

TELEMIS & DUISBURG : Digitizing a pathology institute?

The example of the MVZ Niederrhein in Duisburg



The team at MVZ Niederrhein in Duisburg — the first German Telemis partner in digital pathology.

The classical microscope is no longer the sole ruler of the laboratory. Everyone is talking about digitization today. But what does this shift actually mean for pathology? The leap into practice often fails in theory.

The MVZ Niederrhein in Duisburg leads the way and proves: Those who digitize today secure their competitiveness for tomorrow.

The Digital Quantum Leap

The Duisburg institute consistently pursued this path as the first German Telemis partner. The centerpiece? An Image Management System (IMS) that radically simplifies workflows. In this article, we show you how the transition truly succeeds: without sugarcoating, with real solutions for obstacles, and with a clear compass for everyone ready for the digital quantum leap.

Dr. Mühleisen, Medical Director of the Institute, describes his strategic and medical vision as follows: *“For me, full digitization was a decisive reason to move to this institute in Duisburg. If we as pathologists want to remain modern and leverage the latest medical methods, we must be digitalized. All future-oriented developments — from computer-assisted precision diagnostics to flexible workplace models like working from home — rely on this digital core. It is not just about replacing the microscope with a screen, but about opening up completely new dimensions of patient safety and peer collaboration.”*

Why was now the right time to take the step into digitization?

The drivers of change in the healthcare sector are unmistakable: a continuously growing case volume, an increasing shortage of pathologists, and the need to coordinate diagnoses across locations without delay. Analog processes — such as sending physical glass slides by mail for second opinions — are reaching their limits in networked medicine. Digitization is no longer an optional innovation project, but a fundamental prerequisite for future-proof diagnostics and a modern workplace culture that makes the decisive difference in attracting skilled talent.

For the Duisburg laboratory, a largely digital workflow from slide preparation to medical reporting was also a strategic magnet for top talent. New key technologies such as artificial intelligence (AI) can only be meaningfully implemented once image data is available digitally.

What were the greatest technical and human challenges during the transition?

The transition to digital pathology is far more than simply purchasing high-performance scanners. It requires profound change management and strict standardization of pre-analytical processes.

A scanner forgives no mistakes: Crooked barcode labels, tissue pieces outside the focal area, or stain residue on the glass slide inevitably lead to scanning errors.

Furthermore, it was essential to build physicians’ trust in digital image quality. Particularly in semiquantitative immunohistochemical evaluations, such as for HER2 or PD-L1, initial questions arose regarding standardized representation and diagnostic comparability on screen. Another important aspect in favor of the partnership: The laboratory had to obtain official DAkkS accreditation to use the IMS solution for digital diagnostics. Through meticulous validation processes and the targeted selection of the IMS partner, this hurdle was successfully overcome. The team consciously decided against rigid monolithic systems and chose Telemis as an agile partner.

Digital image quality

Johanna Wezgowiec, Institute Manager and driving force behind the implementation, emphasizes the organizational focus: *“Digitization does not start at the scanner. The key is that the entire process — from sample reception to slide preparation and medical reporting — is clearly defined and structured as consistently as possible. To achieve this, we had to adjust technical workflows, set standards, and above all, involve the whole team early on. A special challenge was reliably connecting the Image Management System to our Laboratory Information System. In Telemis, we found a partner who listened to our requirements and developed practical solutions together with us. A sufficiently long and clearly structured transition phase was also important. Only after the workflows were validated and the team gained confidence did digital reporting become the standard in daily routine.”*

How has daily life for the lab team changed specifically?

The departure from the analog workplace toward screen diagnostics fundamentally revolutionized daily lab routines. Previously, medical technical assistants had to sort, transport, and manually archive hundreds of physical trays with glass slides every day. A misfiled slide often resulted in hours-long searches across the entire institute.

Today, the slides are loaded directly into the scanner. The Telemis IMS, connected to the LIS, handles automatic case compilation. Physicians see in real time in their digital inbox as soon as a case is fully available. Beyond the enormous logistical relief, the team benefits above all

from significantly improved ergonomics — spending hours motionless at a microscope is a thing of the past. In addition, the digital infrastructure enables location-independent working, which has drastically improved work-life balance.

Nadine Krompholz, Deputy Institute Manager, reports from the lab team's perspective: *"In the beginning, there were naturally fears of delays in report turnaround times. But the opposite happened. We used to search for misplaced blocks in the archive in the evening — today, digital workflow management ensures nothing gets lost. For the doctors, daily work has become much more relaxed: They no longer have to carry heavy trays and can process cases flexibly on screen — when needed, even from home, which helps us tremendously in recruiting new colleagues. The partnership with Telemis was a stroke of luck. Our requests are heard and flow into development, instead of a finished system being forced upon us."*



The MVZ Niederrhein institute in Duisburg — starting point of a German pioneer project.

What key lessons do you draw for laboratories that are still hesitating?

Valuable lessons can be drawn from the experiences of the Duisburg pioneer project for other institutes:

Optimize processes before technology

Standardize pre-analytical steps (e.g., error-free barcodes, optimal coverslipping) before putting scanners into operation.

Proceed step by step and address fears

Start with smaller case volumes. Give physicians the opportunity to double-check diagnoses (at the microscope and on screen) during a transition phase to build confidence.

Actively involve users

Do not purchase a system over the heads of doctors and MTAs. The usability of the IMS is the decisive factor for acceptance. The Duisburg doctors chose Telemis themselves because it was the most intuitive.

Rely on agile, open partners

Choose software partners who flexibly address individual workflow needs and support customizations (such as shortcut assignments for macro keyboards or voice control).

Dr. Mühleisen draws a clear conclusion for hesitating colleagues: *“The fear that digital reporting is slower than looking through the microscope is unfounded. Thanks to the seamless interaction between Telemis and our LIS, we are significantly faster today. We no longer have to search for slides and can switch between cuts with a single click. Anyone still hesitating today will lose touch with modern medicine. Digital pathology is not a threat, but the most powerful tool we have ever had.”*

An inspiring outlook on the future of digital pathology

The successful digitization of the institute in Duisburg with Telemis is not an endpoint, but the foundation for the next evolutionary stage. The view into the future promises groundbreaking developments: The integration of intelligent AI algorithms for automated pre-sorting of tissue sections is imminent.

In the long term, so-called “AI Agents” will monitor administrative and medical processes in the background — comparing prior findings, checking billing codes, and minimizing human error rates as digital safety instances. The path there requires courage to change and investment in technology and mindsets. But the experience in Duisburg proves: Daring to take the step into digitization means combining working comfort for the team with diagnostic excellence for patients.

Thank You!

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