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CITELINE COMMERCIAL

12 Apr 2023 | **Analysis**

‘Fail Quickly, Succeed Quickly’ – BioWales Profiles Value Proposition For Medtech Innovation

Plethora Of Strategy Documents And Inclusive Culture To Support Industry’s Growth

by Ashley Yeo

New policy initiatives and “can do” networking openness in Wales are persuading medtech and healthtech innovators to consider the merits of locating in Great Britain’s smallest home nation.

BioWales in London 2023, the showcase for Welsh expertise in health care products and a signposting event for medtech innovators seeking funding and networking support, faced tough local competition for attendees on 14 March.

Although rival conferences threatened to lure healthtech and medtech delegates elsewhere, BioWales organizer MediWales secured over 250 technology developers, funders, business executives and policymakers at its PwC-hosted event. Prevention, the digital opportunity and embedding genomics were among the top agenda themes.

The Welsh life sciences sector finds itself in transition, with the national industry’s 360 companies and 12,000 employees needing to respond to a changed and challenging post-COVID and post-Brexit environment. The devolved Welsh government’s policy makers and RD&I departments recognize this.

New learnings from the pandemic were published in 2021 in NHS Wales’ *COVID-19 Innovation and Transformation Study*. The report concluded that innovation can solve system pressures by treating patients in their own homes, supporting greater access treatment, tackling patient backlogs and developing sustainable services.

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The BioWales program posed key market access questions emerging from the current challenges. Government chief scientific advisor Rob Orford, the Development Bank of Wales' Richard Thompson, company founders and CEOs, NHS healthcare managers, investment partners and other stakeholders suggested some of the answers for local medtechs and healthtechs.

The common denominator of each presentation and discussion was how to facilitate and maximize innovation. Raising awareness of this was the prime task of Thomas James, the Welsh government's head of innovation and technology.

James reminded delegates of the findings of the Reid review of innovation and government funded research. Published in 2018, the report concluded that Wales must set out a clear policy on the replacement of EU structural funding for research and innovation.

The loss of EU funding for RD&I in Wales, post-EU, is very significant, James said. PwC offers a partial solution via its Cardiff Capital Region Innovation Fund.

New Strategy To Improve Outputs Of Healthcare Ecosystem

In the post-Brexit era, Wales' devolved healthcare system must learn how to provide services differently, he continued. A new *innovation strategy* issued by the Welsh government in February 2023 is designed to bring some much-needed order "to a cluttered landscape."

The innovation strategy's key pillar is "health and well-being." It takes further the ideas presented in the 2015 Well-Being of Future Generations Act, which committed the Welsh government to look at resilience and innovation as part of the planning process.

The strategy's stated mission in health and wellbeing is to foster an innovation ecosystem where the health and social care sector can collaborate with industry, academia and the third sector to deliver value for citizens, the economy and the environment.

It will lay the ground for targeting new and different ways of working; identify opportunities to bring additional value to patients; lever additional funding; and better support the adoption of innovation at scale. In the shorter term, NHS Wales and social care will be supported in delivering pandemic recovery strategies.

"As part of the strategy we're committed to a much more coherent model of aligning innovation pull with innovation push," James said. The product of these efforts should be a "clear system offer that meets a system need in the NHS."

A £14m ($17.40m) Innovation Technology Partnerships Program (ITPP) will support interventions on the push side. The social care regulator and service improvement body, Social Care Wales, will make the most of opportunities to support push and pull initiatives and adapt

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them for social care.

A single portal to access health and care innovation funding will be developed. It will also feature mechanisms for innovative procurement. Funding will be realigned to match evolving innovation needs as part of a generally more strategic approach to financing innovation.

The national technology evaluation body, Health Technology Wales, will further develop its horizon-scanning and health technology assessment function by targeting new technologies across health and social care. This work will complement the National Institute for Health and Care Excellence (NICE)/Medicines and Healthcare products Regulatory Agency's in-development Innovative Devices Access Pathway (IDAP).

Value-Based Healthcare Back On The Agenda

"We need to demonstrate that innovation adds clearer value, in terms of system efficiency," James told the BioWales audience. Involving Welsh patients in the design and delivery of innovation and new ways of working is expected to lead to better health outcomes across health and social care.

The NHS Executive for Wales will be given a specific value and innovation function, which will include oversight of the adoption of value-based healthcare (VBHC) and innovation.

Meanwhile, the new innovation strategy will use VBHC metrics to measure the health and social care impact of innovation activity and improve resource efficiency. The metrics are patient reported outcome measures (PROMS) and patient reported experience measures (PREMS).

James said: "Our innovation agenda must balance priorities in areas such as preventative health, diagnostics, reducing waiting lists and transforming services to address mental health."

A Different Look A Historic Models of Care

The next stage is the development of implementation plans for individual actions, Orford said. He added: "It takes a lot of actors to make an innovation ecosystem."

Wales' health department has drawn up its own roadmap. "Healthier Wales" focuses on moving people out of secondary care and towards at-home care, detecting disease earlier and developing methods of managing care for an aging population with an aging work force.

A Digital Health and Social Care Strategy for Wales is also being developed to accelerate the roadmap's aims.

The unfolding situation in Welsh healthcare requires a "different look at historic models of care," Orford said. The need to be disruptive extends to diagnostics, where Wales has particular

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strengths. Soon to be published is a diagnostics strategy that emulates the diagnostics plan being developed by NHS England.

