



Multimedia Appendix 11 - Conceptual networks of clustered metaphors

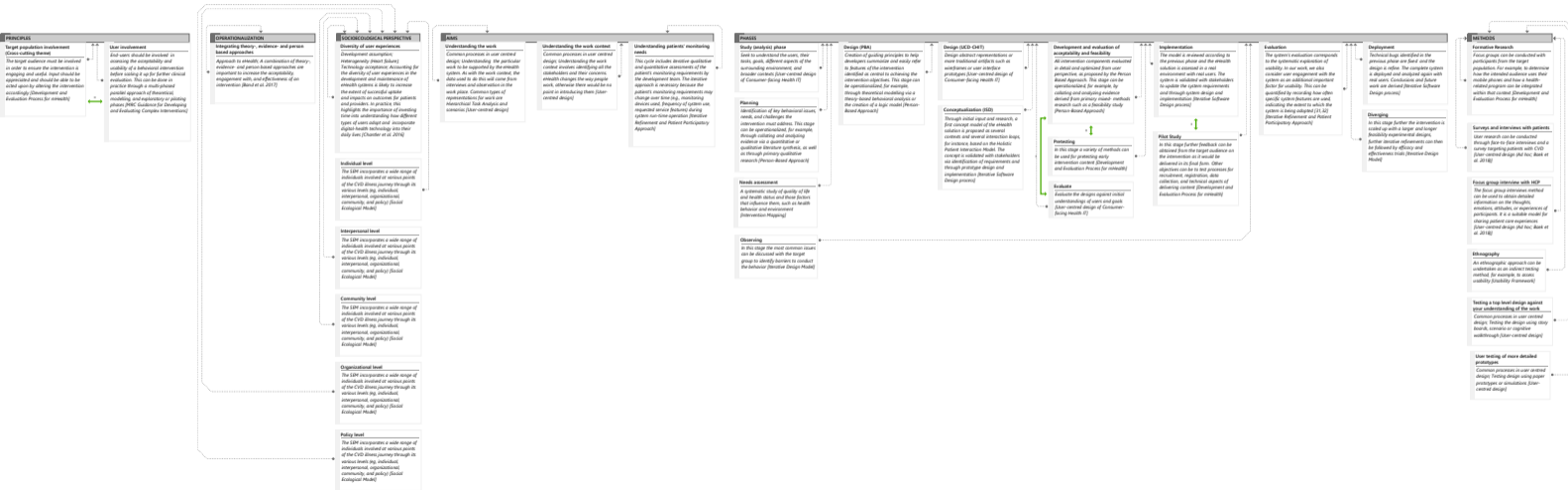
 Reciprocal translation (=)

 Refutational translation (<>)

Grey boxes are themes and organizers for the synthesis

eHealth is a participatory development process

Line-of-argument (Conceptual network)



eHealth development creates new infrastructures for improving health care, health, and well-being

Line-of-argument (Conceptual network)

OPERATIONALIZATION

Interdisciplinary methods

Development state-of-the-art; Limitations of study/project; There is a growing need to consider adopting methods from other disciplines rather than using deployment-evaluation cycles [54]. Theories, models, and methods to support this approach can be found in engineering and related sectors (e.g. use of factorial or fractionated evaluation designs that have been utilized well within the HCI sphere) [Walsh et al. 2018a]

SOCIOECOLOGICAL PERSPECTIVE

Organizational level

The SEM incorporates a wide range of individuals involved at various points of the CVD illness journey through its various levels (eg, individual, interpersonal, organizational, community, and policy) [Social Ecological Model]

Individual level

The SEM incorporates a wide range of individuals involved at various points of the CVD illness journey through its various levels (eg, individual, interpersonal, organizational, community, and policy) [Social Ecological Model]

Interpersonal level

The SEM incorporates a wide range of individuals involved at various points of the CVD illness journey through its various levels (eg, individual, interpersonal, organizational, community, and policy) [Social Ecological Model]

Community level

The SEM incorporates a wide range of individuals involved at various points of the CVD illness journey through its various levels (eg, individual, interpersonal, organizational, community, and policy) [Social Ecological Model]

