

> TNO report

Three Cases of Social Innovation Impact Assessment

*Possibilities and Challenges in an
Impact Assessment Method for
Social Innovation*

TNO innovation
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12 December 2014 >

Three Cases of Social Innovation Impact Assessment

Possibilities and Challenges in an Impact Assessment Method for Social Innovation

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Summary

This report focuses on the general suitability of Impact Assessment (IA) when applied to social innovations. The main question is: How suitable is the IA approach (see Appendix for example and description of TNO IA approach), if it is applied to assess the impacts of social innovations with regard to policy changes?

In order to answer the aforementioned question, the possibilities and challenges of IA for social innovation were explored by applying the IA method on three social innovation cases: local energy production, workplace innovation and car sharing. We developed a special format with questions for researchers to describe social innovation cases and relevant policy options. Cases described in this format are used to construct models, which can form the basis for IA calculations.

In the first part we present the format (used to describe cases and related policies) that we have developed for IA of social innovation. The format consists of a questionnaire and tackles all aspects of social innovation and relevant aspects of policies that have impact on social innovation.

In our second part, the three cases are discussed and presented. The local energy case shows how with governmental support energy production can be relocated from standard electricity producers to local centres. The workplace innovation case focuses on how co-working spaces were co-initiated by public and private entities. The car sharing example shows how municipalities can ease and facilitate the process of car sharing. Three different models were created for all cases: 1) general, 2) simplified general, and 3) models with regard to different stakeholders.

Hereafter, we shortly formulate the findings that increased the understanding of IA of social innovation. It was acknowledged that it should be clearly defined whether the main focus is on policy impact on social innovation or social innovation on various stakeholders (society, environment, etc.). A new assessment approach was suggested: IA models can be developed for different stakeholders separately; in this way models can become less complex and, therefore, more applicable as a basis for (mathematical) computations of IA. However, there are some incongruences that arise from different theoretical aspects of IA and social innovation (e.g., different assumptions about institutional context, contextualization vs. general approach); those disagreements have to be taken into account before applying IA on social innovations.

Finally, we suggest future actions for the actual execution and approach of an IA on a social innovation case and discuss future possibilities and difficulties that may arise applying IA on SI cases. In conclusion, IA can indeed be applied on social innovations, but additional considerations, as described in our report, should be taken into account. Moreover, our developed IA format for social innovation cases and the example case descriptions can help to facilitate this process.

1 Introduction

This section focusses on the suitability of a general approach for Impact Assessment (IA) when applied to social Innovations.

Our main question is:

How suitable is the IA approach (see Appendix for example and description of TNO IA approach) if it is to be applied to assess the impacts of social Innovations and/or of policy alternatives with the aim to foster social innovations?

Research approach

We explored the possibilities and challenges of IA for social Innovation, by applying the IA method on three social innovation cases: local energy production, workplace innovation and car sharing. We have developed a special format to describe the cases. Cases described in this format are used to construct models, which can form the basis for IA calculations.

Report outline

First, we present the format (used to describe cases) that we have developed for IA of social innovation. Second, the three cases are discussed separately in the next sections. Third, we formulate what we can learn from the cases and what this means for IA of social innovation. Finally, we suggest future actions for the actual execution of an IA on a social innovation case.

2 IA format for social innovation case descriptions

We have developed a format which contains questions that need to be answered in order to do an IA on a social innovation case. Questions of a traditional IA are adjusted to the specific context of social innovation. Because social innovation is a broad container concept, it is very important to narrow (specify) the research focus: choose a concrete policy that is related to a specific intervention. Furthermore, stakeholders are identified as an important factor in social innovation IA. The desired impact of the social innovation may differ a lot depending on stakeholder perspective. Moreover, the construction of a policy implementation model is needed in order to perform calculations. Different kinds of models are possible. We will elaborate on that in the three case descriptions. Here, we present the format.

1. What is the social innovation?

- a. What is the social problem that is solved?
- b. What is the scale of the social innovation in general? (individual level/company level/local/regional/national/European/worldwide, etc.)
- c. How is the social problem being solved in general (theory/concept/mechanism, etc.)?

2. What is the specific policy option for this case?

- a. Describe the policy option.
- b. What is the scale of the policy option?
- c. How does the policy option interact with the social innovation? Where does it connect to it? What is the direct effect, in terms of incentives, bans, etc.?

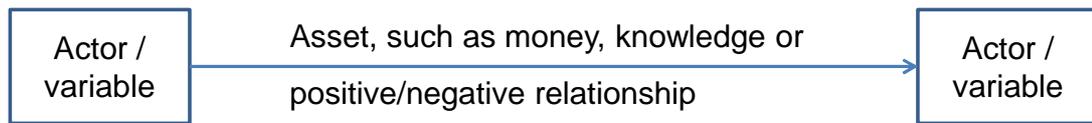
3. Actors

- a. What actors are involved in solving the problem?
- b. What role do the actors play in solving the problem?
- c. What interests do the actors have? What motivates them to contribute to the social innovation?

Actor	Role	Interests

4. Network

- a. What assets (tangible/intangible) are converted, how do they flow through the network? - causal relations between factors relevant for actors, mathematical formulas for transformation.
(Draw a figure/model. The boxes in the model can contain actors as well as variables. The lines between the boxes show the relations between actors/variables and show how assets are being transferred.)



- b.** How is coordination in the network achieved? (specific actor/set of instruments/programme/technique, etc.)
 - c.** How does the social innovation policy option change the structure of the network? E.g. Do new actors enter? Do relations between actors change? Do interests of actors change?
 - d.** How does the behaviour of the network involved in the social innovation change?
- 5. How can we quantify the relations identified in the steps 1 and 2?**
- a.** Information sources: what relations do we have data for, experts, other information sources, etc.?
 - b.** From correlation to causality: what can we do to infer causality?

3 Case 1: Local energy production

1. What is the social innovation? Decent energy production

WADE (World Alliance for Decentralized Energy) defines 'Decentralized Energy' (DE) as:

"Electricity production at or near the point of use, irrespective of size, technology or fuel used - both off-grid and on-grid."

a. What is the social problem that is solved?

The wider use of DE is a key solution to bringing about the cost-effective modernization and development of the world's electricity systems. Existing DE technologies can reduce delivered energy costs and decrease emissions of CO₂ as well as other harmful pollutants.

Decentralized energy production can:

- reduce costs for both electricity consumers and electricity producers;
- reduce wasted fuel;
- lower climate destabilizing carbon dioxide emissions;
- reduce the environmental footprint of providing society energy;
- reduce dependence on imported fuels such as natural gas;
- ensure greater power quality, reduce vulnerability of the grid, and increase self-sufficiency;
- provide the services necessary for the efficient operation of the power grid;
- is a solution for electrifying Remote Areas;
- reduce unhealthy air pollution thus improving quality of life.

b. What is the scale of the social Innovation in general? (individual level/company level/local/regional/national/European/worldwide, etc.)

The scale of decentralized energy production in general is worldwide: from households and public buildings in the Western world, to small villages in the third world.

c. How is the social problem being solved in general (theory/concept/mechanism, etc.)?

Decentralized Energy is a way of thinking about providing energy, especially electricity. Decentralized energy production offers many advantages over conventional power generation in terms of environment, economy, efficiency, security and reliability. The benefits are achieved not just because of how DE technologies generate electricity but also because of where they generate electricity. DE provides electricity where it is required. Because DE generates power where it is needed, much less fuel is required to provide the same services.

2. What is the specific policy option for this case?

Decree experiments decentralized sustainable electricity generation ("Besluit experimenten decentrale duurzame elektriciteitsopwekking")

a. Describe the policy option

The decree (June 2014) aims to provide citizens and companies with the opportunity to deviate from regulations stemming from the Electricity Law 1998, as experiment. The experiments' goal is to examine whether those regulations need to be applied for local sustainable energy generation. The resolution should lead to:

- more use of sustainable energy or cogeneration on local level;
- more efficient use of the available energy infrastructure;

- more commitment of energy users to their energy supply.

The minister wants to measure if these goals are reached in four years (June 2018).

The national government chose to set the contour of possible deviations of the law and the applying terms, in advance. Within that contour, citizens and companies can shape their experiment. After examination, dispensation can be granted. The government chose this method because she wanted to conclude from experiments' results to what extent the regulations indeed have an effect on local sustainable energy stimulation. Furthermore, it is important that stakeholders outside the experiments know what they can expect in advance.

b. What is the scale of the policy option?

The scale of the decree is national.

The decree is applicable for four years. Every year, 10 experiments will be selected for dispensation. The target group is small scale consumers: housing associations or associations of home owners (80%) and SMEs (20%). In total, 80 experiments will be granted.

c. How does the policy option interact with the social Innovation? Where does it connect to it? What is the direct effect, in terms of incentives, bans, etc.?

The aim of the ministry of economic affairs is to save 9,700 kton CO₂ emission in ten years, by stimulating decentralized electricity production.

For this social innovation (decentralized energy production), experts and interest groups see certain impeding factors due to laws and regulations. Examples of ideas for social innovation in practice are:

1. A shared management of production instruments for sustainable electricity (such as windmills and solar panels) by the users of the produced electricity;
2. One wants to deliver the locally produced electricity to the participants by one-self;
3. Maximize the use of locally produced electricity by adjusting the demand to the supply;
4. Include the whole local energy system (production, distribution and use) in one organizational unit;
5. The possibility to charge the local costs and gains to the users, by means of an own price system, billing and payment.