Genomics And Other 'Shining Examples'

Health and Care Research Wales, which brings together NHS in Wales, local authorities, universities, research institutions and the third sector, is also developing a three-year plan. This will be followed by an industrial engagement plan to pursue and support a "competitive best of breed approach in Wales," majoring on "the shining examples" of dementia, mental health data and genomics.

The SAIL Databank hosted by Swansea university will play a central role in funnelling trusted health data into the research environment and for use by policymakers. Genomics Partnership Wales has recently published its second *genomics implementation plan*.

An initiative to bring all genomics activities together is the development of a new life sciences R&D site at Cardiff Edge, to the north of the Welsh capital. The intention that industry and academia will be attracted to its serviced lab space and offices. Trusted partnerships will enable deeper genomic and proteomic research, said Orford, noting however that such things all take time.

Joseph Connor explained that his company, Careful AI, set up in Newport because of the relative ease of developing and using AI and machine learning for healthcare purposes in Wales. Interest in AI is growing at National Health Service level, he said, but stressed that data science will not solve healthcare's problems and needs unless clinicians are involved in the decision-making.

That understanding shaped his approach to developing Careful AI's Pridar technology. Pridar is a program that prioritizes effective deployment of AI in healthcare by considering conformity to design, deployment, market feedback and assurance best practice. The development process involved the company meeting clinicians at Aneurin Bevin University Health Board. There, Connor found an openness and directness rare among healthcare systems in the UK and even further afield.

"In Wales, things get done," Connor, Careful AI's CEO, said. He continued: "AI firms come to make things in Wales because [people in] the innovation network all know each other." It is a close-knit community, which means there is an opportunity for swift decisions and action. "Failing quickly and being successful quickly is possible because of the network of people." People talk to each other to make things happen, and not just in AI, he said.

JIVA.AI's Manish Patel was similarly enthusiastic about NHS Wales as "a good environment to work in and a great place to start." The NHS England journey by contrast takes longer, while access to talent in Wales is quick and more cost effective, Patel considered. The HTA process in

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Wales takes a relatively short 12-18 months.

One of the major advantages of working in Wales is that there are champions on the ground ready to take on the risk of working with and opening doors for start-ups, he said. (Also see "*Welsh wish for magic to continue as Life Sciences Hub starts up*" - Medtech Insight, 21 Jul, 2014.)

MediWales is among the innovation platforms offered locally, and many BioWales presenting companies are members of the forum.

JIVA.AI offers a platform for creating a solutions without having to write code. Other Welsh companies showcased at BioWales included: Jellagen (next generation biomaterial for soft tissue repair); Copner Biotech (3D cell culture); Virtus Tech (virtual reality); Cotton Mouton Diagnostics (endotoxin testing); Halo Therapeutics (pan-coronavirus antivirals); Forth With Life (blood testing for biomarker profiles); Afferent Medical Solutions (device-based neuromodulation solutions for the treatment of circulatory system diseases); Imspex Diagnostics (non-invasive testing of breath); Digostics (diabetes home testing); BioPhys (technology); Bloom Standard (self-driving ultrasound for heart and lung conditions in infants); Llusern Scientific (POC molecular diagnostics); MeOmics Precision Medicine (Cardiff University spin-out) and CREO Medical (surgical endoscopy).

CREO Medical's Speedboat Inject technology is the first advanced energy multimodal instrument designed for flexible endoscopy that can deliver both advanced bipolar radiofrequency (RF) and microwave energy from a single device.

The expanding company also offers the Croma advanced energy platform, powered by Kamaptive technology, which combines bipolar RF for precise localized cutting and microwave energy for controlled coagulation delivered through a standard flexible endoscope.

The company has benefited from Welsh government funding, which has helped it grow its team, headquarters and manufacturing base.

A £5m investment in CREO was made by the Development Bank of Wales (DBW) which is an SME institutional investor owned by the Welsh government that makes its own investment decisions—whether in seed, early-stage or growth funding, through to IPO and exit.

Its range of products are debt, equity – including early-stage technology venture investments (of some £8-15m each year), and Angels Invest Wales.

The Development Bank is an experienced co-investor. It is the fifth most active venture capital investor in the UK, said Richard Thompson, the bank's technology ventures senior investment executive.

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Thompson's advice to life sciences companies seeking funding is to raise more than they think they will need while building in some contingency, because funding rounds take time and "everything takes longer and costs more" than anticipated.

They should also focus their funding negotiations on the key commercial points and aim to build a supportive investor syndicate while strengthening it on each round. Companies must also be realistic on valuations, and "have a Plan B—and a Plan C," Thompson said.

JIVA.AI moved from London to Wales after receiving DBW investment.

Playing To Strengths

James advocates that Wales must play to its strengths—particularly notable in diagnostics, regenerative medicine, genomics, mental health and wound healing —while recognizing the challenges it faces.

Wound care is a medical need that has rather low profile despite its high cost to society. In Wales, it accounts for 6% of annual NHS expenditure, which is just below spending on cancer and above spending on obesity – two conditions with much higher profiles, said Sarah Bradbury, the clinical research director of the Welsh Wound Innovation Centre (WWIC).

The not-for-profit WWIC came about in 2013 following recognition that prevention and treatment strategies drive VBHC and that equitable access to specialist services must be assured. The WWIC runs the complex wound NHS service, works with start-ups, delivers advice and advocacy, develops protocols for conducting clinical trials and ethics submissions, and conducts clinical trials.

"Service transformation is what we're about," said Bradbury—a comment that applies as much to the WWIC as to the wider health and social care sector in Wales as it restructures to meet new healthcare demands in the coming decade.

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