

Innovation in Focus

Powerfull solutions for the future

The international growth markets of the chemical and pharmaceutical industries, particularly in the life sciences area, are characterised by strong dynamics. Interdisciplinary collaboration between various scientific disciplines and technologies is becoming increasingly important and produces a breeding ground for new concepts and ideas. Right from the start, Mettler-Toledo, the world's largest manufacturer of precision instruments, have always relied on the power of innovation. In 1945, the Swiss engineer, Dr. Erhard Mettler, successfully introduced the market to the principle of substitution with the first single-pan analytical balance for series production. Today, innovative Mettler-Toledo solutions can be found in nearly every industry sector. q&more spoke with Dr. René Lenggenhager and Matthias Gietenbruch about the significance of innovations for the company and the benefits for the user.

Award-winning "New-to-the-world Solution":

The QA-system is internationally the first bench-top system for automated dosing of the smallest powder samples. Using the innovative gravimetric dosing principle, the second generation of appliances is also able, in the meantime, to precisely dose liquids.



“Innovation is the art of finding an answer before the question is asked.”

Dr. Lenggenhager, the competence of Mettler-Toledo is based on balance technology – the systems cover a range from 0.0000001 grams to 1000 tonnes. The Mettler brand stands, particularly in the USA, as a synonym for laboratory balance. What were the milestones along the way to becoming technology leader, and how does the company see itself today?

Dr. R. Lenggenhager: Here is, as an example, the PT 1200, with which Mettler Instrumente AG marked the start of the electronic age in 1973. It was the first electronic precision balance that was approved for the higher weight category (Class I). Today, there are still over 100,000 balances of the AE Series in daily use, introduced in 1982 as the first fully electronic analytical balance.

After purchasing the American industrial balance manufacturer Toledo Scale Corporation in 1989, a larger company was formed that extended its product range into the high kilogramme and tonne area. The ongoing innovative activity brought out a wealth of laboratory appliances - including titration automation and thermal analysis machines – as well as a multitude of products for industry. Today, the company has a broad product portfolio and delivers comprehensive solutions for the laboratory, industry and retail. The fact that some people from the early days still work in the research and development area is testimony to continuous innovative performance.

What are the medium-term strategic priorities?

Dr. R. Lenggenhager: We concentrate on our core businesses, those in which we are strong and we want to establish our product lines in the market. Because we orient ourselves strongly around user requirements, we also develop completely new areas. Being able to directly support the customer process, as well as generating additional value, is decisive for the development of new solutions. Here, the expertise of our sales and service department – the largest in the sector - plays an important role. Half of the staff members are involved in world-wide sales and service. We offer complete solutions.

You consider being close to the customer as a crucial success factor. What values are in the foreground for the user?

Dr. R. Lenggenhager: Our instruments contribute to optimising processes, both in the laboratory as well as in industry and commerce. It is worth identifying the customer's actual requirements and realising a solution focused on these – a solution that contributes towards increasing efficiency for the customer over the long-term. We achieve this by providing easier operability, higher quality and precision of results. User safety and durability are also central topics - our entire product portfolio can be summed up as simple, more efficient and safer.

Mr. Gietenbruch, the Quantos dosing system is an example of successful innovative performance. Your company found a “new to the world” solution, which was awarded the “New Product Award” by the Association of Laboratory Automation. What can this product do?

M. Gietenbruch: The QM system is internationally the first bench-top system for the automated dosing of the smallest quantities of powders. The traditional weighing out of substances using a spatula is now a thing of the past and the laboratory technician saves hours of manual weighing. It offers a unique measuring performance of 200 g at a precision of 0.005 mg. The integrated balance controls and monitors the entire dosing process, so that compliance with the international standards is guaranteed.

How did the idea for this product development come about?

M. Gietenbruch: The driving force was the knowledge that this market is saturated and that growth is only possible with new ideas. It was also the fundamental goal of our personnel to develop something based on our core competence, to generate something new and thereby promote the business. We have advanced weighing by a further process step. The correct quality is crucial here. Once an error occurs in a process chain, it will remain throughout and render the result useless. We enjoy close relationships with our customers, pointing out where the risks lie and advising him accordingly.



Dr. René Lenggenhager

General Manager Mettler-Toledo AG,
Laboratory & Weighing Technologies



Matthias Gietenbruch

Manager Business Development, Quantos,
Mettler-Toledo AG,
Laboratory & Weighing Technologies

How has the system since been developed?

M. Gietenbruch: Since the first step of successfully launching the automatic powder dosing machine onto the market, more than 60 % of the leading pharmaceutical companies have already decided to adopt the system. This was then followed by the second step involving the automatic dosing of liquids. The system offers the possibility of automatically producing precise concentrations for standard and sample solutions, i.e. at the push of a button. The principle of gravimetric dosing of solvents brings with it a saving of up to 90 % of the expensive substances. The work of the laboratory user is considerably better and safer.

Further development steps are additional Quantos modules, which will upgrade analytical balances to bring them up to the state of the art.

What role do people play in the development of a product?

M. Gietenbruch: Quantos proves that we have automated part of a manual process to benefit the user, and have helped to save time and reduce the danger of contamination. It is people who work in the laboratory, which is why they are at the centre of our research. We want to make a contribution to the safety of the staff in chemical and pharmaceutical research, as well as in other industries.

How do you strengthen the developmental work of your company and what role does the university sector play here?

Dr. R. Lenggenhager: Our company culture places innovation at the forefront. We are developing our position as market leader in a targeted manner, in order to be able to provide optimal support for our customers during the optimisation of their processes. We are investing large sums in product development and have development centres that provide expertise for innovative processes.

We are already working together with research facilities. At Quantos, for example, we have developed particular disciplines together with universities. Our specialist areas are mechanics, electronics and software. It is important for us to work together with the right partners, who bring competence from other areas such as chemistry, for example. In the same vein, we are collaborating with our customers' test laboratories and other institutions. Our customers are often amazed by our extensive tests and trials.

(Jörg-Peter Matthes, succidia AG and Claudia Schiller conducted the interview for q&more.)