These elements cannot all be realized within the current regulations. Point 4 is not possible because the grid operation is divided from production and delivery. For the operation of the distribution network it is obligatory to point a grid operator. This grid operator needs to perform a number of legal tasks. The tasks, conditions and prices of these grid operator are regulated, which makes it impossible to charge the costs and benefits of grid operation in local energy projects independently. The distribution of energy to small users is bound to a license with prescriptions and supervision as well.

The decree connects to the social Innovation ideas by a shift of responsibilities on three levels:

1. within a cooperation or association, consumers are able to get self-control and to address one another on terms and prices. They get dispensation for their experiment and in return take the responsibility for their own and their environment's electricity distribution;
2. in the experiments, consumers can divide the costs and benefits among the participants in their own manner. Only by the European regulations prescribed examination of the way the prices and terms are set, is still applicable;

3. in the experiments it is possible for housing associations or associations of house owners to self-manage the whole electricity resource (generation, supply, distribution and use). This replaces the division of responsibilities to current producers, suppliers and grid operators, in which the consumer has a limited and passive role.

3. Actors

- › What actors are involved in solving the problem?
- › What role do the actors play in solving the problem?
- › What interests do the actors have? What motivates them to contribute to the social innovation?

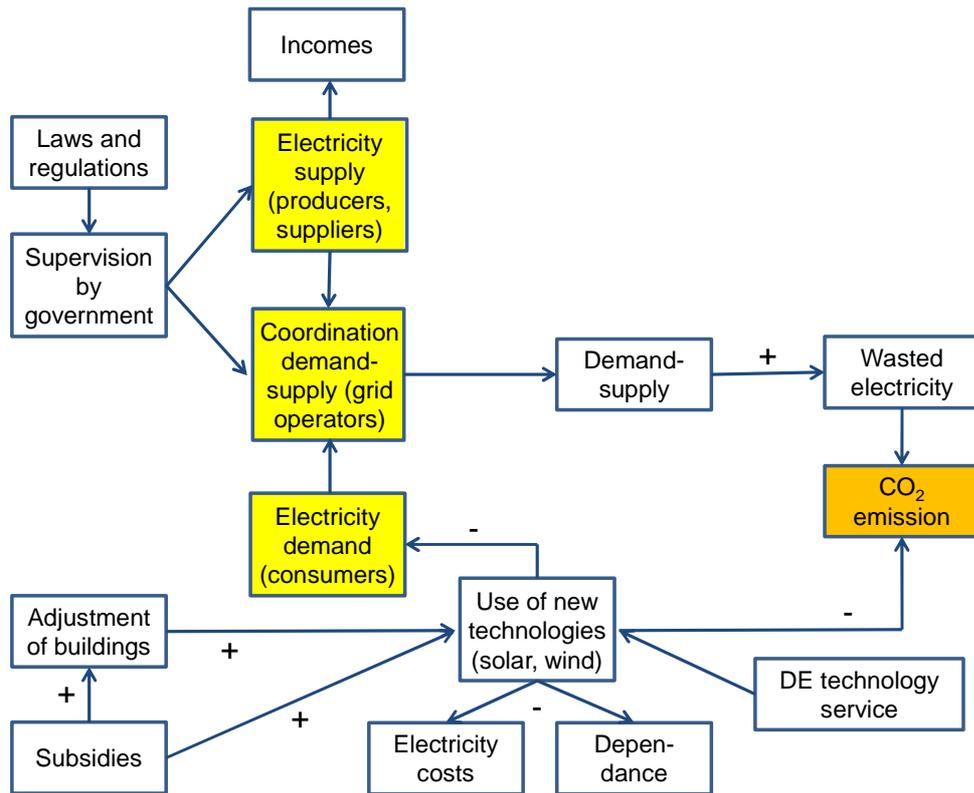
Actor	Role	Interests
Groups of small-scale consumers (max. connected load 3 x 80 Ampère): housing associations/ associations of house owners (80%) and SMEs (20%)	Initiate the experiment: produce, distribute, supply and use electricity locally.	Save money and maybe have idealistic motivations. Also become more independent/more self-sufficient.
Consumers outside the experiment	If the production supply in the experiment is higher than the demand, the surplus can be sold to consumers outside the experiment. However, the experiment cannot supply to small-scale users who are not part of the experiment, because it does not have the required supply license. They need the current electricity suppliers for that.	Save money and maybe have idealistic motivations.
National government: Ministry of Economic Affairs Rijksdienst voor Ondernemend Nederland (RVO)	Remove boundaries by granting dispensation to the experiments. Examine proposals for experiments.	European targets for CO ₂ emission reduction. Also, the opposition (political parties) demand sustainable solutions. Also want the country to become less dependent on imported electricity/limited fuels.
Current electricity producers	The consumers become producers themselves. Except for providing maybe knowledge to the experiments, the role of the current producers is limited.	Increase their profits, enlarge their market share.
Current electricity suppliers	If the own production within the experiment is less than the production demand, the experiment has to buy electricity from 'normal' suppliers to meet the contractual supply obligations to the experiment participants. Also they need the supplier to sell 'overproduction' to consumers outside the experiment.	Increase their profits, enlarge their market share.

Actor	Role	Interests
Regional grid operators	Join the experiment if the consumers choose to leave the network operation up to the regional grid operator.	Increase its profits, enlarge its market share.
Inspectors	Supervision on compliance with the rules.	If there is less supervision needed, this saves time and money.
Third party (maybe this will always turn out to be the grid operator)	The experiment can outsource the activities as producer and as supplier, to the third party.	If this third party is a grid operator, it wants to increase its profits.
Decentralized energy technology service providers	Help producers of local energy with technical issues.	Enlarge their amount of customers.
Interest groups	Promote decentralized energy generation and put pressure on government to take measures which stimulate this.	As little pollution of the environment as possible.
Technology developers	Have to develop the right technology to generate energy locally.	Want to sell new technology to technology users. They join the network because they want their technology being applied.
Housing and building developers	Need to make local energy generation possible in the (new) buildings.	Want to win the assignments for building new buildings or renovating old buildings.

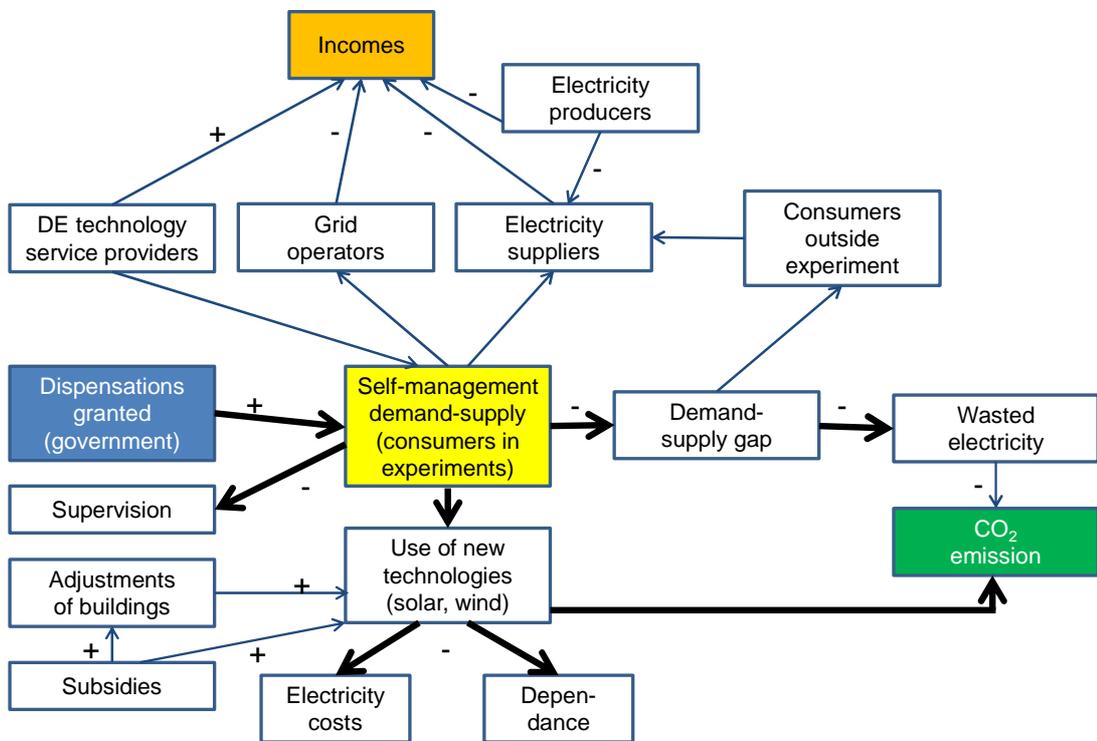
4. Network

- a. What assets (tangible/intangible) are converted, how do they flow through the network? - causal relations between factors relevant for actors, mathematical formulas for transformation.

Different kinds of models are possible to draw. Here, we give an example of a current situation model (before the social innovation) and a model after the policy is implemented.

