Reviewer's report

Title: An empirically-derived approach for investigating Health Information Technology: the Elementally Entangled Organisational Communication (EEOC) framework

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Reviewer: Richard Holden

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Overall this is a well written paper introducing a much needed approach to understanding and evaluating HIT as an embedded part of a broader sociotechnical system. My suggestions for revision are few and minor. I admit that while the approach does not seem very profound to me, it is probably novel to many and is therefore of potential importance to the field. My suggestions therefore focus chiefly on adding value to readers who may be less familiar with or have not “bought into” this type of approach.

Major Compulsory Revisions
None.

Minor essential revisions
1. Methods, para starting with “Field materials…”, it is not clear who did this analysis, if there were multiple analysts (and if so, how they worked together), and the analyst(s)’ training/background.
2. On p.8, the authors state that “In this study the realistic evaluation was broadened…” Does this mean that the authors used the “realistic evaluation” framework, e.g., Pawson & Tilley’s, or that the authors conducted an evaluation/analysis from a realist perspective as stated at the start of the paragraph? I realize the overlap between the framework and perspective, but the framework involves not only the realist perspective but also a method and analytic language that is not represented in this paper (e.g., there’s no formal talk of triggered mechanisms in the results). If the authors used realist(ic) evaluation, they should consider presenting their results and discussion similar to other RE studies; if they did not use realistic evaluation but identify as realists, they should consider rewording the above-quoted sentence.
3. The authors introduce a new framework but there are similar HIT-specific frameworks that have been proposed or are being used, including Harrison et al’s IASTE framework, Carayon et al’s AHRQ Workflow Toolkit, and Unertl et al’s Workflow Elements Framework/Model. Readers may wonder how these models or approaches overlap, how EEOC is different or preferable to the others (e.g., for addressing communication-specific questions), and how EEOC might apply to the kind of cases that the other models have been applied. Related to this last issue of applying EEOC to familiar cases beyond the LIS and CPOE applications...
described by the authors in this and other papers, I think it would be of
tremendous interest to readers to know how EEOC might help us understand
health information exchange (by itself or compared to how Unert et al’s
application of their Workflow Elements Framework), the Han et al “CPOE
increases mortality” case, or the “unintended consequences” from Joan Ash’s
studies of CPOE. These are cases with which many readers will be familiar that
EEOC can address from a novel perspective.

Discretionary revisions
4. The authors use “communication” in the name of their framework but discuss a
number of actions and interaction that are more than communication, for
example, coordination, forecasting, temporal issues related to workflow, etc. I
understand some of the reasons behind focusing on communication, but I
wonder whether this is too narrow, especially for introducing the framework to
unfamiliar readers. The authors may wish to explicitly address in what way
communication might be an umbrella term for these phenomena or how
communication is a part of a larger constellation of organizational phenomena, all
of which must be considered.

5. P.2, “The HIT challenge underscores the importance of employing
theory-based approaches...”: the authors may be interested in another paper
(Holden & Karsh, 2009) whose argument is the need for theory-based
approaches to HIT, attached.

6. Table 1: As an undifferentiated list, I’m not sure what this adds. Perhaps the
authors have a way of labeling or categorizing these communication events (e.g.,
one-way vs. two-way; request for vs. provision of information; order vs.
consultation; etc) in a way that extracts meaning out of them? Otherwise, not
sure a table is necessary to get the point across.

7. Related to the comment above, on p.10, the authors refer to “a two-way
process of message reinforcement” but it is not clear which or how many of the
transactions are actually two-way (e.g., are orders two-way or one-way
transactions or does it depend?) and it is also not clear whether Blood Bank ever
initiates, follows-up on, or circumvents any of these transactions (e.g., Blood
Bank sends receipt confirmation to ward? Blood Bank anticipates need to tube
product and does so without a phone call?) In a nutshell, if there is more
complexity to the communication than evident in Table 1, it would be consistent
with the EEOC to detail some of it.

8. The PDF version of Figure 1 did not appear to come out properly. Are there
supposed to be arrows or is the arrow floating mid-page a PDF conversion
artifact? I am confused about how “role,” as advertised in the figure caption, is
depicted in the figure. I am also having difficult extracting meaning from the figure
beyond “these three things are important and interrelated.” This be because I am
missing part of the figure (arrows? text?) or perhaps that is all the meaning the
authors intended to impart (which is fine, though I would have liked more).
Finally, why is “staffing” not part of the “organisational environment”?

9. Figure 2 isn’t strictly necessary: the concept is clearly enough described in
text.
10. If the intent of the paper is to convince potential evaluators of the importance of the EEOC approach relative to other, e.g., technology-focused, approaches, the authors may wish to illustrate this by showing how an alternate approach(es) might have provided an incorrect, less actionable, or otherwise less desirable evaluation of the three presented cases.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests