for plaster to dry.

Our Sheetrock® invention began our company's strong tradition of developing the most innovative building solutions in the industry. We're proud to celebrate our 100th anniversary of Sheetrock® this year, and the evolution of this groundbreaking product, which really ties back to our company's early successes.

The shelter of the future looks different today with the technology we have.

USG has a great heritage but we've also always been innovators focused on staying one step ahead to improve and create new products that build the spaces where people want to live, work, and play.

Do you define this as a technology company today?

One of the executives on our staff has been with the company his entire career, as I have. He has been working on me, saying we are a technology company, and I believe we are in every sense. For over a century, we

have innovated and patented building material process improvements that have shaped the building industry, making materials better, safer, and more environmentally friendly. At USG, we have what we call open innovation. We partner with universities and labs, and we have alliances with some Silicon Valley companies. This has led to more technology in building systems.

Our lives are built around technology: lighting, electricity, HVAC, entertainment, music, etc.

Soon, someone will be able to walk into their house and the house will know what the temperature should be and what should be on the TV. That's what we're thinking the future will look like.

Is the exciting innovation you offer well understood when recruiting talent?

After our markets, both residential and commercial, collapsed in 2008, we really focused on our message. We took that time to ask what we are good at. We came back to our heritage and innovation but we wanted to do things differently. We had to bring in different types of people with diverse backgrounds across unconventional disciplines to inject new ideas and new energy into our core.

Based on our relationships with the universities, we bring in post-doctorate students from different countries who are subject matter experts. We remind them that once they get their Ph.D., they have options outside of working in a lab or teaching – they can work for us, a manufacturing company committed to attracting talented problem solvers.

We had to bring in some of those big thinkers but also we had big thinkers internally and we matched them up with the business leaders. We had one very big idea in 2009, when we developed a product called USG Sheetrock® Brand Ultra Light where we took the weight out of plasterboard and made it stronger, and we put intellectual property around it. The scientists and business people came up with it. We focused on this one project and got the organization aligned behind it. This changed how we think and proved that we can create this type of innovation when we are all aligned. It took an early success to show that our investments in R&D were paying off, especially when the market was slow to recover.

We used to think our lab was our only universe in which to work on projects, but the world is really our lab. We share problems we

need to solve for with our employees and have created an environment where we get great ideas back.

We have become very proficient on intellectual property, trade secrets, and patents, and we've taken more risks. We have more than 2,000 patents that protect the amazing building technologies we've created over the past 115 years.

We have 65 Ph.D.s on staff, who are all subject matter experts working on various projects. For example, we feel we use too much water in production, so we're working on reducing that by 50 percent. It's great for the environment and for the bottom line as well.

Is brand awareness important for you?

We have one of the leading brands in our industry. Sheetrock® is also our brand. When they were putting up the Freedom Tower, they chose USG products during construction. Our brand is the stamp of excellence for the large commercial contractor.

Home Depot is a very large customer of ours and we have a significant percentage of their business. They want our full brand because we bring the contractor into their stores.

At your size and scale, is it challenging to avoid losing the entrepreneurial feel?

We are committed to growing our business by executing on Our Plan to Win, which is focused on three strategies: strengthening our core, diversifying our earnings, and differentiating through innovation.

With innovation as a core value of our business, we are committed to devoting time and resources to developing new ideas.

A few years ago, our Corporate Innovation Center was using funds for incremental, but important, projects and it seemed we had no money for big ideas. I decided to take a percentage of what we were going to spend on big ideas off the top. This decision has paid off, as some of the big ideas have started coming through the pipeline.

A project we're currently working on is low-cost housing in Mexico. The average size of a home there is 600 square feet. These can be built efficiently with our products, but the process took time to put together. We had a separate commercialization group working while the development people rang the bell every day.

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For over a century, we have innovated and patented building material process improvements.

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We set up an internal review board, which I participate in, where we sit down every other month and review these projects. When they see me involved, they know they're fully supported.

How difficult is it to find the balance and allow for the patience necessary to see things through?

It can be difficult, but the right investors can see the value of the big ideas. Sheetrock® Brand Ultra Light has added \$300 million to the bottom line since we invested in it. We have also started to bring investors to our Corporate Innovation Center to show them the incredible work that is done there and so they can see the talent and diversity we have. We have more than 20 countries represented among our employees with Ph.D.s.

Over the next 10 years, there won't be enough people to fill the highly skilled jobs the manufacturing industry requires. People don't want to work in plants. They offer good salaries and they're safe, but there is a mentality against it.

We have to figure out how to automate. It's about creating the jobs that the children of today will want to grow up to do at a plant. We have an initiative called Advanced Manufacturing where we have invested a significant amount of capital and are investing in research and development and deploying new technologies to drive improvements in both our manufacturing processes and our products. Our goal is to replace the monotonous jobs that we aren't going to be able to get anyone to do in the future with those that are more fulfilling and more challenging, and those folks can build careers around jobs behind the glass. Much of that is innovation-based as well and will make us more competitive as an international manufacturer.

How concerned are you that the necessary talent will be there in the future to keep U.S. manufacturing competitive?

Not at all – by embracing this new era of Advanced Manufacturing, and promoting careers in manufacturing that are rewarding and challenging, we can get the engineers and skilled laborers we need to grow our business and the American economy. We don't have a shortage now but we will have to attract talent to our industry. It's why we have to change how the factory floor looks.

We're going into schools to talk to teachers and explain that we are not the U.S. steel or oil companies of the 1950s. Some people still have the opinion that manufacturing jobs are like that. Manufacturing is the largest job creator in the U.S. and offers a variety of career paths. We need to make sure this is communicated to the next generation.

There is now a focus on diverse workforces. How important is that for USG?

One of our core values is diversity, and we are actively working to build a workplace that reflects that value. Diversity is really important for me as a CEO. Fifty percent of my board is female or persons of color with diverse backgrounds.

We also have an initiative called Women in Manufacturing where we have targeted female engineers and have pulled enough together to reach critical mass. When there is critical mass, it's easier to maintain. There aren't enough

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female engineers coming out of college today. At USG, we want to be part of the solution and have plans in place to make a bigger impact on this for ourselves.

How critical is corporate responsibility to the company?

Service is one of our core values and a personal priority for the compassionate individuals that work at USG. Our employees donate their time and energy to an abundance of worthy causes like Engineers Without Borders, American Red Cross, Heart Walk, and Habitat for Humanity. For example, most of our facilities are in outlying areas where the plant manager is involved with the mayor and the community – it's about being a great citizen from the field up.

Although we dedicate much of our time and energy to improving built environments, we respect the natural environment as well. Our Ecoblueprint® program guides our strategy for environmental sustainability, helping us to efficiently use energy and conserve finite resources in every aspect of our operations.

We also have a foundation where we focus on nonprofits in communities where we operate. We encourage employees at every level to get involved.

In the early days, did you expect to spend your career here?

No. It's really about how the company has treated me. We are a learning organization and we will continue funding education. I got my M.B.A. at night and the company supported me through every step of the way.

Is it hard to avoid getting into the details when you see things being done in a different way?

It can be. I've done things one way and I know how they work, but I have to let change happen. It's also about aligning myself with people I trust, people that I know can make great decisions.

I like when people make decisions and, if they are wrong, we learn from the experience. I actually avoid getting too involved in areas I'm closest to and most familiar with, and spend more time getting comfortable with areas that I'm unfamiliar with. ●