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Edwards' CSO: Acquisitions Are Not The Only Way To Drive A Medtech Growth Strategy

Maximizing The Impact Of Internal Innovation In Structural Heart And Critical Care

by Ashley Yeo

In following his passion to make an impact in clinical outcomes, Todd Brinton has been back-and-forth across the medtech map since leaving university. Now in a senior role at Edwards Lifesciences, he is not letting up on his quest to continuously innovate and make a difference in clinical care.

Todd Brinton had an unconventional career path before accepting the role of chief scientific officer (CSO) at one of the world's most influential, innovative, and patient-focused companies developing medical technologies for structural heart disease, *Edwards Lifesciences Corp.*

Having followed a passion to study biomedical engineering at university (UC San Diego), he immediately threw himself in at the deep end of the commercial sector, working as a start-up intern. That company was Pulse Metric. Some 17 years later in his career, in 2009, he was again seduced by the lure of the start-up environment, co-founding *Shockwave Medical, Inc.*

But after four years innovating technologies at Pulse Metric, gaining a lot of business and regulatory knowledge besides, he decided to put his commercial ambitions to one side and enter medical school. The process was not without hiccups, but at the relatively late age of 27, he joined the Chicago Medical School at Rosalind Franklin University of Medicine and Science.

Once qualified as a physician and having benefited from sound mentoring along the way, he

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TODD BRINTON: CONSTANTLY DRIVEN BY THE NEED TO "DO SOMETHING THAT MATTERS"

joined Stanford University School of Medicine as an internal medicine resident. An eternal ambition to make an impact in cardiovascular medicine ultimately saw him appointed clinical professor of medicine (cardiology) in April 2017.

Stanford is where he would be now, had Edwards' CEO Mike Mussallem not called in late 2018.

Edwards was seeking a chief scientific officer (CSO), and although, as Brinton explains, he'd never allowed such a role to come onto his radar, it seems as if his somewhat tortuous, but totally dedicated, career path had unknowingly led him to that very threshold.

A Mission To Elevate The Status Of Structural Heart Disease Globally

CSO and corporate VP at one of the world's key innovators in structural heart disease (SHD) and critical care medicine is the role he has developed since January 2019, guarding an ambition to elevate both the awareness of SHD globally, and the recognition of his fellow scientific and technical specialists within Edwards Lifesciences.

Brinton reflects on both his own unusual career path through cardiology medicine and his ambitions at Edwards Lifesciences – an unconventional medtech innovator as many would see it – in this interview with *In Vivo*.

Q ***In Vivo*: You've now been at Edwards Lifesciences for over three and a half years. How has your remit as CSO developed?**

A *Todd Brinton*: My role is split between two major functions. One is the internal development of new technologies beyond our existing businesses. We have five business units at Edwards, four of which are commercial [transcatheter aortic valve replacement, transcatheter mitral and tricuspid therapies, surgical structural heart, and critical care]. The fifth, a fully-functional business unit with a separate P&L, is called Advanced Technology, of which I am the leader.

Advanced Technology houses internal processes for evaluating our next-generation

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technologies for patients. Our most recent business unit, TMTT, was incubated inside Advanced Technology. My role in leading Advanced Technology involves developing core capabilities, such as simulation, engineering services, and both animal testing and lab testing. I am also responsible for our centers of excellence, which focus on core technologies that enable the R&D process.

As CSO, I sit on the executive committee of the company and on the investment committee, where I lead evaluation of external technologies. Our overall innovation strategy includes the combination of internal incubation and external exploration, thereby developing the company with a dual process.

I also have responsibility for our global R&D strategy, with R&D managed in the business units reporting directly to the respective GMs. I lead the R&D leadership team that involves all of engineering, clinical and medical affairs. We work on developing best practices and on building our innovation strategy indirectly across our business units.

Q **Edwards' revenues grew by 19% to $5.2bn in 2021. A lot of that growth has come from internal innovation?**

A I believe Edwards is very unique, and that was the draw for me to come here. We are, for the most part, an organically-grown company. When we invest in acquisitions and investments, we usually make those acquisitions early, invest in early-stage technology or IP, and then incorporate them into organic growth.

We tend to make the embodiments and run clinical trials ourselves, because we are very focused on our structural heart disease and critical care medicine remit. This allows us to lever our ability to grow organically, develop strong relationships with our KOLs and with the industry, and really understand what our patients' goals are.

