Ireland Where Digital Health Thrives

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Reimagining pharma with digital transformation

Lorcan Walsh, Director of Data Science and ad interim Digital Solution Director for Digital Endpoints at the Novartis Global Service Centre in Dublin, and Ashwini Mathur, Solution Lead and Head of Data Science and Artificial Intelligence Hub Dublin at Novartis Ireland, speak about how digital technologies and innovative sciences can improve and extend people's lives.

Leading global medicines company Novartis has a mission to use new digital technologies and innovative sciences, to create transformative medicines that address the evolving needs of society.

The company's products – which includes a range of medicines and drugs in areas such as cardiometabolic, immunology and dermatology, neuroscience, ophthalmology, respiratory, oncology and new cell-and-gene therapies – are available in more than 180 countries, reaching nearly one billion people in 2018.

Lorcan Walsh says, "Data and digital are key enablers of Novartis' ambitious transformation to become the leading medicines company powered by data science and digital technologies."

"We are a data rich and data-driven business, for example, over the past two decades we've collected 2 million patient-years of data from our clinical trials. Beyond clinical trials and when patients are using our therapies in clinical practice, we continue to monitor for effectiveness and safety."

However, with new scientific advances in recent years, the ability to analyse huge amounts of data in new ways has become significant, offering new opportunities to improve human health. Lorcan says this is why the company is aiming to "reimagine medicine" and adapt the way data is collected and interpreted.

"To reimagine medicine, we need to reimagine the way we work. This involves combining digital and data, so that we can measure patients better within our clinical trials, reduce the medicine development timeline, and get better therapies to patients faster.

"Digital can also help us collect novel insights in patients' lives to build a better chain of evidence to advance our therapies, reduce patient burden and shorten trial durations. For example, currently within our trials, we collect data including different devices, such as X-rays, biosamples, and information from patients themselves encompassing how a patient feels, functions, or survives. Digital solutions, such as wearable sensors or at-home surveys, are showing more and more potential to gather more sensitive measures and can be gathered at home potentially reducing the need for patients to visit the clinic."

Engaging with patients in the community

This move towards digital can also address the sustainability challenge with structural reforms in healthcare. Technologies can be used to manage patients in their community, rather than in hospital. Lorcan says digital innovation can help healthcare professionals (HCPs) to better engage with the patient and ensure medication is being taken at the right time.

"A patient may have to take 4-5 medications at different times of the day and that can be difficult and confusing. So, we've been developing apps to improve medication adherence.

Partnership with various companies is important in the process of bringing a new medicine to market. Ashwini Mathur says, "We develop medications for all stages of the patient care continuum. However, as we are not a medical device company, we focus on how we can partner with other players in the ecosystem, to be able to get medications to patients quickly.

"So when a device is being used by a patient, we look at analysing the data from the device, to create a medication which could be useful for patients."

Partnering with tech giants

As part of rreimagining treatment discovery and development, Novartis recently announced a five-year partnership with software giant Microsoft.

"We are exploring how Microsoft's artificial intelligence (AI) technology can help Novartis interpret huge amounts of data and accelerate research into new treatments. These include cancer and age-related macular degeneration," says Ashwini.

"Previously, Novartis and Microsoft would do things independently of each other and then interact with each other at a stage when it seemed appropriate. But now, we are tackling problems together right from the beginning, and then actually creating a solution and implementing it together."

Ashwini adds, "In this collaboration, we work through virtual teams globally. Novartis has set up teams in Cambridge, US and at the Novartis Global Service Centre in Dublin, where we are based. Microsoft has teams in Seattle and Cambridge, UK."

Ireland's attraction

The Novartis Global Service Centre in Dublin, which is one of five around the world, has scaled rapidly since it was first established in Ireland in 2013. Ashwini says there are many advantages to being located in Ireland. "Ireland has the same time zone as the headquarters in Basel, but Ireland is also accessible to Asia and the US.

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“Ireland also has the advantage of being an English-speaking country too. And a benefit is the digital health infrastructure that exists in Ireland. This goes for both the academic setting and the corporate setting. There are niche companies doing cutting-edge digital health work. Then, there is very significant research happening within academia, which we, at Novartis, engage with.”

Lorcan adds, “We have a highly skilled and educated workforce around digital health. 20% of the people on-site in our Dublin centre have PhDs and two-thirds have a Masters.”

Tackling Covid-19

During the recent pandemic, Novartis in Dublin and Cork played a key role, donating funding for Personal Protective Equipment (PPE), contributing to research efforts, and keeping up with the medication supply that was needed.

With one of Novartis’ main aims being to better manage patients at home, Lorcan says the recent pandemic has, in fact, brought about opportunities for digital health. “Covid-19 has created a strong need to avoid face-to-face interactions. For example, how often will we now meet our GPs face to face? Videoconferencing is going to start playing a greater and greater role.

“During lockdown, we’ve also been very active in creating new models to engage and upskill HCPs in our novel medications through virtual means.”

Don’t just take Lorcan and Ashwini’s word for it, the statistics say it all too – in recent Novartis research, 86% of tech professionals agree the healthcare and pharma industry’s ‘digital moment’ has arrived.

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Ibec Head Office
84/86 Lower Baggot Street,
Dublin 2.
T: + 353 1 605 1500
E: membership@Ibec.ie
www.Ibec.ie/membership

Galway
Ross House,
Victoria Place,
Galway.
T: + 353 91 561109
E: galway@Ibec.ie
www.Ibec.ie/west

Cork
Knockrea House,
Douglas Road,
Cork.
T: + 353 21 4295511
E: cork@Ibec.ie
www.Ibec.ie/cork

Limerick
Gardner House Bank Place,
Charlotte Quay,
Limerick.
T: + 353 61 410411
E: midwest@Ibec.ie
www.Ibec.ie/midwest

Donegal
3rd Floor,
Pier One Quay Street,
Donegal Town, Donegal.
T: + 353 74 9722474
E: northwest@Ibec.ie
www.Ibec.ie/northwest

Waterford
Waterford Business Park
Cork Road
Waterford
T: + 353 51 331260
E: southeast@Ibec.ie
www.Ibec.ie/southeast

Brussels
Avenue de Cortenbergh, 89,
Box 2,
B-1000 Brussels,
Belgium.
T: + 32 (0)2 512.33.33
E: europe@Ibec.ie
www.Ibec.ie/europe