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# Innovative Leadership & Emerging Technologies in MedTech: A Vision for Growth, Mentorship, and Impact



In an engaging interview, **Deepak Mittal** (CEO & Founder, NextGen Invent) and **Gennaro Maida** (CEO & Founder, Denovo Innovations Group and Advisor, NextGen Invent) converse with **Dr. Gabriele Niederauer** (CEO & Co-Founder, Freyya, Inc. and Board Chair at Liquet Medical Inc.), a prominent leader in the MedTech industry. With extensive experience in transforming clinical innovations into market-ready solutions, Dr. Niederauer shares her inspiring journey as a leader and entrepreneur.

The insightful discussion focuses on the profound impact of emerging technologies, such as AI and machine learning, on medical device development and diagnostics. Dr. Niederauer explored the growing investment opportunities in women's health and emphasized the vital role of mentorship in nurturing the next generation of leaders. Insights from her highlighted her remarkable achievements and offered guidance for aspiring entrepreneurs eager to make their mark in the MedTech sector.

## Journey into MedTech: Experiences and Inspirations

During the interview, Deepak Mittal and Gennaro Maida posed insightful questions to Dr. Gabriele Niederauer, probing her journey in MedTech, the impact of emerging technologies, and the evolving landscape of women’s health. The questions encouraged a deep exploration of her experiences and perspectives, shedding light on innovative leadership and mentorship in the industry.

***Could you share with us a bit about your journey? We'd love to hear how you came into this field, what inspired you along the way, and how you've achieved so much. What experiences and motivations have shaped you into who you are today?***

**Dr. Gabriele Niederauer:** I was born and raised in Germany, where my father, a mechanical engineer, played a pivotal role in developing one of the first alumina hip implants, which are widely used in Germany. At the age of 11, I moved to the United States, arriving with limited English skills and only a smattering of British English, which proved less than helpful in western North Carolina. Throughout high school, I developed a passion for math and science and considered pursuing a career in either engineering or architecture, inspired by a drafting class I enjoyed. However, my father encouraged me to choose engineering instead, believing it would offer better job prospects. Consequently, I got my undergraduate degree in ceramic engineering from Clemson University. During my senior project, I explored the application of ceramics in the medical field, which sparked my interest in biomedical engineering.

This curiosity led me to pursue a PhD in biomedical engineering at Iowa State University. Unfortunately, I found limited job opportunities in biomedical engineering in South Texas, where I was living after graduation, prompting me to undertake a postdoctoral fellowship at the University of Texas Health Science Center in San Antonio, where I focused on orthopedic biomechanics for two years. During my graduate studies, I recognized the value of professors with industry experience who could provide practical, hands-on examples alongside theoretical concepts. When an opportunity arose to join a startup, I initially intended to spend just a year there before returning to academia, given my academic background. However, I quickly fell in love with the dynamic environment of the medtech industry and never looked back.

Today, I find myself at my fifth medical device company and am serving as CEO for the second time. My previous roles in four successful medical device companies culminated in strategic acquisitions, spanning various fields, including orthopedics, sports medicine, ear, nose, and throat, and most recently, vascular access. Currently, I am excited to focus on the women's health sector, developing a wearable medical device that could potentially serve a quarter of all women in the United States.

***The MedTech field is evolving rapidly, attracting significant investment, with some reports projecting a CAGR of 38% by 2030. Advancements in diagnostics, device automation, and engineering technologies are transforming the landscape. How do you envision these technologies — particularly AI, machine learning, generative AI, and advanced engineering technologies — reshaping the development of medical devices? Additionally, what innovative applications of AI and ML do you believe hold the greatest potential for entrepreneurs, patients, and especially in the areas of diagnostics and device reliability?***

**Dr. Gabriele Niederauer:** The use of AI and machine learning in MedTech is experiencing explosive growth. Recent discussions on investment trends highlight that companies incorporating AI or ML attract ten times more investment compared to those that do not. This is an exciting time for involvement in this sector, particularly with a new focus on women's health, where next-generation devices are being developed utilizing machine learning and AI technologies.

