ABHI Skills White Paper

1. Engineering

HealthTech is essential to the delivery of modern healthcare today and in the future. A combination of innovative science, engineering and rapid pace of iterative product development has resulted in technology-based medical advances which have significantly improved our lives. We forecast that this will not abate.

The future is one where more surgical procedures are conducted through robotic assistance, custom implants are rapidly designed through 3D printing, and quality of life sustained though the artificial pancreas. To realise this vision requires a workforce which encompasses several engineering fields.

Many formal educational routes and apprenticeships are based around traditional engineering. We need to look at options that are broader, and which incorporate modern engineering practices that include, for example, artificial intelligence, IT and technology.

2. Data Science, Artificial Intelligence, and Machine Learning

The most cited driver of change in the HealthTech sector is [digitisation](#). Developments in, and convergence of, information technology, data access/availability, artificial intelligence (AI) and machine learning are stimulating the next wave of innovations from the sector.

Data is now the driving force of the world's modern economies, fuelling innovation in businesses large and small and digital transformation was a lifeline during the pandemic. Developing and implementing a successful strategy to provide value to health customers through digital solutions, which is integrated into core business, will not be for all HealthTech companies. First-mover advantage by several incumbent companies, together with disruption by new entrants, is shaping and determining the digital health agenda.

There is significant demand for data skills across the economy, and competing for individuals with these expertise will be a key challenge for the HealthTech industry.

Whilst skills are needed, it is essential that people maintain control of AI and have an understanding of its current limitations, and capabilities as it develops. Responsible use and protection of highly sensitive data is a key skill and users must appreciate the need to fact check any data coming from AI tools and verify it via credible sources.

The key skill is creating insights from the data. We are in a data rich environment which can be overwhelming, and the real value is created when the available data is distilled into critical insights to help solve HealthTech issues.

3. Regulatory

The challenge of regulating such a rapidly evolving sector has not gone unnoticed by the HealthTech industry. The regulatory environment in the EU is changing through the introduction of MDR and IVDR, the UK is developing its own sovereign system (UKCA), and the US FDA has published a long-awaited [proposal](#) to overhaul U.S. medical device quality regulation to better align with regulations worldwide.

In this context it is not surprising that addressing a shortfall in regulatory skills is the most pressing issue for industry as it is a moving target.

Companies in the UK can no longer easily transfer talent from EU geographies post-Brexit, both due to having additional employment mobility requirements and the UK formulating its own regulatory framework.

There is a need for courses that explain the regulatory process and technical requirements. Coaching, and linking regulatory knowledge with business solutions to enable the swift approval of innovative HealthTech solutions, is key.

There is demand for flexible apprenticeships to train people, and especially those looking to retrain in this area. The use of secondments, internships and mentorship schemes can be helpful in understanding future regulatory expectations. Ensuring the right training for the right people at the right time, and a need for registered and accredited suppliers to ensure high standards are upheld, can enable this.

4. **Leadership, Communication and Commercial**

With the health service facing unprecedented pressures, and regulatory complexities impacting business planning, leadership skills, especially in the promotion of the digitalisation of the sector, are required.

Given the pace of technological development, there is a need to improve the ability to communicate new advances in science and technology, e.g. more effective use of online and virtual engagement with a customer. Skills for collaborative and matrix relationship management are needed to enhance cross-team and cross-disciplinary working.

We need school leavers and university graduates to have a real vision of what the world of work looks like and the expectations on them as candidates and employees by educating them in commercial skills as well as ideology. Practical work experience through the later years of education is also highly useful.

Recommendations

This requirement is not specific to our industry, but candidates need to understand what is needed of a leader in this complex environment. Consideration should be given to working across generations, with in-person and virtual contact with team members.

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