

The 'Design for social contagion' framework and toolkit help municipalities to devise persuasive and tactical interventions that can stimulate social contagion of a positive attitude towards the

energy transition amongst residents. These help in overcoming apprehensions and barriers that lead to procrastination and inaction amongst residents.

Design for Social contagion framework

To ensure positive outcomes and a far reach, the social influence and social contagion process needs to be well-curated and designed for. The 'Design for social contagion framework' outlines actionable steps to design the contagion process. It includes 3 key elements that need to be thought off while shaping the contagion, and a 6-step process that helps to visualise (and design) how the contagion will unfold in a particular context. The framework builds on complex contagion theory.



(Define the) Elements of a contagion

Design for Social contagion toolkit

The 'Design for social contagion' toolkit (presented subsequently) helps in defining the 'Strategy element (E3)' of the framework and aids in designing the interventions for contagion (Step 4 & 5 of the process). The interventions can be designed for both, the attitude formation phase and the decision-making phase. In the attitude formation phase, several small interventions need to be designed, which engage the users over a longer time and build commitment; overcoming the apprehensions and other barriers to adoption. In the decision-making phase, interventions can be designed to build social pressure, prompting positive decisions.

The toolkit consists of 3 elements :

- 1) A deck of inspiration cards.
- 2) A set of 5 design canvases (that guide the design process); and
- 3) A handbook (that outlines how to use the cards and canvases to design interventions)



This toolkit and framework are developed by Jesal Shah as a part of her Strategic product design master thesis 'Social contagion as a means to transitions' at Delft University of Technology, under the guidance of Dr. Rebecca Price, Dr. ir. Jotte de Koning and Mr. Jacco Kwakman. It was developed using Reyeroord (a pilot neighbourhood in Rotterdam) as a case study, for Gemeente Rotterdam.

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Design for Social contagion framework



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E **L**What

This includes defining the content or the target behaviour that needs to be spread amongst a population. In the case of gas discontinuation in the built environment, the WHAT can be the contagion of positive attitudes or decision towards shifting to greener energy alternatives. It can also be determined by understanding the residents' motivations and apprehensions towards the gas discontinuation.



EZHow

The HOW refers to the means / mode of contagion. This includes visualising and designing the network dynamics of the contagion – how the contagion will unfold, who will initiate it, how will it spread, where will the contagion take place. The 6-step process outlined subsequently helps in defining this element of the contagion.

> Map social identities & networks of the target group

In order to understand how contagion can be seeded, the first step is to understand people's social networks; which can be defined using their social identities. Use tools such as Social Identity Mapping (SIM tool; Cruwys et. al, 2016), Ethnographic Social network mapping (Trotter II, 1999) or methods like Day-in-the-life or Week-in-thelife mapping to identify the target group's social identities and the social networks these engender.

> Identify relevant homophilous clusters & social contexts

Analyse (qualitatively) the social identities and

E3 Strategy

While the HOW component refers to identifying the who's and visualizing the process of how the contagion will unfold, the strategy component involves devising persuasive and tactical ways of inducing the behaviour. This component goes hand-inhand with step 3, 4 and 5 of the 6-step process described. The inspiration cards in this 'Design for social contagion toolkit' help to define this element.







networks derived in step 1 to define relevant homophilous clusters (groups where individuals have similar characteristics, e.g. cultural background, physical appearance, tastes etc.). Based on the clusters identify two types of social contexts where interactions to spread the behaviour can take place-1) which enable spread of behaviour within each cluster; 2) which enable spread of behaviour across different clusters.

Identify seed nodes;Define seeding strategy

Having identified the social networks and contexts of contagion, the next step is to identify seed nodes (people who can initiate the contagion; within and across clusters). These can be selected based on the intent & content of contagion e.g.. most influential people, people with biggest networks, people already activated, entrepreneurial & active people etc. This step goes hand-in-hand with steps 4 & 5. Define seeding strategy. Use clustered seeding.



Design interventions to enable contagion within the clusters

Use this toolkit to design (facilitate) interactions (in the identified social contexts) between people within a cluster. (Note: people need reinforcement from multiple sources



before they adopt the behaviour; design interventions accordingly).





Use this toolkit to design (facilitate) interactions (in the identified social contexts) between people from different clusters. For effective spread of the behaviour ensure there are wide bridges (maximum number of overlapping ties between the clusters).



Seed the contagion; Evaluate & Iterate

After seeding the contagion, evaluate the spread and effect of the interventions. If required, iterate on the interventions, seed the intervention in different social contexts or use a different seeding strategy.