*For example, statistics indicate that approximately 45% of Americans are now wearing smartwatches to monitor their vitals and other health metrics. This trend signifies a strong desire among patients to take control of their medical journeys, enhancing their understanding of health conditions and treatment options.*

AI and ML offer numerous benefits across the medical device industry. For instance, optimizing manufacturing processes can lead to improved efficiencies and risk mitigation. In the production of critical devices, such as life-saving heart valves, harnessing data throughout the manufacturing process can enhance quality control. By utilizing AI algorithms to analyze past errors and streamline operations, the potential for human error can be significantly reduced.

Reflecting on a significant issue from two decades ago, there was a notable recall of ceramic hip implants due to improper manual cleaning during production. Residue from the manufacturing process hindered bone integration with the implant, leading to numerous failures and world-wide product recall. The implementation of AI-driven algorithms may have prevented such human errors, ultimately ensuring higher-quality and consistent products.

Moreover, bioinformatics is transforming product design by allowing for patient-specific customization.
*For instance, with advanced imaging techniques, such as MRI scans, customized knee implants can be designed to fit an individual's anatomy perfectly, leading to superior performance compared to generic off-the-shelf alternatives.*

Additionally, AI and machine learning can analyze vast amounts of patient data to determine how different individuals may respond to treatments. For instance, the right therapy for a 60-year-old woman recovering from a stroke can differ significantly from that of a 25-year-old male. By tailoring therapies to individual patients based on age, condition, and other factors, AI enables the development of more effective treatment plans, thereby enhancing patient care and outcomes.

***We're living in an interesting era, especially since the rise of generative AI in November 2022, which has sparked substantial innovation across industries. In the women's health space, your primary focus, we're also seeing increased investment opportunities and significant technology transfer from universities to commercial organizations. In your opinion, what are the key investment opportunities driving growth in this field? Where do you see the greatest potential for innovation and impact on women's health?***

**Dr. Gabriele Niederauer:** The past decade has witnessed a significant shift in the focus on women's health technologies, an area that has long been underserved. Historically, many clinical trials have neglected to include female subjects, leading to a substantial gap in understanding how women respond to various diseases and treatments.

However, recent efforts have established a dedicated Women's Health division within the Department of Health and Human Services, which has facilitated increased funding for research in this crucial area.

*From a business perspective, the FemTech industry has shown remarkable growth, with 15 initial IPOs and 149 mergers and acquisitions already recorded by March 2024. This robust activity indicates a strong start to the year and positions the sector for substantial growth in the coming years. Notably, 10 exits have occurred in 2024 alone. The notable FemTech mergers and acquisitions have ranged between $100 million and $400 million, signaling the increasing value placed on innovations in women's health.*

The growth potential in this sector can be attributed to several factors. Firstly, women's health remains an underserved area, presenting a unique opportunity for innovative solutions. *Additionally, women play a pivotal role in medical decision-making within families, with statistics indicating that they make 85% of healthcare purchasing decisions.* This trend emphasizes the demand for access to the best treatments, not only for themselves but also for their partners and children. Consequently, this growing demand drives innovation and investment in the development of women's health products.

As an angel investor, exposure to emerging technologies has highlighted the importance of developing software applications and tools aimed at improving health literacy and promoting better lifestyle choices. Initiatives that provide telehealth services and remote monitoring capabilities are vital, especially for individuals in rural areas where accessing healthcare can be a significant challenge.

***Following Dr. Niederauer's insights, Deepak highlighted the necessity of leveraging innovative MedTech solutions to bridge gaps in healthcare access and address social determinants that impact women's health outcomes.***

***You've been deeply involved in mentorship, with an impressive track record of founding five companies, four of which have had successful exits. Given your wealth of experience, what advice would you offer to young organizations, emerging leaders, and aspiring entrepreneurs to help them achieve success in their ventures, as you have in yours?***

**Dr. Gabriele Niederauer:** Being an entrepreneur and a CEO is an incredibly challenging journey, requiring immense passion and dedication. It is not for the faint-hearted; there are numerous ups and downs along the way. For every success story shared on platforms like LinkedIn, there are likely multiple near-failure experiences that often go unmentioned.