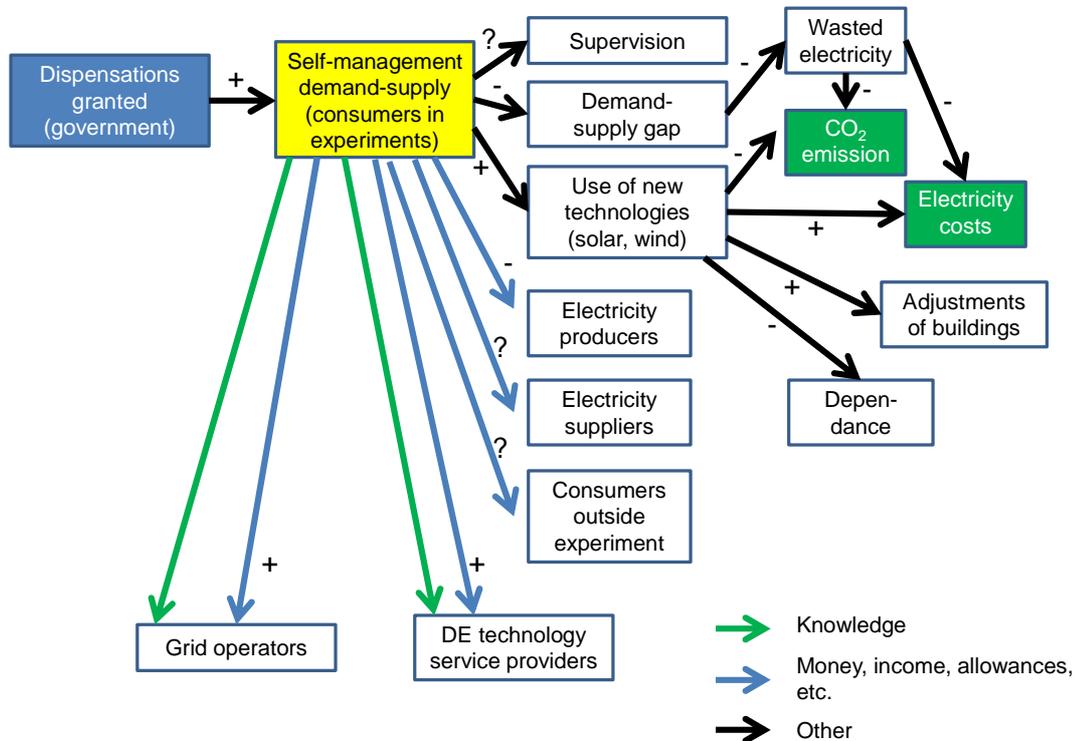


Current situation model (before policy implementation)



Policy implementation model (full model with all possible stakeholders and impacts)

Because the policy implementation model is rather complex, it is also possible to draw a simplified model with only the most probable and important stakeholders and impacts.



Simplified policy implementation model (Model with most probable and important stakeholders and impacts)

Costs:

- Start-up costs for the experiments: total 1,626,000 Euro.
- 16.8 million Euro in total per year administration/organisation costs for the experiments. That is 40% less than the old situation. In the new situation, the experiments pay this instead of the former supplier and grid operators.
- How much will the consumers save on electricity costs?
- Grid operators lose income: 2.9 million Euro per year, that is approximately 1 per mille of their total incomes for electricity.
- Suppliers: they will lose 198 TWh/yr (98,5% of the yearly electricity usage of the consumers joining the experiments). (This can be expressed in monetary value.)
- Producers will lose income.
- If less supervision is needed, this will reduce government's expenses.
- The RVO costs from the experiment proposals examination.

b. How is coordination in the network achieved? (specific actor/instruments/programme/technique, etc.).

Yearly, RVO writes out a tender on behalf of the Ministry of Economic Affairs. RVO judges the proposals and guides the experiments. The Ministry is also responsible for the monitoring of the experiments. This can all be considered ways of coordination. The actual execution of the experiment is in the hands of the parties that do file the request for dispensation.

Two elements:

- Construction and maintenance of the grid (asset management) and

- Guiding energy flows, tempering peak load and influencing demand (system operation).

In the old situation this was all done by the grid operator. The grid operators could be considered coordinator then. In the experiments, another party can do this, for instance the association of home owners itself. But they can also outsource this task to a third party.

- c.** How does the social Innovation policy option change the structure of the network? E.g. Do new actors enter? Do relations between actors change? Do interests of actors change?

Next to the traditional actors (producers, suppliers and grid operators), a new actor enters the network: the dispensation holder of the experiment (small scale consumers). This new actor takes over tasks and obligations of the traditional parties. The new actor becomes producer and supplier.

In some experiments, the grid operator will no longer be involved since the dispensation holder takes over its tasks and obligations (see also answer b).

As producer, the dispensation holder has program responsibility: a certain supply of electricity needs to be accompanied by an even amount of electricity demand. If there is more supply than demand, the electricity can be sold to third parties outside the experiment. However, the dispensation holder does not have the license to do this. This means the traditional supplier is needed. If the demand is higher than the supply, the dispensation holder has to buy extra electricity from the traditional supplier. The dispensation holder can outsource its program responsibility to a third party. This can be the traditional grid operator.

- d.** How does the behaviour of the network involved in the social innovation change?

The expectation is that due to the self-management of the experiments, consumers will be more prone to find a balance in demand and supply of electricity. Therefore, they maybe will be more conscious of their electricity use.

The government may change its behaviour from supervisor to facilitator by providing room for self-management in the experiments.

- 5.** How can we quantify the relations identified in the steps 1 and 2?

- a.** Information sources: what relations do we have data for, experts, other information sources, etc.

The Ministry of Economic Affairs will monitor the experiments. We could try to get information from them.

CBS numbers: “hernieuwbare energie”

<http://statline.cbs.nl/statweb/dome/?TH=3800&LA=nl> and “decentrale productie”
<http://statline.cbs.nl/StatWeb/selection/default.aspx?VW=T&DM=SLNL&PA=37823WKK&D1=5%2c11%2c14-16&D2=0-2&D3=0&D4=8&D5=0%2c2%2c7%2c12-14&HDR=G3%2cG2%2cT&STB=G1%2cG4>

“energieverbruik”

<http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=81528NED&D1=a&D2=0,2,13,33,74,149,328,381,448&D3=a&HDR=T&STB=G1,G2&VW=T>

- b.** From correlation to causality: what can we do to infer causality?

Try to get the baseline data from the experiments? Compare years of CBS numbers?

The progress of the experiments will be monitored by asking the dispensation holders to (let) perform measures which can show achieved results. Also, the dispensation holders are asked to point out a comparable electricity usage situation

which does not get the dispensation. This could provide information to compare and therefore study causality.

4 Case 2: Workplace Innovation

1. What is the social innovation? Workplace innovation (WPI) - Co-working spaces

Workplace innovation (WPI) activities are aimed to benefit both, employees and organisations. As Oeij et al. (2011) state, WPI is “a strategic renewal in organizing and organizational behaviour. It reflects an organizational capability, which consists of four resources: strategic orientation, product-market improvement, flexible work, and smart organizing”. WPI not only increases performance, it also has organizational and social goals, such as improving the quality of work and development of human talents (Oeij et al., 2011). The main idea is to simultaneously make organisations’ performance and quality of work better.

Flexible work can reach this goal: increase organisations’ performance and employees’ quality of work. One of the forms how working becomes more flexible is **coworking spaces (CS)**. This social (workplace) innovation is a form of working in a shared working space by workers of different employers (and usually less formal environment). Coworking space can be defined as “a hosting, working and meeting place for entrepreneurs who are carriers of projects and ideas and wish to share them with others; this place is powered by a specific animation intended to create links inside and outside of the community of co-workers. The room and equipment layout, as well as the specific animation model installed, are studied in order to encourage meeting, collaborating, discussing and working (...) Through co-working, collaboration between actors is encouraged and in this way an innovating ecosystem is generated on the local level” (Moriset, 2014).

a. What is the social problem that is solved?

Hillman (2008), founder of a coworking space, summarizes the main motives of coworking:

- loneliness;
- lack of motivation;
- need and wish to learn new things;
- lack of up-to-date information about what's going on in your region;
- disordered work/life balance.

All those problems can be solved with coworking spaces.

Self-employed workers, start-up creators, people who work without a permanent contract can work everywhere, where they can find suitable for work settings. However, like big companies’ workers who have nomadic work, they may lack interaction (both social and professional), and meeting opportunities (Moriset, 2014).

Home-based employees and small teams of workers need well-connected environments that are not too large, not crowded and loud (as various open spaces are); those environment also need to be ergonomic and contain work atmosphere, but without the isolation that is created by home working. Nomadic workers need a “third-place”, which a coworking space can be (Moriset, 2014).

b. What is the scale of the social Innovation in general? (individual level/company level/local/regional/national/European/worldwide, etc.).

First coworking space was created by Brad Neuberg in 2005 in San Francisco. With time, the concept was adopted in other cities and countries and many more coworking spaces were established. As of February 2013, 2500 spaces had been

identified worldwide, around 1080 in European Union. Most coworking spaces can be found in Germany, Spain, United Kingdom and France (Moriset, 2014).

Coworking is gaining popularity around the world, this trend is noticeable in Europe as well. However, in some places it is much more advanced than in others, so this idea has a lot of potential to grow. The growth is mostly sporadic, non-systematic and based in major European cities.

- c. How is the social problem being solved in general (theory/concept/mechanism etc.)?

