

# Transforming Sociotech Design (TSD)

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**Abstract.** Research on Transforming Sociotech Design (TSD) expands conceptual frameworks for designing and evaluating Persuasive Technology (PT) aimed at achieving sustainable transformations of our lives towards wellbeing. TSD helps extending our understanding beyond limitations of traditional behavioral change designs and interventions. TSD describes PT components for designing successful transformations, known as Socially Influencing Systems, Computer-Supported Influence, Persuasive Cities, Persuasive Backfiring, and Dark Patterns.

**Keywords:** Socially Influencing Systems, Computer-Supported Influence, Transforming Technology.

## 1 Important Direction

Knowledge on Transforming Sociotech Design (TSD) empowers scholars and designers to create PT that makes behavioral and attitudinal changes last at all scales, be it an individual, group, or societal levels. Present knowledge on Persuasive Technology (PT) often reveals how behavior change designs and interventions are limited in sustaining their effects [1]. There is an increasing need for novel ways to create PT that helps people not only to achieve their goals, but also supports everyone to maintain their new habits. Such PT should ultimately empower people to succeed in their desired transformations. Therefore, this work uncovers conceptual frameworks for designing and evaluating PT aimed at achieving sustainable transformations of our lives towards wellbeing.

## 2 Transforming Frameworks

The framework of *Socially Influencing Systems* [2] describe perpetual mechanisms to foster user motivation as compared to conventional methods, such as those that are based incentives and punishments. Socially Influencing Systems harness social influence from crowd behavior to craft influential messaging aimed at shifting behavior and attitude of an individual, who naturally is an integral part of the same crowd. Such continuous interplay can ultimately result in an ongoing process that has the capacity to transform lives without any other mechanisms.

The framework of *Computer-Supported Influence* [3] in the realm of PT distinguishes four types of persuasion, i.e. interpersonal persuasion, computer-mediated persuasion, computer-moderated persuasion, and human-computer persuasion. This framework outlines a sharper conceptual representation of the key terms in transforming design, drafts a structured approach for better understanding of the influence typology, and presents how computers can be moderators of social influence.

The framework of *Persuasive Cities* [4] aims at improving wellbeing across societies through applications of socio-psychological theories and their integration with conceptually new urban designs. This research presents an ecosystem of future cities, describes three generic groups of people depending on their susceptibility to persuasive technology, explains the process of defining behavior change, and provides tools for social engineering of Persuasive Cities.

The framework of *Dark patterns and Persuasive Backfiring* [5] provides tools to aid academics and designers in the study of behavior change interventions that produce unintended negative outcomes, presents a taxonomy of backfiring causes, and describes an analytical approach containing the intention-outcome and likelihood-severity matrices. This framework also introduces and locates dark patterns within the PT research.

This research advances scientific knowledge and its practical applications to transform lives. This work on the TSD frameworks is instrumental for various contexts, including wellbeing, health, education, games, sustainability, safety, emergency management, ecology, and economy. Further, more refined scientific knowledge on how to design permanent behavior changes should be generated and translated into applicable guidelines for the PT community to foster transformation for the betterment of our future. Information technology and computer systems will be increasingly designed to change behavior and help achieve better lives [1-5]. TSD overviews and explains how various frameworks and models can help scholars and developers to create PT that facilitates desired transformative effects on users.

## References

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