***Persistence and unwavering dedication are crucial to navigating these turbulent times.***

One of the most valuable pieces of advice for emerging organizations and aspiring entrepreneurs is to actively cultivate a strong network. Seek out mentors who have traversed similar paths and are willing to share their insights. Many successful entrepreneurs have benefited from connecting with experienced individuals who can offer guidance during tough situations. The support of a mentor can make a significant difference in overcoming challenges.

Additionally, it is essential to encourage more women to pursue entrepreneurship. *Even though women influence a substantial percentage of purchasing decisions, a mere 2% of venture capital funding is allocated to women founders, and only about 15% of venture capital decision-makers are women. This disparity extends to leadership roles, where only 5% of CEO positions in S&P 500 companies are held by women. Promoting diversity and inclusivity within the entrepreneurial ecosystem is vital.* By supporting and mentoring diverse leaders, we can help ensure that they have the necessary resources and opportunities to succeed in their ventures.

***Building on Dr. Niederauer's insights, Deepak recognized the vital importance of gender diversity in healthcare leadership, underscoring the need to include women in senior roles to enhance overall organizational effectiveness.***

# Wrapping Up

This insightful discussion underscores the critical importance of gender diversity and innovation in the healthcare sector. As Dr. Niederauer, Deepak, and Gennaro highlighted, fostering women's leadership in high-level positions is not only essential for enhancing organizational performance but also vital for addressing the unique healthcare needs of women. The data-driven approach taken by NextGen Invent sheds light on the complexities surrounding female representation in leadership, revealing the barriers that still exist.

Moving forward, it is imperative for organizations to actively promote inclusivity and support mentorship initiatives that empower aspiring female leaders. By embracing diversity and leveraging technological advancements, the healthcare industry can drive meaningful change, ultimately leading to improved health outcomes and a more equitable future for all.

# Speakers

## Dr. Gabriele Niederauer



Dr. Gabriele Niederauer, CEO and Co-Founder of Freyya and Board Chair at Liquet Medical Inc., is a prominent leader in the MedTech industry. With extensive experience in transforming clinical ideas into market-ready solutions, she has excelled in various executive roles across multiple medical device companies. Gabi embodies the principles of servant leadership, prioritizing the creation of successful enterprises while nurturing strong relationships with physicians and expanding market presence. Her robust technical expertise, coupled with exceptional communication skills, enables her to deliver compelling and influential presentations that resonate with diverse audiences. Passionate about advancing women's health, Dr. Niederauer is dedicated to fostering innovation and collaboration in the healthcare sector, ensuring that the voices and needs of women are at the forefront of medical advancements.

# Contributing Authors

## Deepak Mittal, MBA, M.S.



Deepak is an accomplished serial entrepreneur with a proven product, AI, and data Strategy track record. He is experienced in transforming an organization into an insight-driven, AI-enabled organization. Currently, Deepak holds the Founder and CEO position of NextGen Invent Corporation. During his career, Deepak has served as a member of the Board of Directors of many companies, including Columbia Business School Alum Club of NY, CMR Institute, D4DT, Optym, and Launch Right Now. He is a strategic advisor of various organizations that grew from small start-ups to unicorns or had successful exits.

# Contributing Authors

## Gennaro Maida



Mr. Maida (CEO & Founder of Denovo Innovations Group and Advisor, NextGen Invent), a seasoned Senior C-suite Executive with a remarkable background spanning over 20 years in biomedical engineering, technology, medicine, and data science. Throughout his illustrious career, Mr. Maida has been instrumental in ushering in the next generation of medical solutions, leveraging the power of data science and real-time biometrics. His expertise extends beyond the boardroom, as he actively serves in advisory roles, propelling health-tech startups to unprecedented heights. He is recognized as one of the Top 100 Health Care Visionaries by the International Forum for the Advancement of Healthcare, Mr. Maida continues to make waves in the industry.