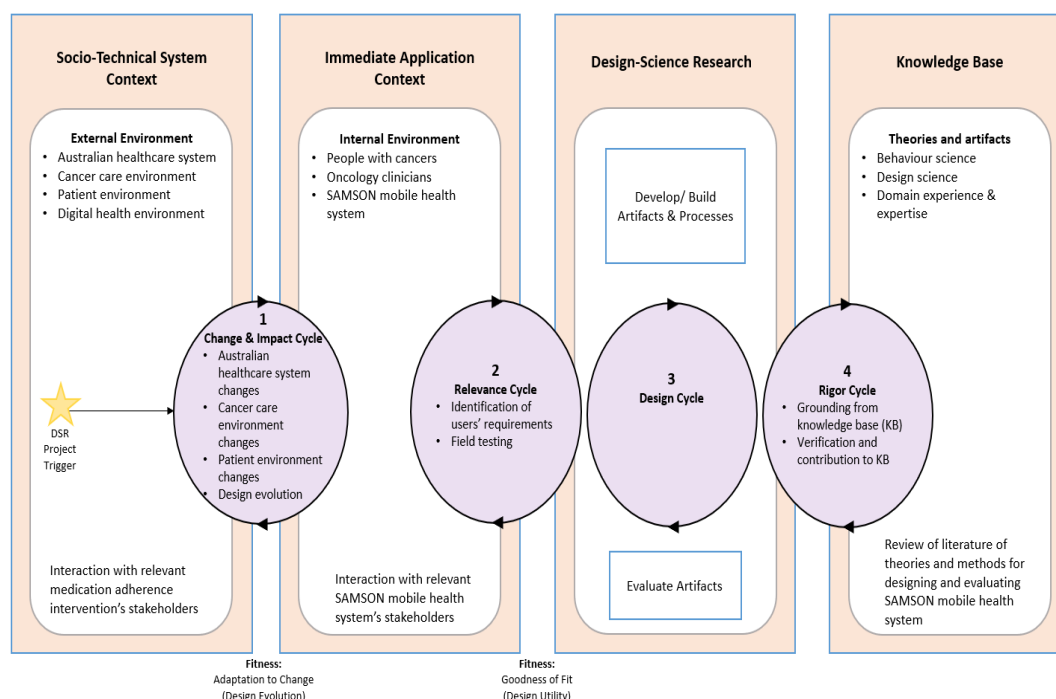


S2. Adapted Four-Cycle and Six-stage DSRM of the SAMSON Mobile Health Solution

(The figure and table were reported in another manuscript under review)

Design Science Research Methodology (DSRM) developed by Drechsler and Hevner (1), Hevner, March (2) was adopted to guide the co-design process. As shown in the figure, this socio-technical approach included four key cycles: change and impact, relevance, design, and rigor.



In the table below, six stages of DSRM introduced by Hevner and Wickramasinghe (3) were followed in the co-design and development of SAMSON mobile solution.

DSR stages	Interaction of DSR cycles and stages	Approaches
i. Problem identification and motivation	Cycle 1. Change and Impact impacts on Stage i	Review literature on Medication Adherence (MA) problems in cancer Review literature on current MA interventions and their effect Identify problems in the current design Define a set of requirements in the new design.

ii. Definition of the objective of the solution	Cycle 1. Change and Impact and Cycle 2. Relevance impact on Stage ii	Review literature on Behavioral Science Research (BSR). Adapted BSR principles in design.
iii. Design & development	Cycle 2. Relevance, Cycle 3. Design and Cycle 4. Rigor impact on Stage iii	Co-design to conceptualize design requirements and features.
iv. Demonstration	Cycle 4. Rigor impacts on Stage iv	Test the design and acquire feedback from the design's users.
v. Evaluation	Cycle 4. Rigor impacts on Stage v. Stage v impacts on Cycle 3. Design and Cycle 4. Rigor.	Evaluate the acceptability, usability, and potential effect of the intervention.
vi. Communication	Stage vi impacts Cycle 3. Design	Report and publish the evaluation results.

References

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2. Hevner A, March S, Park J, Ram S. Design Science in Information Systems Research. *MIS Quarterly*. 2004;28(1):75-105.
3. Hevner A, Wickramasinghe N. Design Science Research Opportunities in Health Care. In: Wickramasinghe NS, JL, editor. *Theories to Inform Superior Health Informatics Research and Practice*. 1st ed: Springer, Cham; 2018. p. 3-18.