

EBOOK

# TRANSFORMING YOUR LAB *AFTER* COVID-19



# THE *IMPACT* OF COVID-19 ON CLINICAL LABS

In 2020, laboratories went from being something the general public didn't really think about to being all over the news.

Lab performance became a hot topic overnight as labs around the world put a joint effort into combatting COVID-19.

It was suddenly vital to optimize lab performance fast. But many labs were not ready to scale up their capacity and adjust their workflows as efficiently as was needed.

And so, they turned to automation to perform common tasks, like pipetting. As a result, a large number of scientists and lab technicians learned to use robots – and perhaps realized that it is easier than they expected.

While it emerged out of necessity, it was arguably an invaluable factor in dealing with the pandemic, and lab automation

proved its worth in small as well as large high-throughput labs.

In many ways, the COVID-19 pandemic not only set a precedent for what labs need to live up to, but also laid a solid foundation for what is possible as they rose to the challenge. Consequently, COVID-19 has fundamentally changed how life-science companies and clinical labs operate.

So how do you transform your lab after COVID-19 and bring automation effectively into your future endeavors?

**ON NEXT  
PAGES**

The big transformation

# WHAT'S NEXT – THE BIG TRANSFORMATION

“Transformation” means going beyond your usual form – you cannot go backwards, and you will be permanently changed.

That’s pretty much what happened to many labs in 2020 as they went above and beyond – even with odds against them such as staff shortage and increased hybrid work.

However, the need for COVID-19 testing has become less urgent – at least for the time being – and lots of labs are re-grouping to tackle other diseases and develop tests and vaccines for other things.

Of course, it isn’t ideal to have your expensive instruments standing in a corner while you move on to new protocols and perform them manually.

And, so, it becomes tempting to ask:

- Was it even worth it?
- Should I do things differently now?

The short answers are:

Yes! It most certainly is worth it.

You never know what the future holds. And when push comes to shove, it is definitely worth staying agile and ready to scale up. Embracing new technologies and automation is an important part of that.

Yes! You should re-use it now.

All labs are different and must find their own way. But some instruments will be applicable for re-use – you just need to find the right ones.

And, so, it has never been more important to choose the right automation solution. This can be tricky to navigate as the market expands.

Here’s what you need to look for if you want to own lab equipment that will last:

## Flexibility

Flexibility is paramount for re-purposing and transforming your lab.

Without a flexible robot it could become very expensive, difficult, or perhaps even not worth the trouble.

## User-friendliness

User-friendliness will save you from going through an often very expensive and long re-programming process. In short, it will make you less dependent on your provider.



## Are you already the owner of an easy-to-use and flexible solution?

Great!

Many applications are spot on fits for automation and now you just have to adjust it to your current lab processes. These could be:

### PCR & qPCR

PCR and qPCR can be easily automated and are widely used for everything from diagnostics to research projects and quality control. It is a spot-on fit for automated liquid handling and super simple to set up across different applications.

### Next Generation Sequencing

The NGS pipeline has a large number of pipetting tasks, including several washing steps. In fact, it takes around 300 pipetting moves per 96 well plate if you are using an 8 channel pipette and 2500 if you are using a single channel. If you own a flexible robot, you can re-use it for your NGS protocol.

### ELISA

ELISA preparation is another application that is already being automated. And just

like NGS, a flexible robot will allow you to adjust your ELISA preparation workflow so you can use it for many different protocols.

They are of course just a few examples.

Contact your robotics provider to see how your specific workflow can be adjusted to fit your old robots. And – as a sidenote – make sure to choose a robotics provider with a great customer service so you will get the needed help.

In conclusion, being able to go through the big transformation means choosing something flexible and user-friendly that doesn't end up in a corner.

And welcome to lab 4.0 – the land of fully automated workflows and integrations.



# ON NEXT PAGES

The power of integration

# THE POWER OF INTEGRATION

Collaborations and partnerships proved key to coming up with new solutions when developing COVID-19 vaccines and -tests. This allowed companies to be more versatile in the application of advanced technology.

We are seeing more strategic partnerships between different robotics developers with the goal of e.g., providing end-to-end automation systems. When you link multiple automation

