“You don’t win a prize everyday”

A new bed imitating the movements of healthy people when sleeping should help protect bedridden patients from decubitus ulcers, better known as bedsores, and at the same time unburden health-care personnel. Behind this project, which recently won several start-up awards, is Michael Sauter, a mechanical engineer and young entrepreneur who in May 2009 founded his own company “compliant concept”, supported by Empa’s glaTec technology centre.

TEXT: Martina Peter / PHOTO: Ruedi Keller

At first glance, a nursing bed for bedridden patients hardly seems to fit the image of this sporty young man. During his dissertation, Michael Sauter was more interested in hockey sticks. And that’s not because of his ambitions in sports, which was actually more in mountain biking. Rather, in his area of research, compliant systems, he saw enormous potential in improving products of all conceivable types.

For example, hockey sticks. In an industry project headed by Paolo Ermanni at the Institute of Mechanical Systems at ETH Zurich, he had the opportunity to incorporate his ideas and develop a new concept of benefit to manufacturers of hockey sticks. And he was successful – since the 2006 Olympic Games in Turin, his hockey sticks have been put to use not only in Switzerland but also in neighbouring countries.

Together with other students, Sauter then developed a new type of automobile seat which can adapt to the driver or passenger and the situation on the road. Then, according to Sauter, something suddenly popped into his head: “There’s no good reason why I can’t do the same thing with beds...” He couldn’t get this idea out of his head even after, following completion of his doctorate in 2009, researcher Flavio Campanile brought him to Empa’s Mechanics for Modelling and Simulation Laboratory.

What works for a hockey stick also works for ... beds

But it might have remained a mere idea, had Sauter not taken part in the Venture Challenge course, supported by the Swiss Innovation Promotion Agency (CTI). Here, university graduates learn how to take innovative technologies and convert them into business concepts. At the course, something became clear to him – a bed which can adapt would be an enormous help for bedridden patients and health-care personnel. The problem is that in order to thwart the danger of bedsores or decubitus ulcers, nursing staff must continually change a patient’s position. A new type of jointless slatted bed frame made of smart materials and a mattress adapted for the purpose could take over this task. Together they should imitate the movements of a healthy person by gently and firmly changing the patient’s position.

The mechanical engineer was convinced that this was technically feasible. However, to gain the necessary medical background and to determine whether there was actually any market for such a new nursing bed, he needed the help of health care experts. The decubitus specialist Walter Seiler initially reacted cautiously to Sauter’s enquiry. “That’s not at all easy, and many others have already made attempts,” he thought. But after a visit with Sauter he became enthusiastic. He was impressed by the fact that an engineer could address and understand the issues dealing with decubitus ulcers in such a comprehensive and systematic way.

Extensive network of partners

With the goal of developing new technologies which make everyday life a easier, “compliant concept” has entered into collaborations with numerous industry partners: OBA AG, Festo AG, Fritz Nauer AG, Bigla Care, wissner-bosserhoff GmbH, Sarna Plastec AG, Produ-Plast AG and Qualicut AG. Also belonging to this network are the Swiss Paraplegic Centre Nottwil, the University Hospital Basel and the HSR Hochschule für Technik Rapperswil.

The scientist-turned-entrepreneur

Sauter had not only discovered his topic but also won over an experienced mentor who then taught him how to better understand medical interrelationships, and this even though Sauter can't stand the sight of blood. He spared no effort in learning to appreciate the needs of those affected, even to the point where he worked as a trainee in a health-care facility.

All this newly gained knowledge finally led in May 2009 to the founding of his own company, "compliant concept". This spin-off from Empa and ETH Zurich set up its offices on the Empa campus in Dübendorf, in the glaTec technology centre. "In Switzerland we have a fantastic set-up where you can get help with every aspect," as he found out, "but you just have to go out and get it."

This also meant that he had to address his weaknesses. For example, he had to learn how to present his ideas in a persuasive manner. For this, Mario Jenni, glaTec's Managing Director, acted as his sparring partner. Sauter was also able to count on Jenni's support in preparing contracts. Jenni praises Sauter as not just being a good listener but adds that he implements suggestions in a professional way and is goal-oriented in doing so. "He's got a good sense for what the market wants, and already at this early stage he's built up a large professional network."

Being open to the inputs of others along with a large willingness to learn and ability to pick up the required knowledge are traits which characterise Sauter. Martin Wyttenbach, a CTI Start-up coach, attests to this young researcher's impressive personal development. He first got to know him when his project was accepted into the CTI Start-up programme. Since then, Wyttenbach has accompanied him as a coach and in helping his development as a young entrepreneur. In this regard, Sauter must address central issues including market positioning, the business model, marketing and financing.

A prize-worthy idea

The progress of this young company has not gone by unnoticed. With his team, Sauter has already won several prizes for young entrepreneurs. Just recently he received the CTI Medtech Award 2010; last January, Sauter was recognised with the Venture Idea 2010 award for having one of the ten most innovative business ideas originating from Swiss universities; and at the end of 2009, "compliant concept" received the Heuberger Winterthur Young Entrepreneurs Prize. However, as Sauter says, "You don't win a prize every day, and many times you simply have to persevere."

While the central focus during the initial stage was on the best product from a technical standpoint, in the second phase it shifted to the construction of a prototype bed. And here Sauter was able to show that the idea worked. A new nursing bed only has a chance of becoming established if it has demonstrable advantages over conventional beds in every respect, so tests were conducted at the Swiss Paraplegic Centre in Nottwil. This is not only a question of how practical the idea of a "self-moving nursing bed" is, any future success also depends on seemingly unimportant details such as how easy it is to clean.

Meanwhile, all efforts at "compliant concept" are focussed on the question of how this bed system can be successfully introduced into the market. Sauter just recently signed a letter of intent with a German company, one of the three largest manufacturers of nursing beds in Europe. In addition, he's continually on the lookout for new partners and investors, especially those with experience in the international marketing of medical equipment. //