One of the main social problems is that people, who are knowledge workers and can live and work anywhere (e.g., “lone eagles”), or those, who are forced by organisational or domestic reasons to work from home, are socially isolated from their peers and lack communication. Co-working puts likeminded minds together and solved the face-to-face communication problem (Moriset, 2014). There is quite a bunch of social problems that are (or can be) solved by coworking spaces: better work/life balance, more flexible working time, so increased efficiency as well (especially important, if work is defined by tasks/goals, not time), reduced commuting time: choosing coworking area that is in a convenient place and commuting there off-peak; less formal to generate new ideas and meet like-minded people.

2. What is the specific policy option for this case?

- a. Describe the policy option

Regional council of the Paris Region sponsors setup of tele centres and co-working spaces (“Télécentres et espaces de co-working” in 2012 and 2013, “Espaces de travail collaboratif” in 2014).

The Paris Region aims to support the emergence and development of such sites (co-working spaces and tele centres) in the Paris area to participate in the economic dynamism of the region and contribute to the improvement of working conditions of a maximum population. Financial assistance from the Region, to the limit of 50%, focuses on the investment for the construction and equipment locations as well as computer equipment.

Of the 36 applications received in March 2014, 18 projects were approved for a total grant of 1,310,425.30 Euros.

For the first time, SMEs, SCOP (Société coopérative et participative, Worker cooperative) and SCIC (Société coopérative d'intérêt collectif, Social enterprise) could be eligible for this funding. Among the projects funded in 2014 year: 6 SMEs, 1 SCOP, 8 associations, 3 communities.

- b. What is the scale of the policy option?

The scale of the policy is regional, as the Region of Paris is supporting the development of regional co-working spaces. Urban and Paris city regions are represented the best, though all Region of Paris is eligible for funding. Since the launch of the first call to project “Telecentres and co-working spaces”, in 2012, the number of assisted projects has increased each year. A total of 47 projects has benefited from the Paris regional support in three years.

Overview:

- 2012: 13 projects selected (budget of approximately 1 million Euros)
- 2013: 16 projects selected (budget of approximately 830,000 Euros)
- 2014: 18 projects selected (budget of approximately 1.3 million Euros).

- c. How does the policy option interact with the social innovation? Where does it connect to it? What is the direct effect, in terms of incentives, bans, etc.?

Policy option directly supports the WPI of co-working spaces as it is aimed to de-

velop this social innovation. There are two main paths of the support: financial aid (up to 50 %) and encouraging or part-initiating the foundation and development of the co-working spaces.

It should be noted that co-working spaces are mostly based in highly-urban areas. More knowledge could be shared with rural regions in order to show advantages of co-working spaces.

In the first two years, only community-based or associations-based organisations were allowed to benefit from the policy. In the third year (2014) SMEs, SCOP and CICS were also allowed to apply. This enabled the policy to have a bigger positive effect on spreading the knowledge, awareness and development of this social innovation.

As part of the co-working spaces are established, while public/government and private/community organisations cooperated, public bodies related to policy makers can ease the process of submitting proposals for funding. In France, the state and public authorities are involved in regional projects; the French ministry of industry has recognized co-working as a driver for innovation and economic development. However, little is done to unite European Union countries policies in regard of social innovation and workplace innovation.

3. Actors

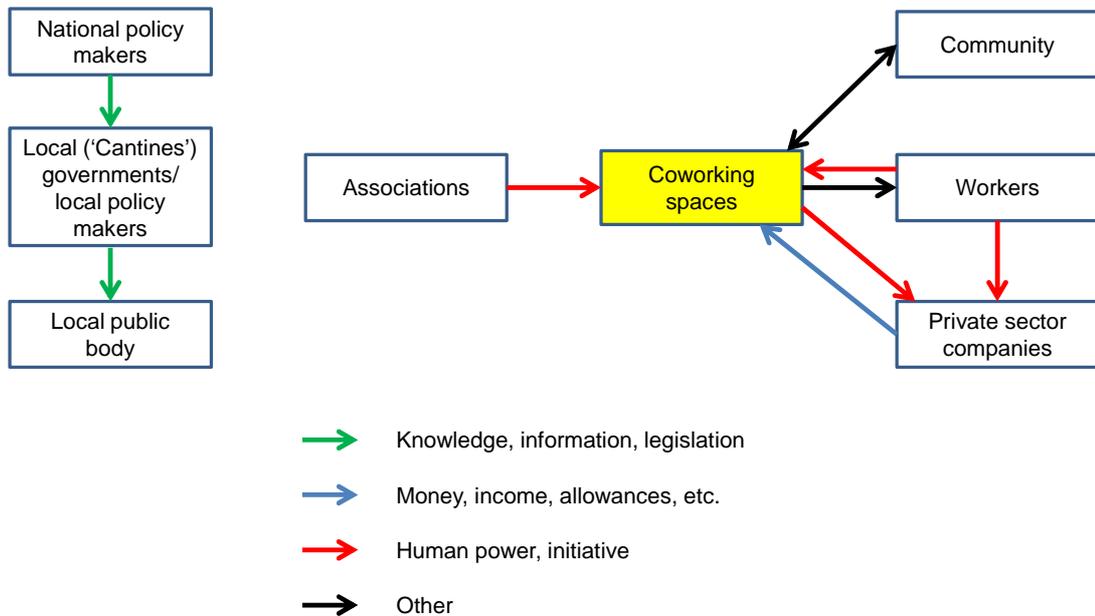
- a. What actors are involved in solving the problem?
- b. What role do the actors play in solving the problem?
- c. What interests do the actors have? What motivates them to contribute to the social innovation?

Actor	Role	Interests
Workers	Self-employed workers, part-time workers, home-based workers, etc. Working in co-working spaces and/or initiating their foundation.	Willing to improve work/life balance, connect to like-minded peers, short distances to work, increase motivation, access to needed equipment, learning new things/technologies, updating information, etc.
Local public body	Improve co-working infrastructure and awareness of co-working, help to establish co-working spaces (co-founding).	Better working conditions for workers, social innovation as economic trigger, local economy growth.
National policy makers	Setting national policies and targets.	Societal, economic, cultural growth.
Local ('Cantines') governments/ local policy makers	Design policies that scale-up, initiate social innovations (co-working spaces) or remove barriers that disable their growth.	Local economy growth, better quality of life and work, congruency with national goals (co-working - driver for innovation and economic development).
Private sector companies	Companies that allow their employees to work in CS and/or co-found co-working spaces.	Flexibility of hiring new employees: the employee pool is bigger when location is remote. Larger prospective employee pool means more flexible salary. Social responsibility to offer high quality work and maintain a name

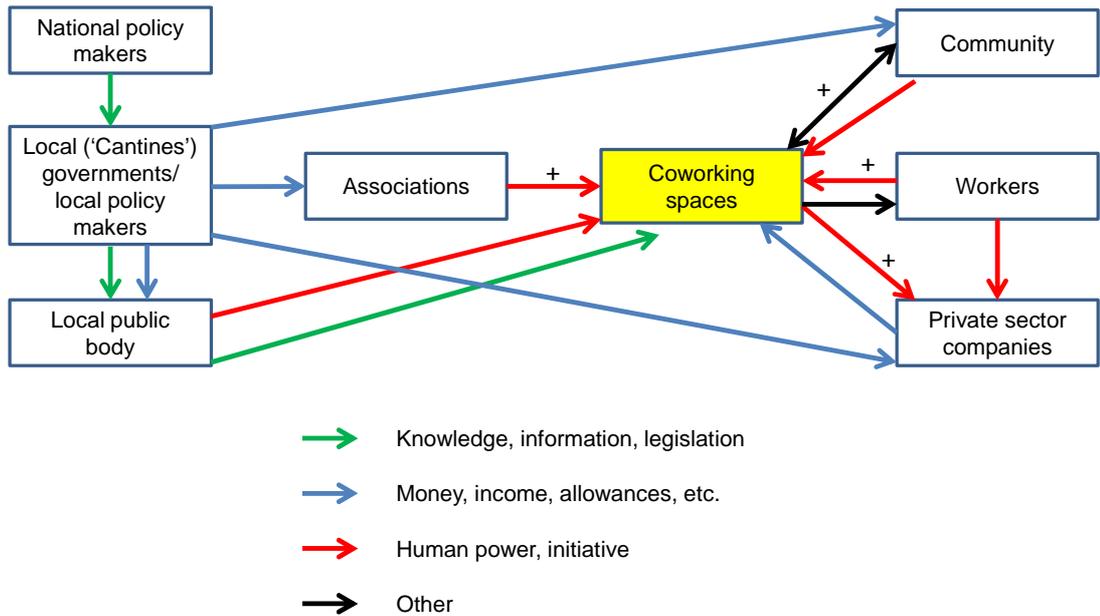
Actor	Role	Interests
		of a desired employer.
Community	Environment in which co-working spaces exist.	Increased quality of life and work for locals, increased heterogeneity of society, potential for employment, reduced traffic in the city.
Associations	Founding/co-founding of new co-working spaces.	Increased local economy, increased quality of life and work for locals, increased heterogeneity of society, reduced traffic burdens in the city.

4. Network

- a. What assets (tangible/intangible) are converted, how do they flow through the network? - causal relations between factors relevant for actors, mathematical formulas for transformation.