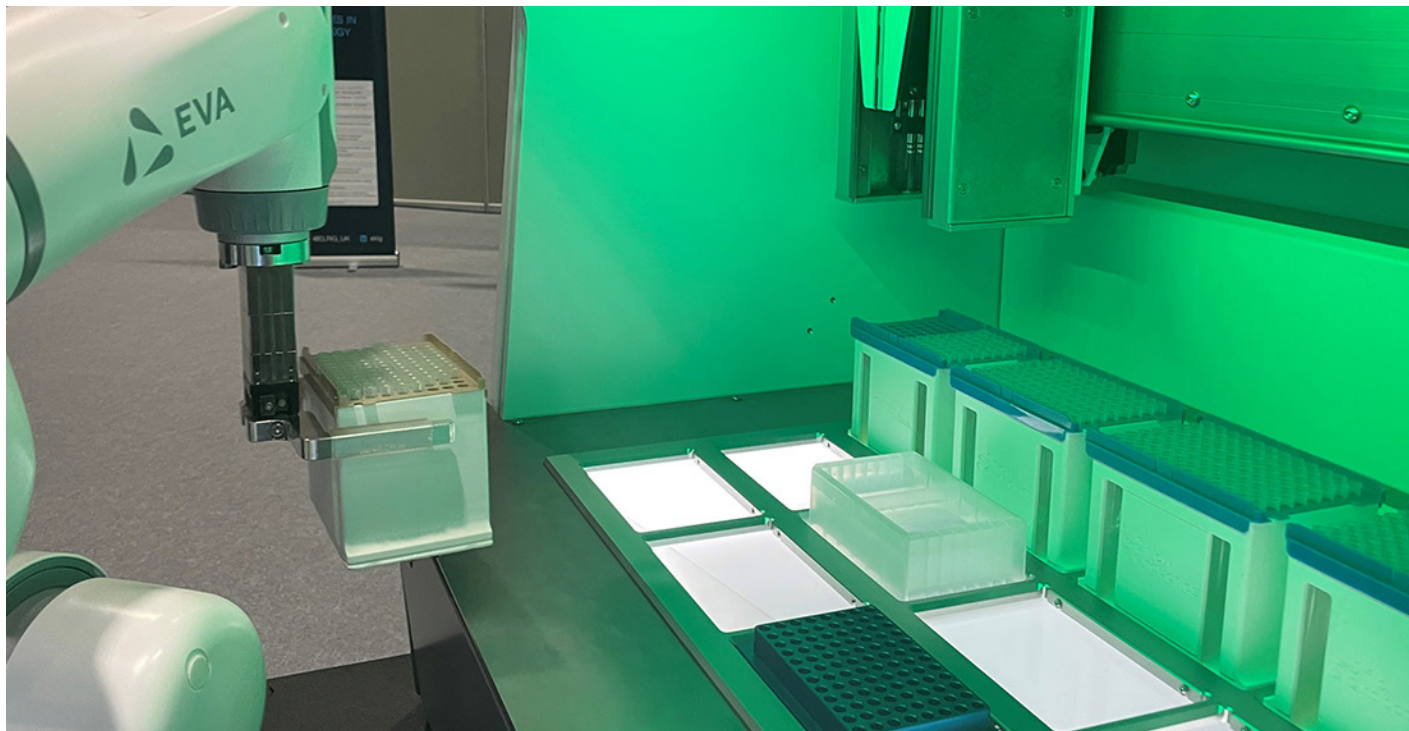
technologies, you can automate entire workflows in the lab. This gives you a lot of freedom to find what works best for you and change it up as your workflow evolves.

Having an integration with a liquid handler and a robot arm is an example hereof. It will free up as much time as possible, can be used in many different applications, and adjusted easily.

However, some systems are easier to integrate and repurpose when transforming a lab. Traditional rigid machines might limit you, whereas flexible stand-alone units can become your best friend – or, at least, your favorite co-worker.

The flexibility to adjust to new workflows and protocols, that integrating different systems makes possible, is dependent on instruments that do not require heavy re-coding and involvement of super-users.

And having instruments with an open and simple API can become paramount to a smooth transition and easy implementation.



## ON NEXT PAGES

How Uppsala University has build their integration

# UTILIZING A SIMPLE API

Uppsala University is a shining example of how a smooth integration empowers your lab to become agile and adaptable. Their solution? The super simple and open API of the flowbot® ONE.

They have created a unique integration to fully automate the workflows for cell-culturing projects. The integration consists of the pipetting robot, flowbot® ONE, a robot arm that places and removes multi well plates to and from the flowbot® ONE, and a digital microscope that performs automated imaging.

Thus, integrations enable you to reuse your instruments and switch between different protocols in a smooth and simple manner – thereby future-proofing your lab.

But, as we have seen, it all comes down to whether robot vendors can offer the flexibility and user-friendliness needed for modular setups.



The flowbot® ONE was definitely the easiest instrument to integrate because of its very simple API. It works flawlessly in collaboration with a robot arm.

Rikard Nyström, MSc lecturer  
Uppsala University.

# WHAT ROBOT VENDORS MUST LIVE UP TO

It is no longer a matter of 'if automation will become mainstream' but rather a question of 'how soon?'

This will depend highly on whether robot vendors are able to provide what the labs need to run a smooth setup.

