

Teamwork: The Key to a Successful Medical Device Development Project

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I was watching the 24th annual Delta Deas Rowing Regatta last weekend showcasing more than 400 high school and University athletes from all over British Columbia and was amazed at the level of effort, coordination, and teamwork. In a series of well organized heats, team after team gracefully glided along the 1 km channel course to finish within meters of each other. I could not help but study the various team dynamics to identify what makes a winning boat. From the equipment perspective, all teams seem at the same advantage: streamlined hull design made of light fibreglass composite material, well balanced craft with approximately same weight distribution, all facing same environmental conditions. So what is it? Fitness level, degree of smarts...more likely teamwork, coordination, and the right attitude. Medical device designers are no different than these rowers. They must all work in tune to develop effective, successful, cutting-edge technology.

As a project manager leading teams of highly educated, experienced, and intelligent engineers and industrial designers, I spend a lot of time creating a positive upbeat project culture where everyone feels included, free to speak up, and reassured that their contributions matter. I welcome all news and road blocks, and I listen when team members worry about any aspect of the project, whether related to material selection, component integration, robustness of core system, calibration, delivery of parts, or other. Openness of communication is important to the project success and I encourage all to identify, at an early stage of the design, possible hazards, deficiencies, and difficulties for manufacturing. Anticipating project risks, capitalizing on opportunities, and continuously engaging with clients and

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stakeholders are fundamental to the completion of a medical device designed to highest standard.

Several elements must be in place for a medical device to be successfully and systematically transformed from a concept to a commercial entity. They consist of:

- Creativity—open mind, innovation, and an ability to let intuition lead concept development
- Openness—consideration for alternate solutions and opportunities
- Responsibility—commitment to the project and dependability for tasks
- Respect—good listening skills and provision of space for individuals to express themselves
- Understanding—trust in individuals, their motivation, and their ability to pursue
- Patience—promotion of persistence, building self-confidence
- Engagement—willingness to participate and encourage skill development in self and others

Medical design team members are no different than rowers. Although they come with a variety of skills, experience, interests, and abilities, they share the same passion for the work, have a competitive edge and strong motivation to excel at what they do, and share a very high work ethic. Designers need to be in tune with one another so that their design efforts can be coordinated and contributions integrated to create the perfect medical device. Productizing an idea for a medical device is highly complex, which entails a systematic development process from concept development, core technology and sub-system integration, feasibility review, device risk analysis, usability and human factor examination, structural analysis, and verification/validation.

My job as a project manager is to identify work that needs to be done, create a multi-disciplinary team, and identify individuals well suited for specific tasks by capitalizing on natural and learned skills. In addition, I encourage a positive team culture, convey a sense of challenge and enthusiasm, and create opportunities for team members to work closely, collaborate, and share a common goal. A team with the right attitude will effectively address project requirements and, more importantly, gracefully deal with technical difficulties, business changes, or other project issues. It's all in the right attitude.

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