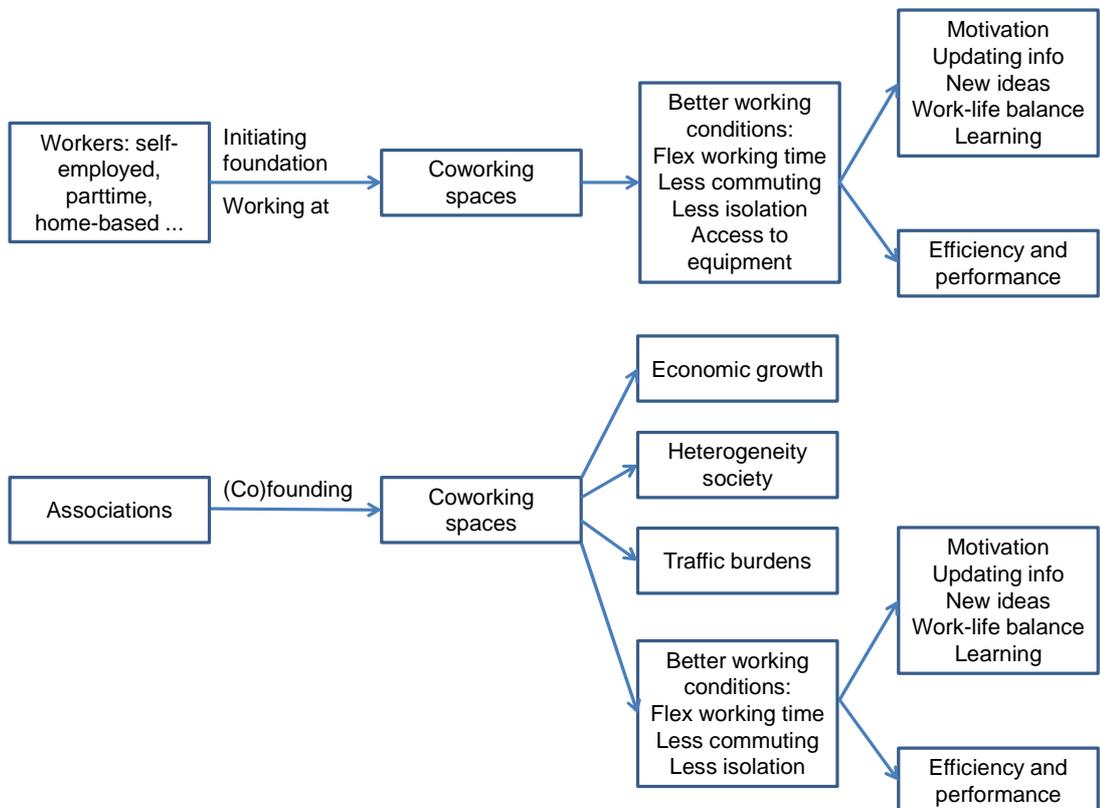


Current situation model (before policy implementation)

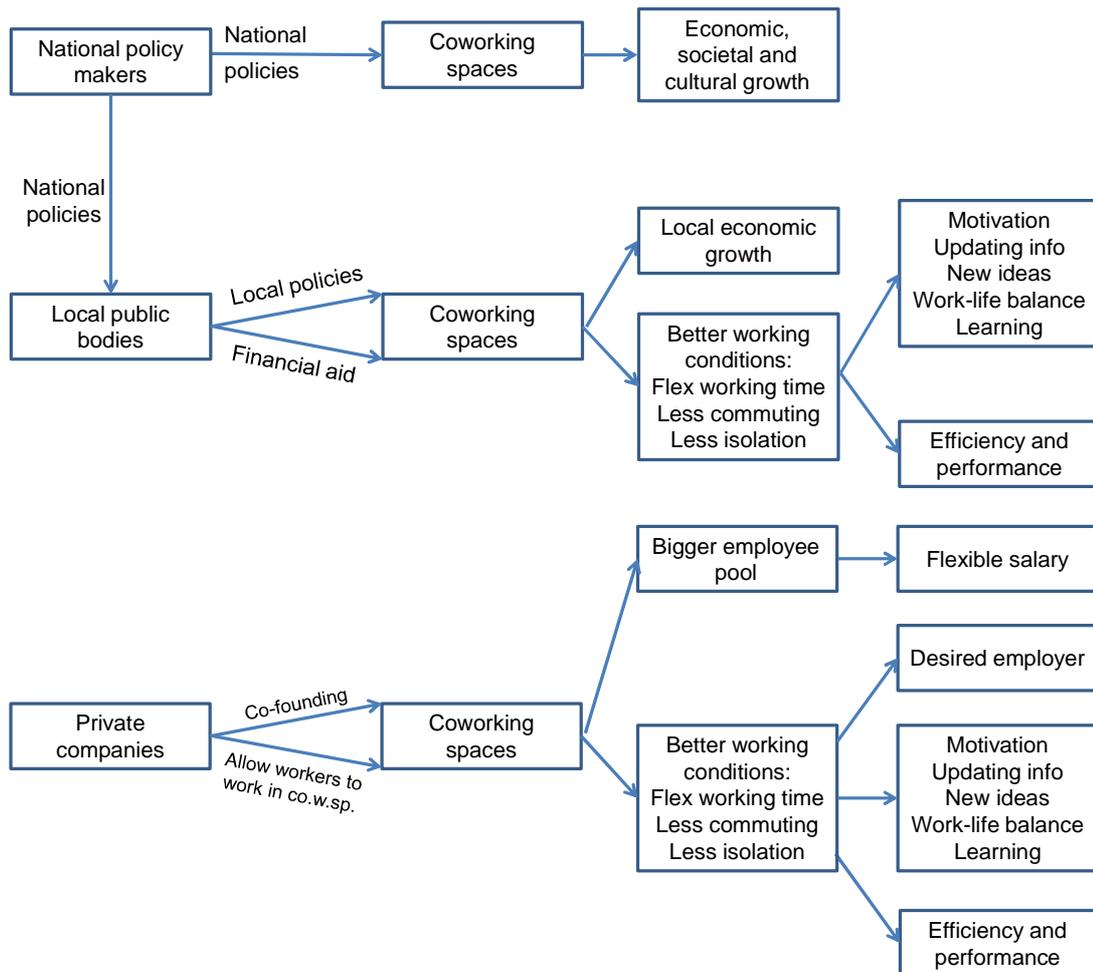


Policy implementation model

The models above do not seem concrete enough to perform an IA calculation. One possible solution is to draw a model per stakeholder view. Since the customer, who is interested in an IA on a specific social innovation, will have a limited amount of desired impacts, this is a way to bring more focus into the model and facilitate future calculations.



Models per stakeholder



Models per stakeholder (continuation)

- b.** How is coordination in the network achieved? (specific actor/set of instruments/programme/technique, etc.)
- Local government (of the Region Paris) calls to participate in a project to get funding for co-working spaces and tele centres creation and development. Submissions are judged and the best ones are selected by the local government.
- A public organization “*La Fonderie*” is supporting co-working events and spaces. In 2012, *La Fonderie*, an organization linked to Paris’s local government, has supported the last Co-working Europe Conference and the Co-working Weekend. The main focus of the organization was aimed at connecting the different actors and communities of Co-working.
- La Fonderie’s* purpose is to improve infrastructure and awareness with the help of the local Cantines’ governments.
- In France, the state and public authorities are highly involved in regional economic development projects, and the French ministry of industry has even recognized co-working as a driver for innovation and economic development. Thus, it is no longer a surprise to find many co-working projects supported by long-term public and private partnerships.
- c.** How does the social innovation policy option change the structure of the network? E.g. Do new actors enter? Do relations between actors change? Do interests of actors change?

Actor	Change
Workers	Increased (or new) interaction with local community; start to work in companies beforehand knowing that the work location will be in co-working spaces; increased amount of interaction with co-working spaces in general.
Local public body	Essentially changed role - from supporters to active co-founders of new CS. Cooperation with other associations in order to support or found new CS.
National policy makers	No changes.
Local (Cantines') governments/ local policy makers	CS funding; new relations with the local public body.
Private sectors' employers	Are able to recruit more people from CS.
Community	Bigger interaction with workers, more involved in general.
Associations	They have more funds to establish or develop new CS, new cooperation with local public bodies.
Private sectors' companies	Significantly changed role: since 2014 they are able to apply for funding and establish new CS. More employees can be hired as remote-workers.

- d. How does the behaviour of the network involved in the social innovation change?

New paths can be seen in the graph. Most important - dynamics of the whole community can change because of a CS in neighbourhood?

5. How can we quantify the relations identified in the steps 1 and 2?

- a. Information sources: what relations do we have data for, experts, other information sources, etc.
Amount of funding and established companies can be found in government's reports. E.g.
<http://www.lafonderie-idf.fr/resultats-appel-projet-regional-coworking-19719.html>
<http://www.lafonderie-idf.fr/resultats-de-lappel-a-projet-telecentres-et-espaces-de-coworking-2012-5329.html>
Amount of workers can be found in some of the CS web-sites and demographic statistics. E.g.: <http://en.numa.paris/>
- b. From correlation to causality: what can we do to infer causality?
The example of this policy towards social innovation (co-working spaces) gives good support to possible causality. Different French regions or other countries can be used for comparison. Some comparison between policy-funded and non-funded CS can be made.
Activities to get the right information, are drafting, literature review and group sessions. (Group sessions with colleagues or with experts who are involved in the social innovation in practice?)