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Design for Social contagion toolkit



Inspiration cards



Anatomy of an intervention

The three components of the toolkit help you design interventions to enable social contagion of the target behaviour. Each intervention should:

- Fulfill 2 criteria
- Follow 4 design principles
- Constitute 4 design components

These form the anatomy of intervention. Explanation of these design criteria, design principles and design components is captured in the inspiration cards along with examples of persuasive strategies that can be used to design these components (Action, Spread Mechanism, Touchpoints and Incentives).

Types of Inspiration cards

There are 4 types of inspiration cards in the deck:

Design criteria and design principle cards
 Explain each of the design criteria and design principle

2) Component index cardsExplain each of the design component.

3) Category Index cards

The persuasive strategies that can be used to design a particular design component are categorised based on key component design principles. Each category has an index card which outlines the component design principle (A1, A2, T1,T2 etc.) and the strategies that fall under it.

4) Strategy cards

Explain different persuasive strategies that can be used to design the components.



Design canvases

Intervention Design Canvas 1 Step 1 : Design Question Definition		Intervention Design Canvas 2		Step 2 : Brainstorm Idea				
1A ()	Define the overall GOAL of contagion / project What is the target behaviour that needs to be spread?	eg. Gar discontinuation / Besidents understand the urgency to act towards climate change / Awareness of energy transition amongst residents	1C ?	Copy the HOW TO / HOW MIGHT WE question (defined in step 1C) for reference. This is the design question to be answered during brainstorm.	eg. Ho	or to carb the spread of myths and misunderstandings 7 eg. How might we	ensure residents understand the hidden costs related to a technology?	
1B	Define the SPECIFIC design question/ content for contagion (the WHAT) *Can you break the overall aim into smaller aspects that need to tackled?	eg. Myrihs and misunderstandings amongst residents / Residents don't understand the hidden costs, technological specifications	attions 2A Select relevant categori Based on the goal and a Select the relevant Action A3, A41, Altornately, web		(4) on any manufactory is service and more an first to see commencement of the service or more the manufactories of the service of the ser			
	•What are the smaller problems that give rise to the overall goal? •What are the perceptions or apprehensions of the target group' other barriers that result in inaction? As a group discuss these specific design questions / problems you want to tackle. Select 2-3 questions that you will larget during this brainstorm session.			Distribute the cards amongst the participants. Along with the Action cards, distribute 1 or 2 Spread Mechanism and incredive cards to each team member. Let each participant go through their cards. Once done, briefly discuss the cards.	2B	+Use the Action, Spread mechanism and Incentive cards for insp	deas for Action, Spread Mechanism and Incentives. They don't need to form a single concept as yet. Finteraction and contagion in mind while ideating.	
1C	Translate the specific design question (WHAT) Into a HOW TO / HOW MIGHT WE question: Refer to the examples sizen.	eg. How to curb the spread of myths and misunderstandings ? eg. How might we ensure residents understand the hidden costs related to a technology?	parti	Actions Tasks / Activities / Challenges/ Campaigns can people perform oppate in; that will help in achieving the target behaviour? Think wykcial / digital touchpoints that can be used to trigger the targer visor.		Spread Mechanisms How can the target behaviour / Action be spread to other people? Think of Direct / Indirect social influence / pressures.	Incentives Why will people work to perform / participate in the target behaviour / Action? What will they gain out of it? What will they lose if they don't participate?	

A set of 5 design canvases guide the process of designing interventions during a creative session. Each canvas covers one step of the design process, namely:

Define design question
 Brainstorm ideas

This question(s) will be answered during the brainstrum. ID Which social identities and social contexts for contagion: Which social identities and social in retreeois of people are relevant to trigger the contagion? Which are the key spaces where the target group meets / interacts with similar people? Which are the key spaces where the target group meets / interacts with similar people? Which are the key spaces where the target group meets / interacts with similar people?	n, Dum-steps as the social contest for contagion.	Parkin	ng lot for all your ideas; There is no right or w	rong!
Design for Social Contagion	Deci	ign fer Secial Contagion		
Intervention Design Canvas 3		ervention Design Canvas 4		Step 4 : Evaluate and Select concepts
Go through the ideas generated in step 2. Build on the ideas, mix and match them to generate concepts for contagion of the behaviour. For each concept define the Action, Spread machanism, incentives and Touchpoints that will be used.		A Each team should present their ideas (top 3/5) to the bigg Build onto each others ideas. Discuss pro's/ con's. Add / S		
perform/ participate in, that will halp in achieving the target people? Think of Direct / Indirect social influence / behavior.	Incentifive Touchpoints and the same of the behaviour? Which touchpoints and and the same of the behaviour? Which touchpoints and any the incentives?	As a team, define the evaluation criteria for the concepts based on the goal of the contagion and other constraints: If possible, bit the evaluation criteria from most important to least important.	g, ease of implementation, spread /reach of contagion, cost of implementatio	m, effectiveness in meeting the goal of the contagion.
·· [3	C Use any one of the following methods to evaluate and sh	ortlist the concepts:	
cept 2		Vote using coloured dots	C-Box	Rank the concepts
ğ		 For each of the evaluation criteria, define a specific colour dot (wither print coloured dot stickers, or use colourful markers). 	• If there are only two key evaluation criteria, use a C-box.	 As a team, discuss and find top three concepts for each evaluation criteria.
n		eg. Spread / reach of contagine	 Plot x and y axis. Assign one evaluation criteria to each axis (eg. x-axis: cost of implementation - cheap to expensive; y-axis: spread /reach of 	eg. Reach of contagion Evaluation ortionia #2
- ecce			contagion max. reach to min. reach)	2 2 4 8
3			 As a team, go through each concept and place it on the c-box according to how it fairs on both the evaluation criteria. 	* Now vote for the most promising concepts, or decide
			y-units exacts of contagion	together 3/5 concepts that fair well in all evaluation criteria and can be taken forward for detailing and validation.
4 logs		•		wardstock.
08		*Reep the concepts of all the teams together (on a board / table). For each evaluation criteria, vote for the concepts that are most promising. Each person can vote for 3 concepts for each evaluation criteria. Let everyone vote simultaneous?	r acto cast of implovertation theref	
Concept 5		 Based in the tably of votes and the importance of evaluation oriteria, select top 3 / 5 promising concepts, that will be detailed further and can be validated in field. 	Crice all concepts are evaluated (placed on the c-boil, decide which quadrant in most femilate. Detail the concepts in this quadrant in the next step and validate in the field.	
Design for Social Cantagion Intervention Design Canvas 5 Concept (Name / number);	Step 5 : Detail the selected concept(s)			

 3) Generate concepts for contagion4) Evaluate and select concepts5) Detail the selected concepts

A step-by-step explanation of the canvases, and how to use these along with the inspiration cards is provided in the handbook.





The energy transition



In the wake of global warming and the earthquakes in Groningen, the government of Netherlands has set the goal to reduce greenhouse gas emissions by 49% in 2030 compared to 1990 levels. An energy transition in the built environment is identified as one of the means to achieve this goal. The vision includes the transformation of 7 million homes & 1 million buildings, which are moderately insulated and heated by natural gas, into well insulated buildings that are heated using renewable sources.

About

Since alternate technologies are already available in the market, the government plans to adopt (to begin with) pricing and subsidising measures to enable the transformation – (financial) incentivisation being the key strategy. The challenge here is that large scale adoption is a necessary condition to regulate the prices, even if the technology is economically viable. Moreover, the provision of subsidies & funding, and the presence of technological alternatives does not imply that households will actively opt for gas discontinuation.

At the micro scale, the transition involves (financial) investments in terms of infrastructural changes, time and energy by the residents in order to upgrade the wiring, insulation as well as heating sources. The return on this investment is not

Transformation of 7 million homes & 1 million buildings, which are poor/moderately insulated and heated by natural gas, into well insulated homes and buildings that are heated using renewable sources by 2050. visible in the immediate future and poses uncertainty in financial savings in the long-term. It also entails short-term inconveniences in routines. Thus, even if residents have a positive attitude towards the energy transition, given this perception of inconvenience and uncertainty, it does not reflect in their choices towards transitioning away from natural gas.

Hence, the transition is predominantly a social challenge (a societal transition) wherein participation of a critical mass is a pre-requisite to achieve the set goals. It is clear that solely top-down (policy-driven) solutions are not enough to motivate the critical mass. Bottom-up, socially-driven interventions are required to activate residents.

Zooming in on the individual scale

Social influence on an individual's decision-making

Individual's decision-making Context (Contextual Factors) Several theories within the domains of psychology, sociology and anthropology highlight that an individual's actions, behaviour and decisions are influenced by contextual factors, especially the social groups they belong to, and the social norms that these ensue. These argue that individual decisions are 'constructed' or determined by social and technological systems wherein needs, attitudes, and expectations are not individual in nature but are embedded in ongoing relations and networks of relations.

People are strongly influenced by the (in)action of others, which implies that one would act only if several others have chosen to act. People have the tendency to



Psychological Factors (values, attitudes, and personal norms)

imitate behaviors of others who are either in their vicinity (belong to similar social groups), or whom they aspire to be. Here, one's social identity, social networks and the social norms these ensue are the building blocks of social influence, and constitute an important leverage point in shaping people's behaviours. Thus, social influence (social contagion) is a means of scaling up the desirability, acceptance and adoption of greener energy alternatives.

This project explores and builds upon this social construction of an individual's decision-making process and its building blocks. It highlights how social influence processes, and the phenomenon of social contagion can be used to activate citizens towards the energy transition.

View resources to see how to apply social contagion >

