

# **DESIGN WORKSHOP: HOW DO THEY DO IT? INCLUSIVE TECHNIQUES TO SUPPORT SYSTEMS MAPPING FROM HEALTHCARE AND BEYOND**

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## **Introduction**

The workshop will examine the use of representational techniques such as systems mapping to facilitate understanding of the health service through the assessment of risk of existing or proposed systems and opportunities for inclusive design, in order to produce “blueprints” for change. We will learn about types of representation in use (for example flow charts, organograms or exclusion audits) and discuss the merits of various approaches. We particularly welcome participation from practitioners who apply these or similar tools within healthcare or other industries.

The systems approach maintains that understanding the interaction between system elements such as people, technology and the workplace enables organisations to provide system wide optimisation, encouraging the emergence of safety, efficiency, inclusion and productivity, where inclusion is seen as the better matching of peoples capabilities to system demands for specific products or tasks. In this context, the properties of the system are more important than actors within the system and errors are attributed to the system as a whole rather than individual(s) (Kohn et al., 2000). In the UK, this approach has been demonstrated through the Design for Patient Safety initiative and applied across several domains (<http://tinyurl.com/3lpnxo5>). System wide analysis provides understanding of existing and proposed systems given the need to identify improvements and/or document existing/planned process (Jun et al., 2009). This may be beneficial in measuring the effect of initiatives aimed at improving inclusion, safety or efficiency. System mapping avoids the tendency for individuals to focus on one part of the system, one dimension of human capability and/or design in isolation. Techniques support integration across those involved in the design, development and deployment of devices and services, including consideration of inclusivity. Although applied successfully across health service contexts (Buckle et al., 2010), obtaining necessary information and developing suitable representations is not easy. Challenges include:

- **Barriers to communication** within or beyond the health service may result in incomplete or inaccurate descriptions, limiting the quality of system maps
- **Getting people onto the same page:** It can be hard to produce a representation that meets the varied needs of a diverse set of stakeholders
- **Inclusion:** understanding the relationship between product and task demand and human capability.

**Barriers to communication** may be the result of an organisational culture that impedes information sharing (DoH, 2000). Errors experienced during the provision of healthcare may be underreported due to, for example, fear of recrimination. For systems mapping, this matters, as it is hard to build a representative understanding.

**Getting people onto the same page:** There may be challenges relating to representation and presentation. Specifically, how information relating to a system can be captured and presented in a way that is suitable for a variety of stakeholders, and which supports analysis which is of appropriate rigour. When describing a system, it can be hard to convey information at varying levels of technical or organisational detail. It is therefore difficult for teams to share common perspective.

**Inclusion:** Most design ignores the requirements of the mild to moderately impaired, failing to match the design of products, environments and processes to the known perceptual, cognitive and movement capability ranges of people. Inclusive design can be combined with systems mapping to counteract this with cost benefits.

**Statement of relevance:** Systems mapping can facilitate understanding of the likely influence of (technology) interventions or organisational change. First author funded by EPSRC grant EP/G059063/1. Cambridge authors funded by the EPSRC.

## References

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