Policy level

The SEM incorporates a wide range of individuals involved at various points of the CVD illness journey through its various levels (eg, individual, interpersonal, organizational, community, and policy) [Social Ecological Model]

AIMS

Tailored, personalized, and timely support

eHealth added value; eHealth state-of-the-art; Increasingly widespread access to the internet and mobile phones means that eHealth can be accessible to the majority of patients and can be used to provide information and support at any time the patient needs it. eHealth can empower patients by providing better access to personalized information and support for active involvement in treatment and self-management [Band et al. 2016]

Remote delivery of system refinements

Following delivery of the eHealth technology at the patient's home, remote refinements of the system can be initiated, thereby saving valuable human resources [Iterative Refinement and Patient Participatory Approach]

Facilitating conditions

Determinants of technology acceptance; Consumers' perceptions of the resources and support available to perform a behavior [Unified Theory of Acceptance and Use of Technology model]

Policy categories

Policy categories represent types of decisions made by authorities that help to support and enact an intervention [Behavior Change Wheel/COM-B model]

Service provision

Policy categories; Delivering a service [Behavior Change Wheel/COM-B model]

Guidelines

Policy categories; Creating documents that recommend or mandate practice [Behavior Change Wheel/COM-B model]

Social planning

Policy categories; Designing and or controlling the physical or social environment [Behavior Change Wheel/COM-B model]

PHASES

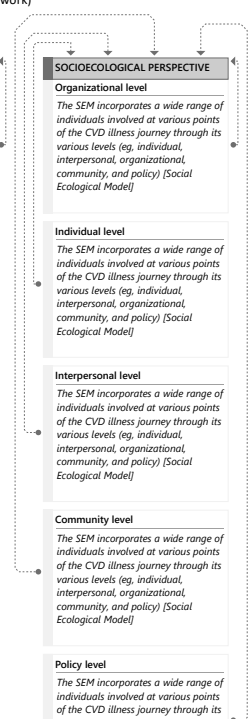
Conceptualization (DEP)

Stage of development where experts decide on the theoretical basis, review the evidence, and plan the development process. Brainstorming sessions can cover how to translate the theory and evidence into practical methods and techniques [Development and Evaluation Process for mHealth]

