



“Transitioning our workflow to digital processes shows our commitment to ensuring our patients and clinical colleagues receive the fastest and best-informed diagnoses possible.”

Herman Peters - Pathologist, LabPON

Customer

Laboratory Pathology East
Netherlands (LabPON), Hengelo,
The Netherlands

Challenge

- Expected surge in demand for histopathology services as population ages
- Need for more efficiency while maintaining quality of service

Solution

Full digitization of pathology workflows with Philips IntelliSite Pathology

Results

- 19 working hours can be saved per day¹
- Easier and faster collaboration across sites and specialists
- Ability to offer remote consultation as an external service

How digital pathology can save 19 working hours per day

In 2015, LabPON - one of the largest pathology laboratories in the Netherlands - became the first clinical laboratory in the world to digitize 100 percent of their histology slides for primary diagnosis. Using the Philips IntelliSite Pathology Solution, cases are assessed digitally instead of manually with a microscope.

A study published in Histopathology in 2018 shows that, on average, over 19 working hours at LabPON can be saved on a typical day by working digitally, with the highest savings in routine diagnosis and multi-disciplinary meeting workflows.¹ This is the equivalent of saving 2.63 FTE per day, or 120,000 EUR per year.²

LabPON represents Laboratory Pathology East Netherlands and is located in Hengelo, the Netherlands. LabPON carries out pathological examinations for hospitals and general practices in the region Twente and Achterhoek-East.

Challenge

As one of the largest pathology laboratories in the Netherlands, LabPON is consulted on more than 54,000 histological cases each year, which translates to more than 300,000 slides of human tissue. Each of these slides needs to be prepared, analyzed, diagnosed, reported and archived.

"There's likely to be a steep increase in future demand for our services, driven by the aging population and new screening programs, so we concluded that we needed a further increase in efficiency that still allowed us to maintain quality," says Herman Peters, pathologist at LabPON.³

"It was our lab's participation in a digital network project in 2009 that yielded the answer - after trialing it, we decided to transition all of our manual diagnoses to digital."

Solution

In 2015, LabPON became the first clinical pathology laboratory in the world to transition completely to digital diagnosis. Using the Philips IntelliSite Pathology Solution, all clinical histology cases are assessed and diagnosed on computer monitors, instead of manually with a microscope.

This successful transition was the result of a structured change management approach that involved all 17 pathologists at LabPON to ensure full digital adoption. "Adoption generally took between three and eight months," Herman Peters recounts. "For our pathologists, the most difficult part of the transition was learning to trust the digital image. Once they realized that the image on the screen was just as valuable - if not more so - than what they could see through the microscope, acceptance was quick."

Results

Improved workflow efficiency has been a key result for LabPON. To compare time spent between the traditional analog and new digital workflows, Alexi Baidoshvili and a team of researchers conducted a study which was published in *Histopathology* in 2018. The study shows that on average over 19 working hours at LabPON can be saved on a typical day by working digitally, with the highest savings in routine diagnosis and multi-disciplinary meeting workflows.¹ This is the equivalent of saving 2.63 FTE per day, or 120,000 EUR per year.²

Herman Peters is particularly pleased with how digital images enable multidisciplinary meetings with remote consultation. "We can now discuss cases on the spot over the phone, since slides no longer need to be physically retrieved from the archives and transported by mail first. Time gains in the clinical trajectory can save patients stress and potentially improve outcomes."

LabPON is also partnering with two other major labs in the Netherlands - University Medical Center Groningen and Isala Klinieken in Zwolle - to form a virtual network that allows

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49 pathologists to collaborate more easily and quickly by sharing cases in a secured way and setting up direct consultations. A validation study based on 90 scanned cases demonstrates that such teleconsultation networks may contribute to faster revision and consultation while maintaining diagnostic standards.⁴

"Our digital laboratory is a source of great pride to us," Herman Peters concludes. "It strengthens our commitment to ensuring that our patients and clinical colleagues receive the fastest and best-informed diagnoses possible."

As a next step, Philips and LabPON plan to create the world's largest pathology database of annotated tissue images for deep learning. The database will provide pathologists with a wealth of clinical information for the development of image analytics algorithms for computational pathology and pathology education, while promoting research and discovery to develop new insights for disease assessment.

19 working hours can
be saved per day
through fully digitized
workflows¹



1. Baidoshvili, A., Bucur, A., Van Leeuwen, J., Van der Laak, J., Kluin, P., & Van Diest, P.J. (2018). Evaluating the benefits of digital pathology implementation: time savings in laboratory logistics. *Histopathology*, 73(5), 784-794.
2. Estimated cost savings based on conversion of FTE savings at LabPON.
3. Baidoshvili, A. (2015). Making the move to 100 percent digital. *The Pathologist*.
4. Baidoshvili, A., Stathonikos, N., Freling, G., Bart, J., 't Hart, N., Van der Laak, J., Doff, J., Van der Vegt, B., Kluin, P.M., & Van Diest, P.J. (2018). Validation of a whole-slide image-based teleconsultation network. *Histopathology*, 73(5), 777-783.