Q **The dominance of organic innovation in the growth strategy follows the**

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blueprint set out by CEO Mike Mussallem?

A Mike sharing his ambition with me is what drew me to leave Stanford. I was an entrepreneur, have been involved in many companies and have started up companies. Here, the lure was to drive entrepreneurial innovation in a way that is not quite the same as at a number of other companies. Yes, it's an organically-grown company, and we believe we're still in the early phases of that.

We have a lot of opportunity for growth, and our innovation strategy is really key to executing. If you're a company that grows through acquisitions of revenue-based companies, R&D is still important, but is not as critical to overall strategy.

For us as an organically-grown company, R&D is fundamental to our ability to execute our strategy for growth, and this is how we invest. We will put almost $1bn into R&D this year, and we've continued to make double-digit investment in our R&D pipeline – at 16-18% for the last decade [17% in 2021]. That is unusual for most companies of our size.

Q **The biomedical engineering spark for you came at a very young age.**

A I loved biology and anatomy, both my father and his father were engineers, so biomedical engineering was what I wanted to do during and after college. That was the beginning for me. It was not the usual career path.

Engineering is tough, but it's served me well during the different phases of my career and there's been a number of pivots over the years, but it seems to me like they're somehow all connected. However, in the early days, if someone had told me I would have been a full professor at Stanford, an entrepreneur that took a company public, or an officer at a public company, I would not have believed them.

The decisions I've made have all come down to following my passion, taking opportunities to grow and learn, and continuing to challenge myself.

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To me, what really matters is the opportunity to have impact. That is vital to me: whether as an engineer in design, starting a company, or taking care of patients as an interventional cardiologist, I wanted to do something that mattered.

Whether as a professor at Stanford training up others, working with Paul Yock to develop the center [Stanford Byers Center for Biodesign] or when coming to Edwards, it's no different for me: it's the opportunity to make a difference and hopefully drive an innovation strategy that really impacts patients – and one that others can participate in.

Q **After passing through UC San Diego Center for Biomedical Engineering, you went straight into a start-up.**

A I joined as an intern at a very small company in San Diego that had an opening for an engineer. I helped them get their first venture funding and file their first 510(k). I grew in that opportunity and benefited from the experience. Being in a small company allows you to touch so many elements—engineering and clinical – but importantly, I also got the chance to have really great mentors.

The big thing for me at that time was that I met Tony DeMaria, the chief of cardiology at UCSD and former president of the American College of Cardiology. I was collecting data on his ideas for this small company. He mentored me on how to present, publish and do good investigations. It was good mentorship that made me fall in love with cardiology.

Q **Those experiences helped you open doors later in your career?**

A No doubt about it. That company gave me the chance to work as an engineer, to know what filing a regulatory report entailed and how to do clinical trials and clinical studies. In fact, I was exposed to all that before I went to medical school!

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My first application to go to medical school was unsuccessful, but Tony DeMaria told me to keep on doing work and to reapply. I was ultimately accepted at medical school in Chicago at the age of 27. For me, it was all about the opportunity to grow and learn.

So I entered medical school late, having worked in industry and having been exposed to the world of innovation. At that point, I was able to spend time developing my skills as a physician, and that led me to Stanford, for internship, residency and ultimately fellowship. Tony DeMaria immediately connected me with one of the great innovators, Paul Yock, who was at Stanford.

Q **Was this stage in your career a step backwards to go forwards?**

A A lot of people were growing in their careers at the time I decided to go back and learn the fundamentals at medical school. Sometimes, being a first-year medical student after five years in the industry, I did feel like I was taking a step backwards. But ultimately, it was an investment in my development and knowledge base.

The same was true when I got to internship and residency at Stanford: you're learning a skill. I didn't know then if I would spend my entire career in clinical practice, but I had intended to. It was really due to Mike, who reached out and said: 'We have an opportunity – consider it.' I don't think I would have left clinical practice for almost anything else.

Q **Mentorship has been of help in your career. At Edwards, how do you give time back to others, inside and outside the company?**

A This point is critical to the fulfillment of me and of my career, but it's also critical to the strategy for Edwards.

There are a lot of synergies there. When I got to Edwards, I was impressed by the really tremendous engineering, but as someone who had been a clinician I felt that

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there was a need to bring more robust clinical capabilities and more physicians into the company.