METHODS

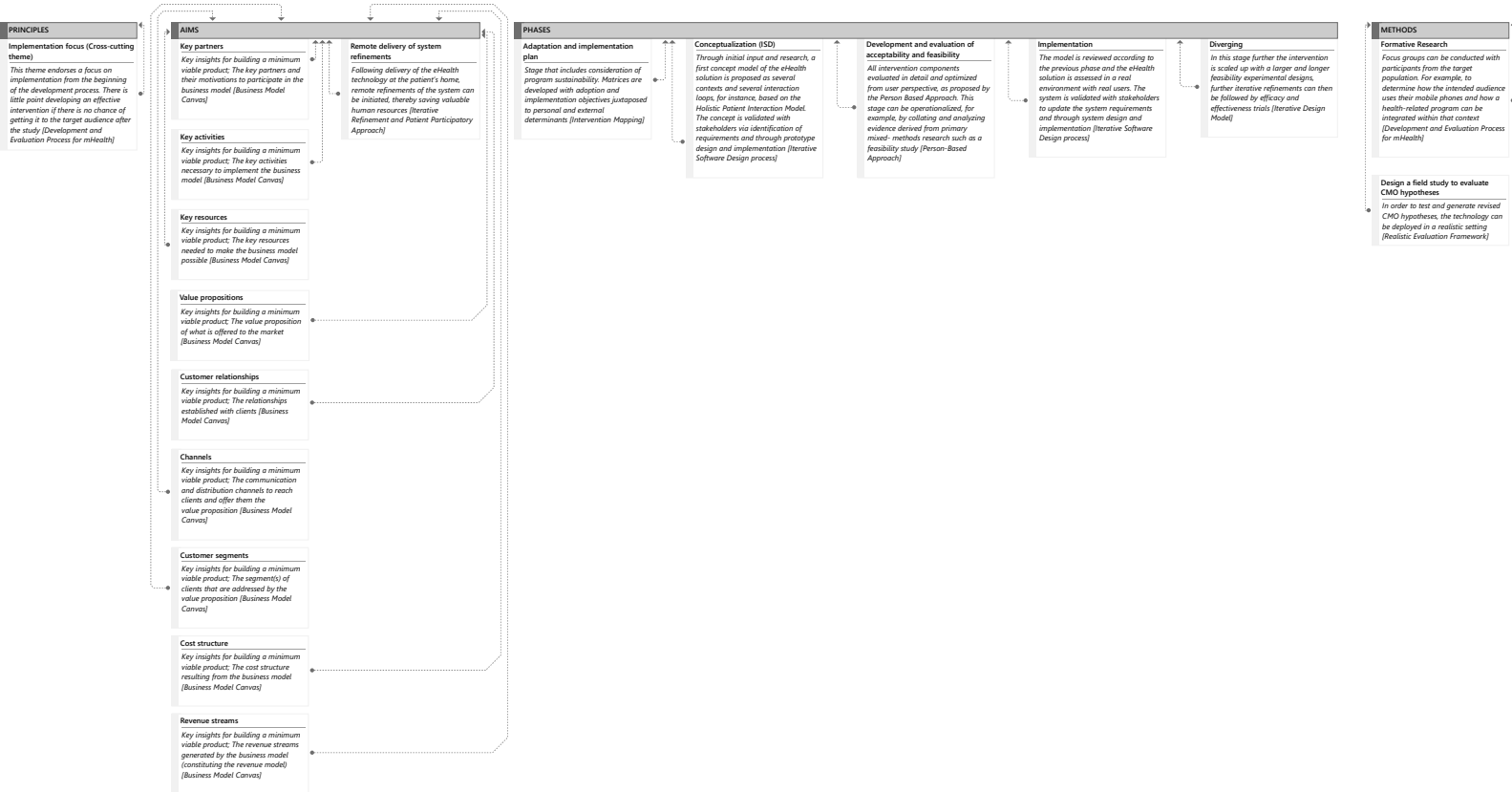
Program plan

Stage of intervention mapping that includes a description of the scope and sequence of the components of the intervention, the completion of program materials, and protocols for implementation [Intervention Mapping]



eHealth development is intertwined with implementation

Line-of-argument (Conceptual network)



eHealth development integrates theory, evidence, and participatory approaches for persuasive design

Line-of-argument (Conceptual network)

OPERATIONALIZATION

Integrating theory-, evidence- and person based approaches

Approach to eHealth; A combination of theory-, evidence- and person based approaches are important to increase the acceptability, engagement with, and effectiveness of an intervention [Band et al. 2017]

AIMS

Tailoring and personalization

Heterogeneity (CVD); An individual assessment (e.g., on psychological readiness for change) and tailored and personalized features can be useful to achieve health behavior change, to empower patients to make choices and direct them to the most appropriate content for them at a specific time [Walsh et al. 2018a]

Habit

Determinants of technology acceptance; The extent to which people tend to perform behaviors automatically because of learning, also equated with automaticity [Unified Theory of Acceptance and Use of Technology model]

Facilitating conditions

Determinants of technology acceptance; Consumers' perceptions of the resources and support available to perform a behavior [Unified Theory of Acceptance and Use of Technology model]

Hedonic motivation

Determinants of technology acceptance; The fun or pleasure derived from using a technology [Unified Theory of Acceptance and Use of Technology model]

Performance expectancy

Determinants of technology acceptance; The degree to which using a technology will provide benefits to consumers in performing certain activities [Unified Theory of Acceptance and Use of Technology model]

Social influence

Determinants of technology acceptance; The extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology [Unified Theory of Acceptance and Use of Technology model]

