D3: DELIVERING DIGITAL DRUGS
www.digital-drugs.org

Delivering Digital Drugs (D3) is a project funded by
Research Councils UK as part of the "New Economic
Models in the Digital Economy" programme.
RC grant reference EP/L021188/1.

How and why do we digitalize medicines and the practices of medicines use?

What are the consequences?

Delivering Digital Drugs (D3) is a project to investigate the digitalization of drugs in healthcare. The project considers digital transformations underway across all aspects of the distribution and use of medicines in healthcare activities.

Many ambitions for better healthcare are founded on potential new drugs and on making better use of those we already have. Equally, there is a broad commitment across healthcare to use new digital technologies and new data resources to generate improvement. As medicines become mediated through digital technologies and new information and data resources, these two trends become interlinked.

Examples of the digitalization of drugs are seen today in a number of overlapping areas of innovation. These include electronic prescribing, intelligent supply chains, new diagnostic procedures, stratified and personalised medicines, personal smart drug platforms, medical profiling, pharmacovigilance, pharmacogenomics and value based pricing.

Objectives

An early task of D3 is to map this rapidly evolving domain and the relationships between the many and various areas of innovation.

This is followed by case studies of specific episodes of digitalisation of medicines and associated changes as new digital systems and data sources are established. We study how medicines are rendered in digital forms, how digital technologies are deployed, the reconfiguration of practices of use, the generation of new evidence and changes seen in systems of governance and regulation.

The final stage of the D3 project integrates the findings from these cases to provide a system-spanning view of the significance and consequences of digital drugs for healthcare.

Perspectives

We bring to the project a set of contemporary ideas and theories about the digital economy and digital work in general and apply them to the digital health economy. These include ideas of digital innovation, new business models, digital platforms, technology as mobility, new organizational capabilities and emerging service ecosystems.

In analysing our data and applying such ideas we adopt three distinct but linked perspectives.

- That of the drug itself as (or as becoming) a *digital artefact* constituted by and dependent on multiple digital representations and inter-connections.

- The people and groups who work with and use digital medicines including patients, and who shape new *practices of medicines use*.

- The various forms of *value generation* that are expected or occur as a result of the digitalization of drugs, and the ways and places where this value is created, realized and captured.

Activities and Participation

The D3 project includes a programme of workshops, meetings and public lectures. Information about the research team, outputs of the project and events can be found on the project website **www.digital-drugs.org** where you can also sign up to receive emails.

Key concepts:
References on web site

Medicines and Drugs: These two words are almost synonyms, but they each offer slight but significant shifts of emphasis. "Medicine" evokes the practice of medicine and hence the practices of using medicines; "Drug" evokes the manufactured product and its chemical character. (Cornford and Lichtner 2014)

Digitalization: The encoding of analogue information into a digital format and the possible subsequent reconfigurations of the socio-technical context of production and consumption of the associated products and services. (Yoo 2012)

Digital Artefacts: Editable, interactive, reprogrammable, and distributable resources. Their value and utility is contingent on shifting webs of functional relations with other artefacts across contexts and organizations. (Kallinikos et al. 2013)

Platform: "A set of stable components that support variety and evolvability in a system by constraining linkages among other components". (Baldwin and Woodard 2009)

Business Models: Stories that explain the economic logic that delivers value to customers at an appropriate cost. (Magretta 2002)

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