Going beyond the pill

Medical technology is advancing at breakneck speed, due in no small part to the digital revolution. **Wibu-Systems** is at the forefront of developing digital solutions that ensure medical devices and systems are protected with advanced security technology.

The healthcare industry has always been at the vanguard of innovation and technological evolution, but the onset of the digital age is giving medical-technology and life-sciences enterprises a momentum never seen before. In Deloitte's '2016 Global Life Sciences Outlook', the consulting specialists identified the sources for the new energy setting the industry ablaze: care is becoming personalised, digitalised and interconnected. Mobile medical devices are commonplace, and even inpatient care is increasingly relying on connected solutions. Big data and sophisticated analytics make for better and perfectly targeted treatments. And the functions of medical devices are increasingly determined by their software and not dictated by the hardware; medical-technology providers can offer their users more flexible and versatile devices with lower investment thresholds.

With an estimated total of $418 billion in future global revenue, the medical technology industry faces two gatekeeper challenges, according to Deloitte: the ability to seize untapped market potential with innovative therapies and services, and to actually deliver these in a secure and commercially viable business model. For the makers of medical devices, this means finding ways to secure their technology against potentially life-threatening tampering and manipulation, and to protect the often extensive investments, financial and intellectual, in their machines. At the same time, innovative technologies enable novel business models with new types of revenue streams.

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Advanced security technology

Fritz Stephan, the world leader for innovative medical ventilation systems, is taking pioneering steps on this double front of innovation in technologies coupled with innovation in business models. Introduced in 2014, the Easy Ventilator Emergency (EVE) family of highly specialised ventilators is the product of a generation of experience and expertise in ventilation therapy, combined with a revolutionary business concept.

The three models – EVE^{TR} for emergency response, EVE^{IN} for inpatient treatment, and EVE^{NEO} for use in neonatal units – are equipped with the latest in ventilation-turbine and

Fritz Stephan's line of EVE medical ventilators.

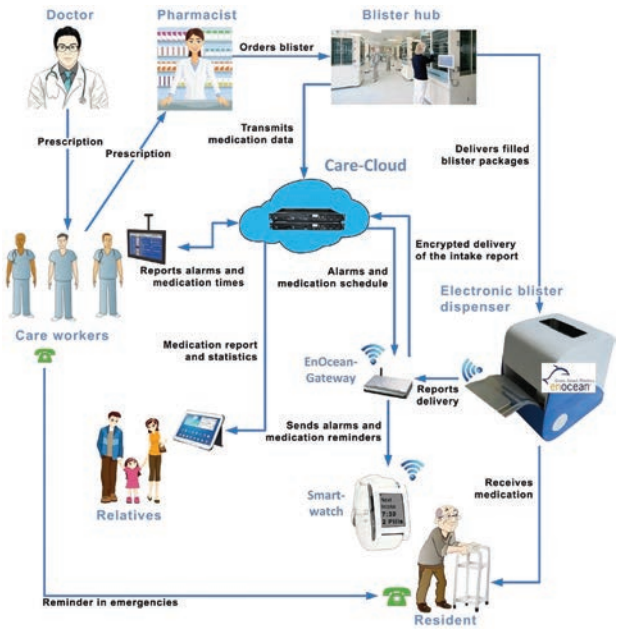
diagnostic technology, and designed with ease of use in mind. With just three buttons for choosing the right mode and a sleek mobile body with large battery capacity, the systems are perfect for the high-pressure environments in which they will be used.

Critical therapeutic devices like the EVE ventilators need to fulfil exacting medical and security standards. With this in mind, Fritz Stephan chose Wibu-Systems' flagship CodeMeter technology to protect its devices. A secure SD card with SLC flash memory is built into the units, and stores the encryption keys and certificates to safeguard the IP invested in the machines. This design makes the devices easy to maintain and upgrade by technicians with the right licences, and prevents any attempt at tampering with the machine or stealing the built-in know-how, short of breaking the devices apart.

With the secure-licensing functionalities of CodeMeter, Fritz Stephan is able to offer the users of its devices not only securely configured ventilators, but also an innovative business model in the form of field-upgradable functionalities. Users can buy the requisite licence at a later date and, for example, enable the adult ventilation features on an EVE^{NEO} unit remotely and securely via CodeMeter License Central. The device remains the same, but its capabilities are realised by software and can be easily adapted to match the needs on the ground. The approach keeps the upfront investment low, while giving the users a responsive option to adjust their technical capabilities to keep up with actual demand.

Digital patient care

The OpSIT project, supported by Germany's Ministry for Education and Research, builds on another aspect of the new technical capabilities offered by digitalised healthcare: the provision of reliable medical support in the field, without requiring excessive manpower or unwieldy infrastructures.



Wibu-Systems' CodeMeter technology protects the vast quantities of data that make cloud-based patient-care systems possible.

As the population ages, increasing numbers of people require regular access to medication. Without constant nursing care, self-medication represents the only viable but too often error-prone option. Studies have found that up to 30% of all self-administered drugs are not used correctly.

The OpSIT system steps into the breach by helping patients manage their drug intake with regular notifications, medication logs and emergency warnings to nursing staff. Prescriptions are registered, drugs are ordered and treatment administered via the cloud, while patients simply receive the drugs they need, delivered by their electronic dispenser.

The system depends on sharing highly sensitive patient data. Protecting that data's integrity and privacy is again made possible with CodeMeter. The technology protects the endpoints and securely encrypts the data in the Care Cloud. The system handles everything securely in the background, and the patients and their relatives can rest assured that their treatment and personal data are safe.

Both applications are made possible by Wibu-Systems' CodeMeter technology, the versatile multiplatform solution for protection, security and entitlement management. In the medical technology sector and beyond, Wibu-Systems helps protect the integrity and security of data, and allows new business models to be perfectly tailored to the needs of the market: low upfront costs, responsive pricing models and user-friendly services delivered with dependable security. ■

Further information
Wibu-Systems
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