Building a Surgical Robotics Company to Succeed

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Abstract: It's not enough to identify an unmet need in the operating/procedure room that a surgical robot could satisfy. Do you know the decision process of adopting your robot into the institution's workflow? Do you know for certain how you will make money in the regulated world of surgical/procedural medicine? Do you have a defensible patent position with a long-term strategy to strengthen it? Can you stand out if you have chosen to develop for one of the overpopulated surgical robotics subspecialties? Are you creating a company that can grow on its own and just as well be acquired and tucked into an existing medical device company looking to expand its revenue and future directions? Can you sort out how to finance what you think you need to do in a way that you do not endanger your future financial success? So many questions and so many more not spoken/known/considered.

There are all the things taught in business school and the defined pathways to starting up through incubators and hard learned proscriptions coming from entrepreneurs and academia. But in surgical robotics, with its very specific focuses for product and its particular place in the medical, regulatory and financial system that surrounds it, it often feels like there is not much prior experience to rely upon. There have only been a handful of market and financial successes to date in surgical robotics even though there have been almost 300 commercial efforts spanning nearly all aspects of surgery and procedural medicine.

Based on my having been part of 8 commercial surgical robotics startups, my hobby of following as wide a swath of surgical robotics developments as I can find since I worked on the first NOTES robot in 2000, and my being in the midst of my own startup in surgical robotics with HeartLander Surgical, I will talk about factors to consider and possible strategies to follow to improve your chances of success.

Bio

Dwight Meglan is a life-long practicing engineer who has focused on developing systems and devices for the human body. Dwight started out as an academic with a post-doc and tenure track offer in Orthopedic Biomechanics at Mayo Clinic, but realized that the traditional management centric academic career was not a match since he had wanted to be a hands-on engineer since childhood. He has now worked in startups and large companies over 30 years making contributions to a variety of surgical robots, image guidance systems, minimally invasive vision systems, haptic user interfaces, medical devices, and real-time computational physics and graphics systems for simulation-based surgical skills training using VR and AR. He also has proposed and received a variety of government grants, served as a grant reviewer for some years, and has more than 50 patents/applications. Through this time, he has worked on 8 commercial surgical robots at startups as well as very large corporations as an individual contributor as well as in a planning/leading role. He was the creator and technical lead on the first commercial endovascular simulator which became the basis for the studies that proved simulation-based training produces improved clinical outcomes and that simulator is still produced more than 20 years later. He currently divides his time between his own surgical robotics startup as well as consulting on a variety of projects.