## Easily accessible technology

First and foremost, it is fundamental that robots are easily accessible and affordable. That means no difficult software or other things that require a programmer or super-user. It also means that robot vendors must offer affordable options so even small labs can be part of this new era.

Fortunately, with today's technology, there is really no reason why automation should be hard to use or crazy expensive, and many are already providing very good solutions.

Flexible robots that can easily adjust to different protocols are also fundamental

– whether it is for re-using them immediately or staying prepared for a new unforeseen crisis that will require you to scale up.

Heavy machines, on the other hand, could be bottle necks that prevent small labs from utilizing automation and large high-throughput labs from adjusting their workflows when needed.

It might in fact be more beneficial for high-throughput labs to use several smaller robots instead. After all, everything we have learned over the last few years points to the fact that simplicity is a prerequisite for future proofing.

## Training and service

However easy the system is to use; it is essential to get service and training.

Therefore, make sure to choose a robotics vendor that has a dedicated and excellent customer service.

A good technology partner will offer hands-on coaching, help you set up your protocol onsite, and provide immediate assistance by a designated contact person if you should need a helping hand.

Human relationships go a long way within the world of robots. Choose to partner up with an automation provider you feel you can rely on. This will help you take the jump into unfamiliar territory and trust the process.

# GET A DEMO

The best way to get all your questions answered is to book a demo - do it today

# ANNA'S TOP 4 ADVICE FOR REPURPOSING

Getting the right training and training the right people is also instrumental – even with easy systems that do not require super-users.

The flowbot® ONE became a solution for many during the COVID-19 pandemic and helped labs across the world scale up and meet the testing demand.

Now we are helping many of those labs with repurposing it for other applications.

Here are Anna Vejlin's, our customer relation specialist, top 4 advice for repurposing liquid handlers like the flowbot® ONE:

## 1 Keep an open mind

It is important, when repurposing laboratory instruments, to try and think outside the box. Ask yourself if your device can be used in a different workflow or application than previously.

## 2 Consider modular setups

With modular setups, your workflow is more agile and ready to scale up as your company grows. A modular setup also makes you less sensitive to breakdowns.

## 3 Collaborations are in!

Often you don't need a fully automated workflow, and companies are starting to focus more on collaborations – making it easier as an end-user.

## 4 Reach out to other departments

Go Green! If you have exhausted all options for repurposing it yourself, why not make a colleague happy instead and let them borrow the equipment. Alternatively, reselling lab equipment is often also an option.

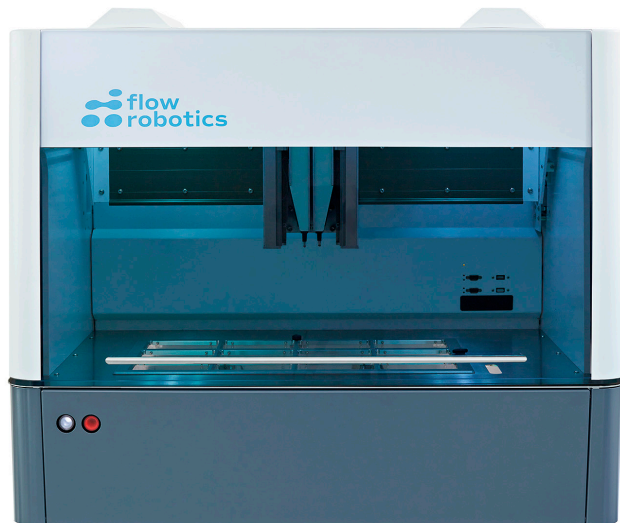




# TRANSFORM AND PERFORM WITH FLOWBOT® ONE

It's safe to conclude that easy and flexible automation is the key to transforming your lab from COVID-19.

Around 10 years ago, a Danish robotics professor asked himself the question: why are companies making automation harder than it should be?



And then he developed the pipetting robot, flowbot® ONE, to offer another option: an easy-to-use and flexible robot that can stand alone or be part of a modular setup.

Today that robot is assisting laboratory staff across the world with a wide range of applications and protocols.

It is a simple 12 position plug & play solution that is developed for immediate adjustment and doesn't require a programmer or super-user.

Its intuitive user interface can be accessed in almost any browser, and whenever a procedure changes in your lab there is no need for complicated programming.

This makes it ideal for transforming your lab and taking it to the next level.

## OTHER RESSOURCES FOR YOUR NEXT AUTOMATION JOURNEY



GET A FREE,  
NO-STRINGS-ATTACHED  
DEMO



SIGN UP FOR  
A WEBINAR TO LEARN  
HOW TO REPURPOSE  
YOUR LAB AUTOMATION



GET APPLICATION  
SUPPORT FOR SETTING  
UP NEW PROTOCOLS