

Approaching AI: Our travels across tech

DIGITAL HEALTH LEARNING NETWORK,

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Overview

- Artificial Intelligence (AI) is seen as the main engine of change, not just in healthcare but more broadly across all economic sectors. Most companies now have numerous projects, initiatives and strategies either already active, or are planning to initiate them.
- To help our members prepare for what is being seen as a fundamental change, the DHLN has been discussing AI with a number of the players who are bringing this technology out of their laboratories, from proofs of concept, to actual, practical applications designed to change health and social care delivery.
- Over the last three DHLN meetings we have met with groups from IBM (Watson), Google (Deepmind), and Microsoft. All of these entities are working on some form of advanced computing incorporating learning algorithms to augment or replace some form of specialist human activity.
- A key finding from these discussions is that these technology companies have very different strategies and approaches due to their divergent views around the limitations of the technology, adoption patterns, and current understanding of need.
- Deepmind is working to develop a truly intelligent capability that can develop new ways of executing specific tasks in clinical practice (e.g. reading scans, identifying risks, etc), so that at-risk patients can be identified earlier, and treated quicker.
- IBM's approach (with its Watson initiative) focuses on building knowledge (and learning) in specific domains (e.g. health, law) to mine vast libraries of information to enable quicker, more reliable decisions (e.g. clinical trial recruitment).
- Microsoft does not see the way forward in building intelligent systems, and is focussing on developing novel analytics techniques (e.g. 3-D models, simulations, etc) to support healthcare practitioners address specific issues (e.g. tumour treatment, population health, etc).

The AI spectrum

There is broad agreement that data, and specifically the advanced analytics needed to extract value from it, are becoming increasingly important across all sectors. Healthcare, in particular, expects tectonic-level changes from increasingly easy access to large amounts of health-related information ranging from electronic medical records with Payors, to clinical trial data with Pharma, to real world data from IoT services.

The DHLN has been set-up to explore how and where these changes may originate, and attempts to understand how they may affect existing entities. To do this we met with some of the firms leading the technological charge to transform healthcare and, in these discussions, we found that the companies had a diverse range of assumptions shaping their approach to the development of analytics tools (which, for this discussion, encompasses “traditional” analytics, as well as machine- and deep-learning needed for AI).

Some of the areas where they had different opinions were:

- What’s possible with technology: Achieving ‘real’ AI is not possible
- What’s acceptable to society: For example, complete transparency between patient and Payor
- What’s legal: For example, Watson could not be a doctor due to regulatory restrictions

While each of these major technology companies has their own unique experiences shaping their vision and strategy, there are also a vast number of smaller, boutique ventures that seek to either build on assets from one of the tech giants, or could develop their own type of intelligent analytic tool for a very specific use. Any of these could become a runaway success.