5 Case 3: Car sharing

1. What is the social innovation?

Car sharing is a type of car rental where people rent cars for short periods of time, often by the hour. The organization renting the cars may be a commercial business or the users may be organized as a company, public agency, cooperative, or ad hoc grouping.

Three forms:

i. Carpooling:

- www.blablacar.nl → Offer empty chairs, the car owner sets the price;
- Share travel costs;
- Meet people who travel the same way;

ii. Rent privately owned vehicles:

- Snapp car <http://www.snappcar.nl>;
- Uber <https://www.uber.com/>;

iii. Rent vehicles:

- Car2go → electric drive for members. <https://www.car2go.com>;
- www.zipcar.com “wheels when you want them”;
- www.greenwheels.com “Greenwheels offers the ultimate urban mobility service - easy to use, always available and fun!”;
- <http://www.carplus.org.uk/car-sharing-clubs/car-clubs/>;
- <http://www.citycarclub.co.uk/>;
- <http://www.co-wheels.org.uk/>;
- A car that is local, fuelled and ready to go;
- Pay by the hour;
- App: find the closest car to your position, book and drive away in minutes;
- Vehicles at reserved parking spots;
- Membership about 5 euro a month

Dutch Landelijke Vereniging voor Gedeeld Autogebruik: <http://deelauto.nl/lid-woorden/>

a. What is the social problem that is solved?

- City space: Much city space is used by motorways and parking lots
 - Parking problems
 - Cars standing still 23 hours of the day, used 1 hour a day
- Environment
 - Sharing cars means less cars needed (= less resources)
 - Less cars used = less emissions = better air quality, less CO₂
 - Less noise
- Social policy
 - Affordable car use for lower incomes
 - Less cars on the road; less traffic jams

Private problems solved:

- Less hassle → no maintenance, refuelling, cleaning
- Being able to afford a car → costs of owning a car (purchase, maintenance, tax, insurance, parking) are shared. 90% of car costs are fixed, 10% are variable; sharing those fixed costs means cheaper car use.
- Local = time-saving → no hassle of ‘classic car renting’ (takes a lot of time to travel to the hire car, fill out forms, etc.)

Bonus:

- Community: sharing cars with neighbours/friends/acquaintances → building/improving the local community
- b. What is the scale of the social innovation in general? (individual level/company level/local/regional/national/European/worldwide, etc.).
 - Main driver = company level → social enterprises (UK) and BVs (NL) offer car networks and car maintenance
 - Western phenomenon, such as UK, Germany, Switzerland, NL, USA
 - Zipcar is the largest car sharing network in the world, with more than 767,000 members in December 2012.
In The Netherlands Greenwheels is the largest car sharing company. Greenwheels operates in about 100 cities in the Netherlands (over 1,700 locations) and in 25 German cities.
In March 2013, there were 5,275 shared cars in The Netherlands.
- c. How is the social problem being solved in general (theory/concept/mechanism, etc.)?
Networks of car owners and car users

2. What is the specific policy option for this case?

- a. Describe the policy option
 - Municipality level: rules about parking spots
 - Provincial level: investments in parking spots/regional public transport
 - National level: knowledge sharing
 - Since mobility policies are at municipality level, this policy level impacts most on car sharing. A quick scan of municipality websites learns that towns/cities...
 - offer parking spaces for car sharing companies (Amsterdam);
 - offer lower parking prices for privately owned shared cars (Den Haag, Utrecht, Groningen);
 - stimulate shared car use by promoting car share companies on the city website (Gorinchem, Zeist, Purmerend, Amsterdam);
 - identify want for car-sharing among residents (Baarn).
 - It might be interesting to compare multiple cities with different parking policies.

At national level (<http://wetten.overheid.nl>) no law contains the word 'autodelen' or 'car sharing'.

- b. What is the scale of the policy option?
Car sharing is most prevalent in cities with parking problems, such as Amsterdam.
- c. How does the policy option interact with the social innovation? Where does it connect to it? What is the direct effect, in terms of incentives, bans, etc.?
Towns and villages can stimulate car sharing by improving procedures for parking spaces and higher parking rates for second car owners.

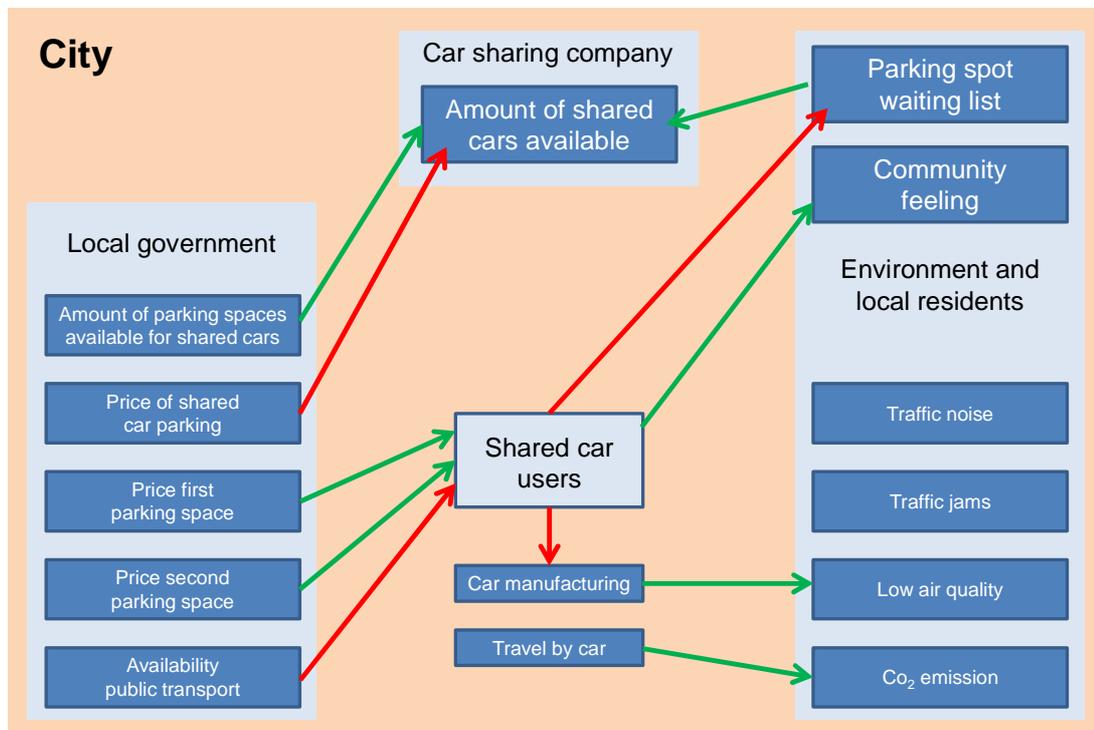
3. Actors

- a. What actors are involved in solving the problem?
- b. What role do the actors play in solving the problem?
- c. What interests do the actors have? What motivates them to contribute to the social innovation?

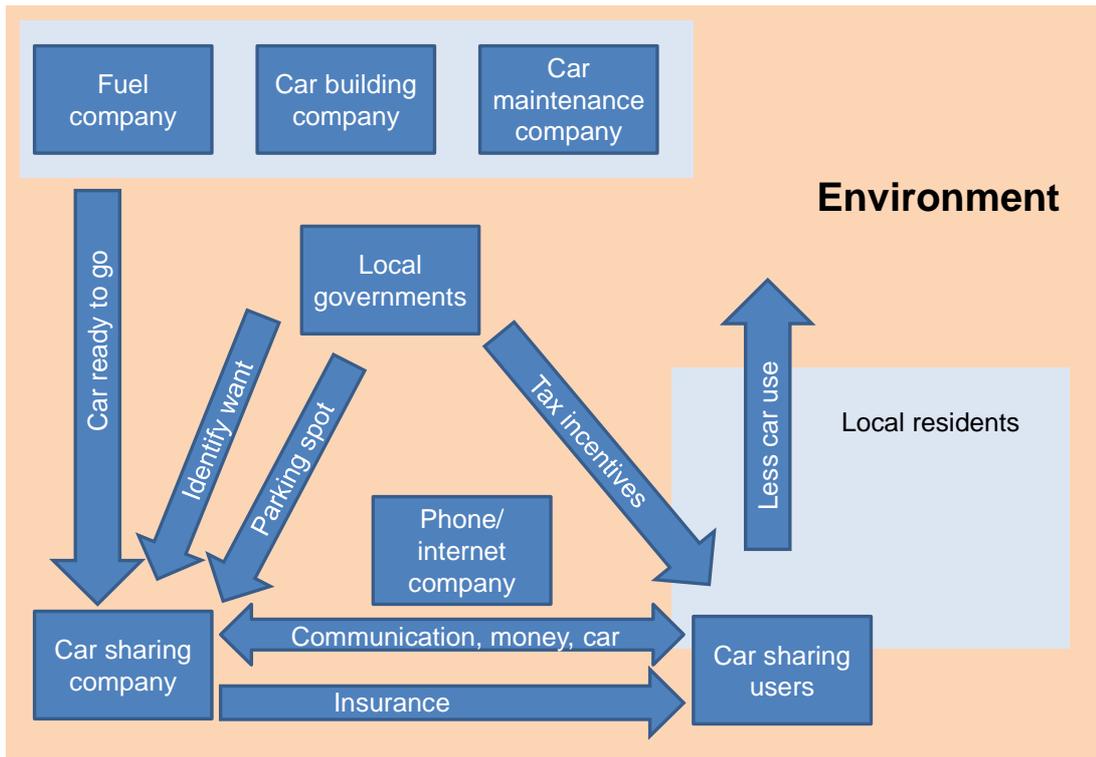
Actor	Role	Interests
Car users	Driving shared cars	Low costs, user friendly, no hustle
Local residents	Neighbourhood users, house owners	More parking space, more living space, clean air
Car share companies	Owning cars, managing their use, marketing	More shared car use
Local government (municipality)	Parking policy, local environmental policies, quality of living policies. Identifies want/need for shared car use Provides information towards car users	Solving parking problems Improve air quality in town Improve accessibility of villages
Local government (provincie)	Public transport policy	Solve traffic problems
Phone company/app/communication technology	Communications between car share platform and car users	More shared care use
Car builders	Selling cars/car parts R&D: more sustainable cars. Electric cars	More car use
Car maintenance company	Selling maintenance	More car use
Fuel company	Providing car fuel	More car use
Environment	Local air quality, flora and fauna	Less CO ₂ , less emissions