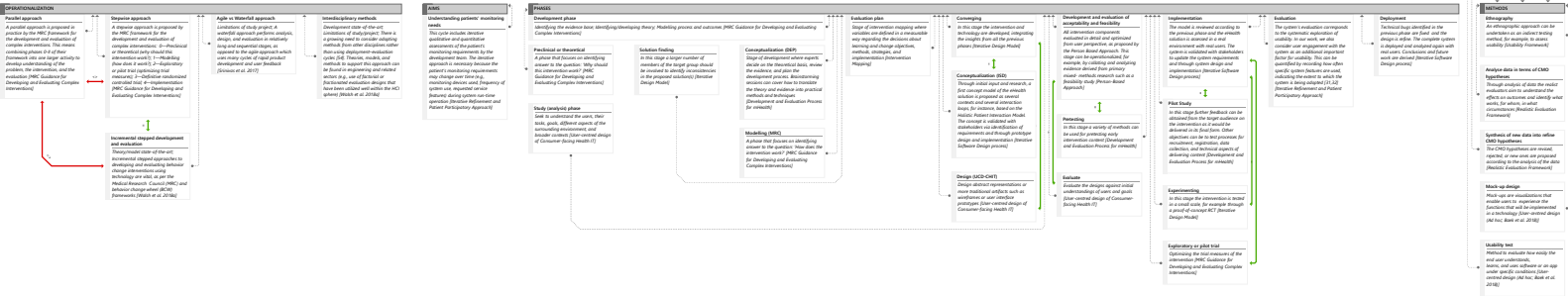
Automatic Motivation

Parameters of effectiveness; Target constructs (sources of behaviors); Automatic processes involving emotional reactions, desires (wants and needs), impulses, inhibitions, drive states and reflex responses [Band et al. 2017; Behavior Change Wheel/COM-B model]

Parameters of effectiveness; Sources of behavior; Motivation describes the brain processes that energize and direct behavior and includes both automatic motivation (e.g., habits) and reflective motivation (e.g., cost-benefit decision making) [Walsh et al. 2018a; Behavior Change Wheel/COM-B model]

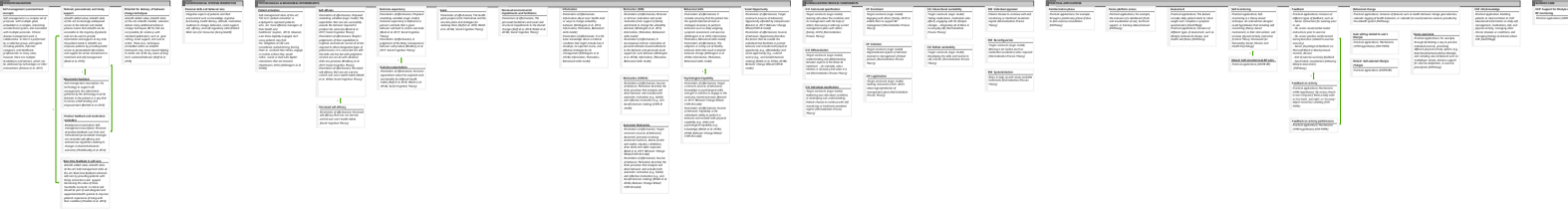
eHealth development requires continuous evaluation cycles

Line-of-argument (Conceptual network)



Behavior change

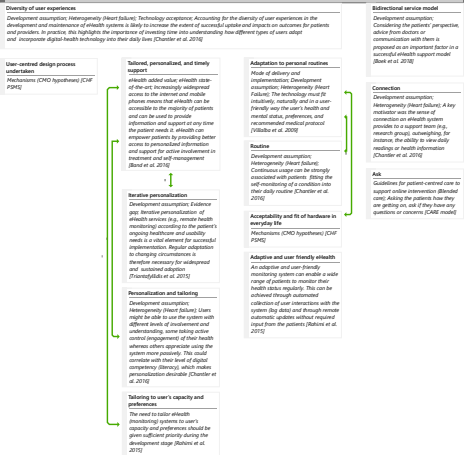
Line-of-argument (Conceptual network)



Technology adoption

Line-of-argument (Conceptual network)

OPERATIONALIZATION



CHALLENGES



USER INTERACTION PERSPECTIVE



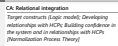
SYSTEM USABILITY



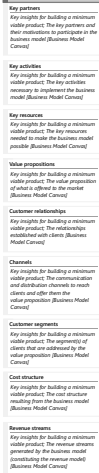
DETERMINANTS & PROCESSES OF TECHNOLOGY ADOPTION



NORMALIZATION PROCESS COMPONENTS



BUSINESS MODELLING



Health-related outcomes

Line-of-argument (Conceptual network)