Typically, at most medtech companies, physicians are found in the upper offices – as VP of medical affairs or the chief medical officer. But we're interested in bringing physicians in who will work side-by-side with engineers and marketers, and in that way develop all of our business.

When it comes to engineers, I feel that there has not been consistent equality in career development paths. Our best and brightest engineers bring their best abilities to valve design and to materials sciences, etc. For them to be able to pass on that knowledge to other engineers, both technically and career wise, has been a big goal of what we've been trying to do at Edwards moving forward.

We have 2,000 engineers at Edwards, and we wanted to create a career development pathway that sets out the vision for engineers and offers the same rewards for people who are in deep engineering.

We have created the technology leaders' pathway. The idea is that an engineer at a senior stage in their career can develop in their role, and maybe manage a small element. Usually, at a certain stage, they often have to change and pursue the path of being a people leader to continue to grow in the company.

But if the key to organic growth is the development of great technology, we also need to actively develop our technology leaders, whose goal it is to think broadly about the development of technology as well as mentoring the next generation of great engineers.

We then expanded our dual career development path, such that, at Edwards you can rise to the highest level—a senior VP of the company, as a people leader; or what we call a 'Lowell Edwards senior fellow' [Miles 'Lowell' Edwards founded Edwards Lifesciences in 1958]. We don't have an employee in that role yet, but we have

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created the opening so that people can aspire to it, and in doing so become the 'elite of the elite.' They can be the ultimate engineering mentor in the company. Mentoring is so important, not just by the traditional managers, but by others within the company too. That was part of the reason we developed this more robust dual career pathway idea.

It might not be for everyone, but an organically-growing company needs people with a fundamental commitment to innovation, and the people who can execute on it. We are already seeing its impact on the company.

We feel it's a very unique program. It doesn't just cater to vertical career growth; it allows people to move left or right within the company, from technology leader to people leader, and vice versa. This can help them achieve horizontal career development goals while staying on the same pay band and keeping the same rewards .

The way I describe it, in engineering companies, people leaders have a 'major' in people, and a 'minor' in technology. Technology leaders have the inverse, and they lead our technology initiatives and innovation strategy.

Q **'Rising to the challenge' is a maxim you've carried through you career. What challenges must your current team and successors at Edwards rise to?**

A The big area for me, within our structural heart disease company, is that we still have a lack of recognition of how big the impact of SHD is on world populations. Coronary disease, hypertension and AF have been elevated in people's minds. SHD has yet to do so, and yet the incidence is high.

Edwards Lifesciences' Technology Leaders Program

Edwards' technology leaders program started some six months ago. Its impetus was to develop technical/engineering talent, which is vitally important. It was prompted by the following:

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We used to have very invasive solutions for these diseases, and we now have therapies where patients can go home the next day, in some cases the same day.

Our challenge is to take on the clinical problems, improve access to screening, get good diagnoses and then have a good team of physicians to take care of the patients while we continue to advance the development of these technologies to minimize complications and maximize efficacy.

- In many companies, technical expertise can be lost or un-nurtured as great engineers advance into senior level management positions that require managing people;
- Technical challenges require technical expertise. Supporting engineers with career growth opportunities helps them maintain their technical expertise while advancing to the highest levels within the organization;
- Dual engineering career paths are aligned in parallel between people management and technical leadership, all the way up to the highest levels of senior VP (people management) and senior Lowell Edwards Fellow (technical leadership); and
- Engineers are not locked into one path at any point in their career. As opportunities, professional goals and personal priorities shift, so can engineers, in alignment with business needs.

Q **We live in changing – changed – times, in which your remit embraces diversity and inclusion.**

A During my time running the fellowship at Stanford [Biodesign Innovation Fellowship director 2006-19] I learned very well that when people would talk about diversity and innovations, it was to observe how medical, business and engineering were all coming together—in a diversity of innovation.

But we recognize that innovation is also the diversity of gender, culture and social equality, because we reflect the patients we take care of. If we're really going to bring

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> great technology and solutions to patients, we must think differently, and know that genders and different cultures think differently, and approach problems differently.
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> If we want the best solutions for the patients we serve, we have to not only bring multi-disciplinary thought processes or focus on areas of expertise, but we must really think of these other elements, of gender, culture, socio-economic status, and see them as essential components, as they reflect the patients we take care of.
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> We will not be able to bring the best technology to our patients if we don't reflect those patients in the innovation process.

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