4. Network

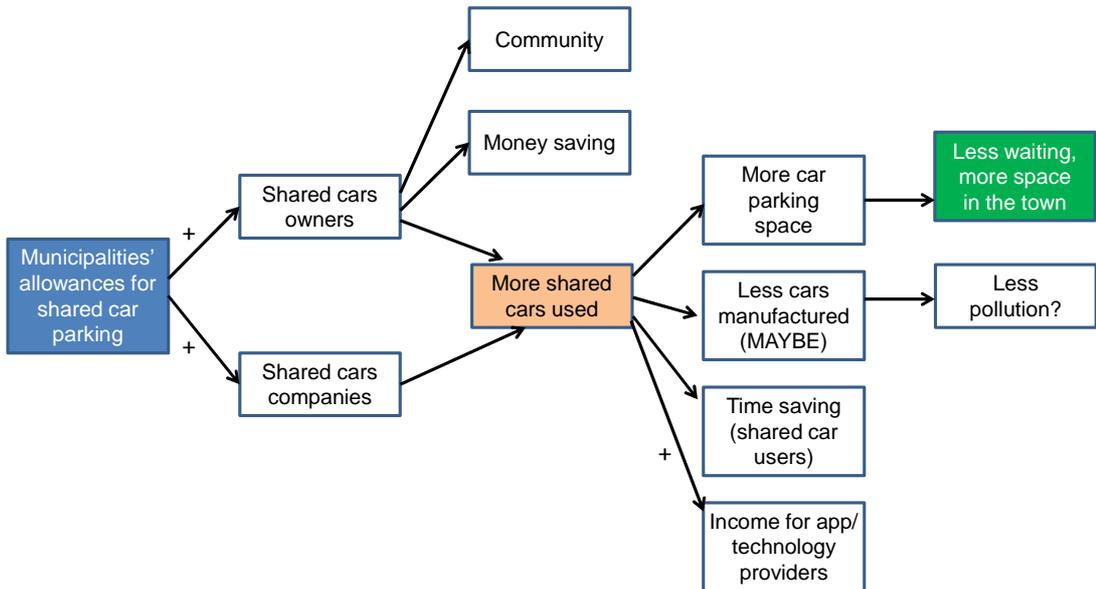
- a. What assets (tangible/intangible) are converted, how do they flow through the network? - causal relations between factors relevant for actors, mathematical formulas for transformation.



Baseline situation model

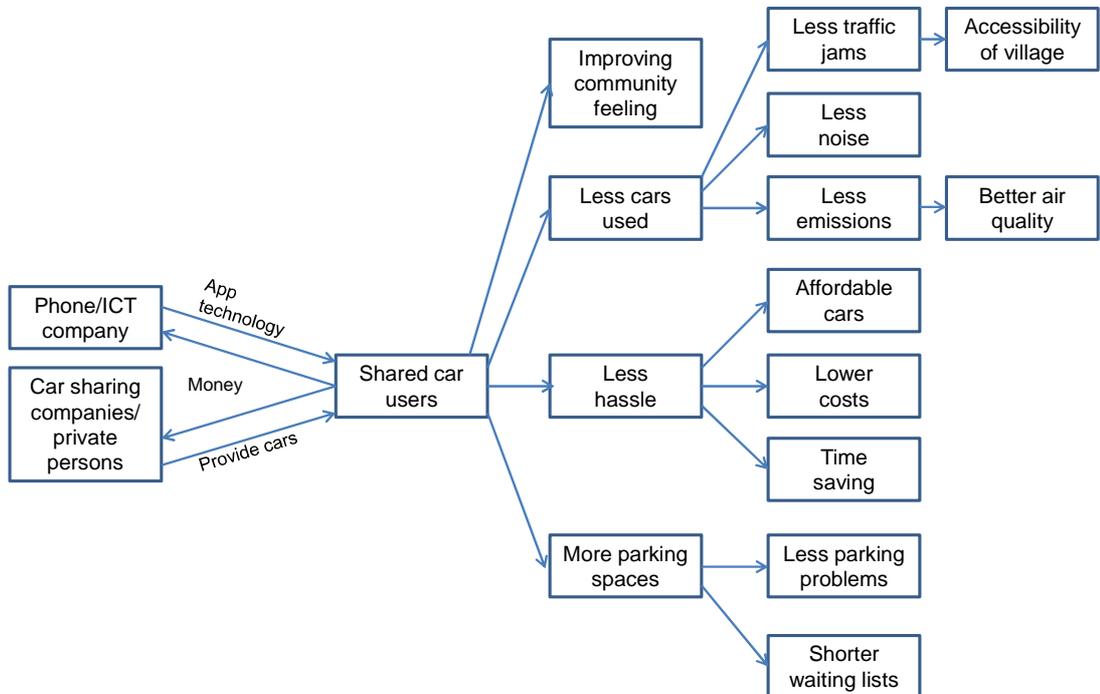
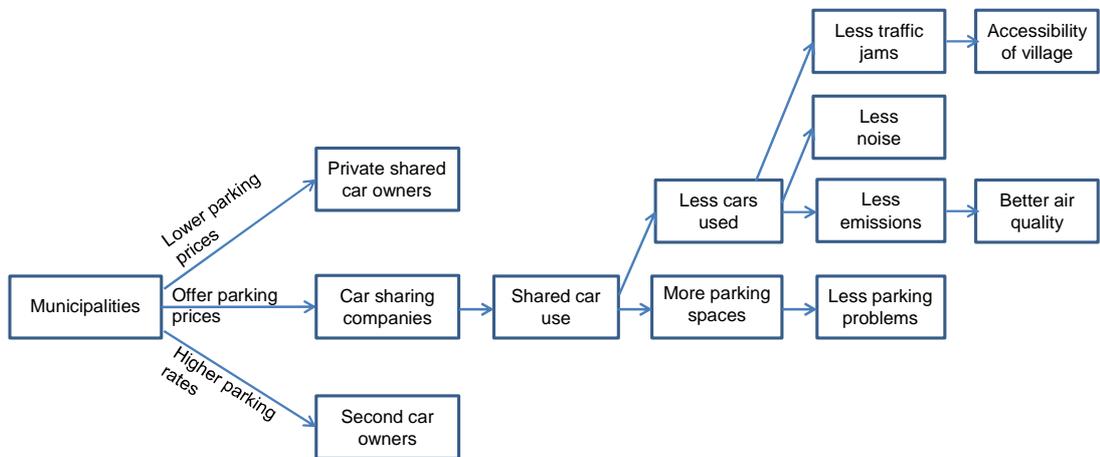
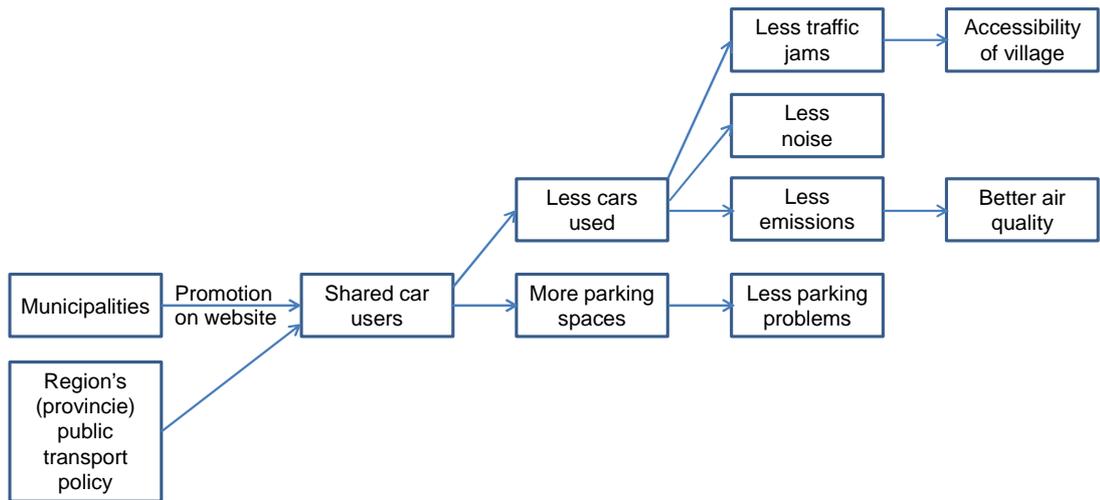


