

Profiles in Tech Entrepreneurship: Maria Rios

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Abstract—Over the next few issues of *IEEE ENGINEERING MANAGEMENT REVIEW*, we will feature profiles of some of the many entrepreneurs who are movers and shakers in a variety of fields as part of a technology manager's notebook series. Entrepreneurship requires change agents, leaders who are innovative, proactive, and risk-takers.¹ Entrepreneurship also often requires technology and engineering insights. In these articles, we will provide a look at the innovative thought processes and practices of these entrepreneurs—what got them where they are today. We will also tap into their experiences in order to share lessons learned with the broader community. Many of these entrepreneurs will be attending Technology and Engineering Management Society events over the next couple years. Take the opportunity to meet them as you can, especially if you are thinking about launching your own new venture. Our first featured entrepreneur is Maria Rios.

Key words: Entrepreneurship, technology innovation, circular economy, sustainability, waste management

HOW IT ALL BEGAN

MARIA Rios has more energy than most. It is a good thing because she is tackling a big problem. We are awash in waste. According to the Environmental Protection Agency, the U.S. produces 250 million tons of municipal solid waste each year². Waste is not inevitable, but a consequence of perceptions that miss the opportunity to eliminate its many forms and reap benefits in natural, healthy ways.³

Rios came to the U.S. from El Salvador with her family at the age of 13 and immersed herself in the usual activities: graduating high school, getting married, graduating college. Along the way, she realized she wanted to do something to change the world. She was especially interested in using innovation to better our environment.

While a student at the University of Houston, Rios created a plan for an innovative waste management business. Not long after that, she launched Nation Waste, Inc., today one of the largest, minority owned

businesses in Texas. Founded in 1997, the company provides waste removal and commercial sanitation services for special events – like the Super Bowl and First Lady Barbara Bush's funeral – as well as for government agencies, the oil and gas industry, corporate America and small businesses. It is no wonder she is an inspiration to many.

LAUNCHING THE STARTUP

Rios is a very sociable person, always working on expanding her network of contacts. Shortly out of college, she developed great relationships with a variety of bankers. Using those contacts and her good credit, she purchased two trucks and established Nation Waste. She added a few drivers, hired some family members, and was off and running.

The first five years focused on establishing the business. That involved making connections with customers and delivering on what she had promised. She worked closely with customers to solve their problems and it worked. She hit

break-even in year one and by year two she was working on how to scale the business for rapid growth.

NATION WASTE: TODAY AND TOMORROW

Today, Nation Waste has dozens of trucks and hundreds of companies as customers. They work with companies in the recycling, commercial, construction, demolition, and industrial sectors providing waste collection and disposal services. Rios' goal is to get to zero waste – everything they pick up will be reused and repurposed. She was inspired by what she saw on a visit to Istanbul. The city has moved to a zero waste state and is continually finding creative ways to use biofuels and innovative packaging.

Moving to zero waste will put Rios and Nation Waste at the center of the circular economy, a system in which resource inputs and waste, emissions, and energy leakage are minimized by narrowing and closing material and energy loops through new design, maintenance, repair, reuse, remanufacturing, and recycling processes⁴. According to Timko, "Success looks like a model for society that effectively generates no waste. Instead, the byproducts of one process will become the feed for another one, creating value along the entire production and consumption chain."³

Rios is ready. Over the last 10 years she has traveled all over the globe, instructing others about how Nation Waste continually improves their effectiveness, efficiency, and productivity in unique ways.

The most recent addition to the company's service offerings is Nation Safety Net, wearable sensors – driven by IBM Watson Internet of Things (IoT) – that identify potential dangers and help employees avoid injury. Safety is near and dear to Rios'

heart and has been a primary focus as she has developed her business. She foresees more technology and more worker safety products in Nation Waste's near future.

MAJOR ENABLERS AND BARRIERS

Rios is driven to succeed, personally and professionally. This has involved a combination of perseverance, learning, and networking. She participated in several accelerated MBA-type programs over the last 10 years. In the first program, Goldman Sachs selected Rios to create a growth plan with pivots around multi-year forecasts and feasibility studies for Nation Waste. The plan was so well crafted that they chose her as a nationwide poster child to encourage business growth; they also used her plan as a template to educate others. A few years later, she was selected by the Latino Business Action Network (Silicon Valley) to participate in the Stanford Latino Entrepreneurship Initiative Education-Scaling Program. She graduated from this program with a laser focus on scaling, a growth mindset and how to turn a million dollar business into a billion dollar one. She is off and running on that already.

Rios has gathered a lot of mentors along the way and has had interesting conversations with the likes of Warren Buffet. Her hard work is paying off and she is going places. In 2013, she was named one of the Most Powerful Women Entrepreneurs in America by *Fortune* magazine and was ranked number 7 on the list of top 10 female entrepreneurs nationwide.

But not everything evolved as planned. Nation Waste jumped into the recycling end of the business for awhile. But they soon discovered that there was not much of a market at that time. There were not a lot of incentives for federal and local

governments to commit to recycling; as a result, businesses were not all that enthusiastic. Nation Waste got out of that part of the industry for now and is, instead, partnering with local recycling companies.

Ultimately, Rios was smart to pick the right problem to solve. Waste management is a necessity, just as food and water are to life. She found ways to do it better and at lower costs by upending the status quo. Her appetite for learning continually exposes her to new ideas, especially new technologies, which helps her find ways to use advanced technology to solve existing problems.

LESSONS LEARNED

Rios has learned a number of lessons along the way and has suggestions for those thinking about launching a tech venture. She advises:

- Commit to continuous education: always seek to learn and expand your knowledge base.
- Embrace new technologies as these can lead to new products, new processes, and smarter ways for your employees to do their work.
- Network, network, network as this is where you find opportunities.
- Know your priorities and spend your time wisely. Be selective in how you spend your time and how you allocate your organization's resources.
- Avoid naysayers. Find the positive and keep moving forward.
- Surround yourself with great people and listen to them – employees, customers, advisors, but follow your instincts and go with your heart.

According to Rios, "Keep your eyes open and make it a point to be in the right place at the right time. If you're passionate, you'll always find ways to make the most of each opportunity life brings your way."

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