Policy implementation model

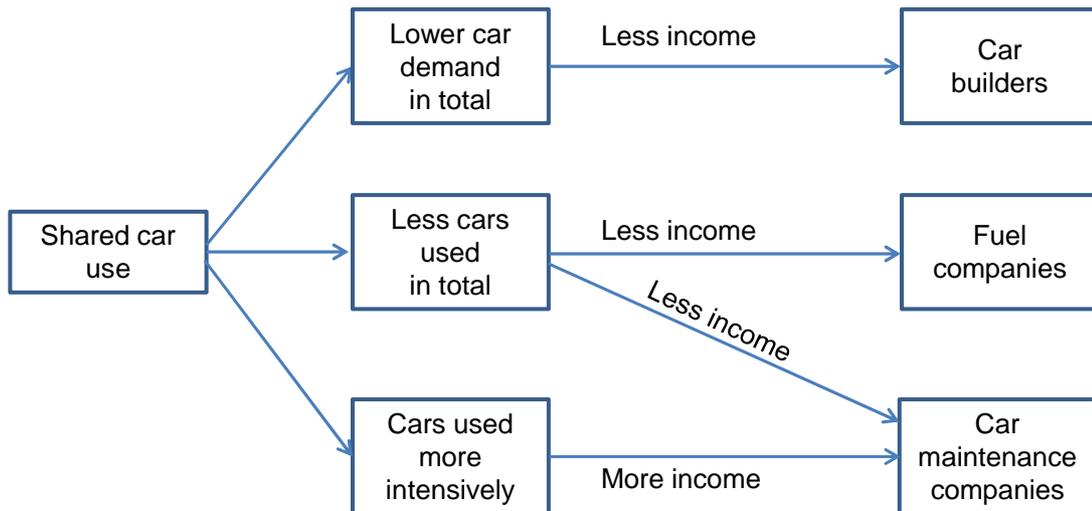


Simplified total overview model

Yet another possibility is to construct models per stakeholder in the form of a decision tree. This makes it easier to follow chronological/causal relations.



Models in decision tree form



Models in decision tree form (continuation)

- a. How is coordination in the network achieved? (specific actor/set of instruments/programme/technique, etc.).
Car sharing company manages the network between car owners, car users and third parties such as car maintenance companies.
- b. How does the social innovation policy option change the structure of the network?
E.g. Do new actors enter? Do relations between actors change? Do interests of actors change?
Higher cost of second car parking
- c. Car users → more willing to use shared cars
 - Parking spots for shared cars
- d. Higher availability of shared cars → more people have access to a local shared car
 - How does the behaviour of the network involved in the social innovation change?

5. How can we quantify the relations identified in the steps 1 and 2?

Information sources: what relations do we have data for, experts, other information sources, etc.

Shared cars use

- Number of car owners;
- Shared car use;
- Number of shared cars in a specific town, 'shared car density';
- Number of shared car subscriptions.

Environment

- CO₂ emissions;
- Air quality;
- Noise;
- Data available for cities?
- City space;
- Number of traffic jams;
- Parking spots waiting lists.

Data on possession of cars in Amsterdam:

<http://www.amsterdam.nl/gemeente/organisatie-diensten/ivv/publicaties/nota%27-uitgaven/#Luchtkwaliteit>

Expensive parking license for second car in The Hague :
<http://www.binnenlandsbestuur.nl/ruimte-en-milieu/nieuws/dure-parkeervergunning-voor-tweede-auto-heeft.8664610.lynkx>
Facts and figures The Hague (among others car possession, CO₂ emission):
<http://www.denhaag.nl/home/bedrijven-en-instellingen/to/Feiten-cijfers-en-onderzoeksrapporten-gemeente.htm>
<http://denhaag.buurtmonitor.nl/>

6 Lessons learned and future actions

What can we learn from the three case examples in terms of Possibilities, Difficulties and Method? Here, we shortly discuss this by focusing on the traditional characteristics of the IA. We see that there are some difficulties, but also enough possibilities for the future execution of an actual IA on social Innovation.

Relevant aspects for IA

Starting point is a clear baseline scenario

This principle requires that the baseline scenario can be identifiable, in terms of the problem, the objectives and the main policy options with the details mentioned in the format.

The starting point is a social problem. This is the need or trigger for the social innovation. The social innovation is a reaction to a problem people experience and which is not solved by a higher authority. It occurs bottom-up.

Therefore, one should try to make a baseline model without the social innovation and then add the social innovation in a second model and see what changes.

Starting point can also be the stimulation of a social innovation, to scale it up or strengthen it. One can also try to incorporate it all in one model: show the effect of the social innovation and what one can do about it with policy options.

Another question is: what is the actual subject to assess? Assess the social innovation effect or the policy effect to stimulate social innovation?

Policy options usually arise after the social innovation is already there. Because of this, it might often be difficult to find/describe a baseline model where there is no social innovation. Then, what is the baseline model? One of the possible solutions is to find similar cases (social settings) where social innovation of interest is not present and use them as the baseline scenario.

In conclusion: the starting point should always be the most complete model with all the possible factors. Who decides what the relevant factors are, is based on the stakeholder perspective. Then you can focus more.

Causal relations

The approach builds on causal relations. That means: it develops a structure on how impacts are created, running from policy options via intermediate indicators to impacts, with causality as the consequential mechanism behind the structures.

One should focus on the research driven causalities. It is not that easy to find scientific research on the topic though.

It is difficult to make a model that is understandable for others. However, it is possible to make a decision tree, time-line effect to make it more clear. In this way, causal relations will be more clear.

To calculate causal relation all the data that are relevant to the model (represented with arrows) are needed. Therefore, (large scale) surveys may be needed.

In some cases the effect of social innovation impact might be relatively small. Therefore, to statistically prove effect and causality, well-defined and powerful assessment methods might be needed.

Static

The approach can be dubbed to regard the world as static rather than dynamic. That is: it focuses on comparing two or more states, e.g. the baseline with one or more alternative states. These states are characterized by differences in, notably, policy options and impacts.

Multi-stakeholder perspective: this is new!

The approach adopts a multi-stakeholder perspective. It does not provide a definitive framework for aggregating these perspectives into final criteria on which to base a decision, allowing room for political decision making.

If you know which stakeholder you are focusing on it is easier to calculate effects. The policy implementation model is simplified to represent only one stakeholder's perspective. In this way there are less relevant actors and changes that need to be analysed, so it is easier to gather needed information and make calculations of the impact. If you focus on society, it is much more complex compared to the individual stakeholder view (more actors, more relations, more changes). However, in the end we do want know the societal impact of the social innovation.

Disaggregated as well as aggregated

The approach provides information on a number of levels of aggregation, allowing for a rich understanding and assessment of the effects of different policy options.

Quantitative if possible, otherwise qualitative information

The approach provides both quantitative as well as qualitative information, with a preference for the former (explain if quantification is not possible, otherwise quantify).

Instead of specific numbers, one can also use terms like "better/worse", "smaller/bigger", etc. See the example models with the plusses and minuses.

Focus on social, environmental and economic impacts

The approach focuses on three impact-domains. See also multi-stakeholder view. Stakeholders set the level. Social innovations primarily aim for a social effect, but can also have an environmental and economic effect.

Inclined to favour incremental steps

An implicit assumption is that information on the identification and assessment of impacts of policy options are to be grounded in empirical observations. Without a proper grounding, any claim about causality will be hard to substantiate. This implies that policy options that deviate little from the base situation are more suitable to be evaluated with this approach, than policy options that are "totally new". The latter lack the information base for a proper identification of impacts and assessment of the causal relations.

This applies to the policy options. The social innovation mostly is a large change.

Treats the institutional context as given

The IA approach used in these analyses treats the institutional context as a given one. In other words: there is no focus on impacts on the institutional context, relevant when comparing countries. The context stays stable. Everything around the social innovation stays the same. However, those IA assumptions are in disagreement with the idea that social innovation might change the social fabric and institutional context. Before applying IA on any social innovation case, this disagreement has to be taken into consideration.

Does not allow for contextualization, i.e., is a general approach

The IA approach used in these analyses relies on the assumption that results of an IA following from analysing certain information from a certain policy context, are applicable in other policy contexts. This is a generalizability assumption that requires limited scope for recontextualization of the issue at hand.

One assumes that he has put all relevant factors in the model, so that he can use it in other contexts. Usually social innovations are context-specific, but this disagreement in assumptions can be overcome by finding a middle ground.

Method

How to gather information on numbers: first RCTs, then literature, then expert views, then assumptions.

To end, IA can indeed be applied on social innovations, but additional considerations, as described above, should be taken into account. Our developed IA format for social innovation cases and the example case descriptions can help to facilitate this process.

Literature

Hillman, A. (2008). 6 Reasons to Start Co-working, 7 November, 2008.
<http://mashable.com/2008/11/07/reasons-to-start-co-working> (accessed 11 October, 2014).

Moriset, B. (2014). *Building new places of the creative economy; The rise of co-working spaces*. Paper presented at 2nd Geography of Innovation International Conference 2014, Utrecht, January 23 - January 25.
<https://halshs.archives-ouvertes.fr/halshs-00914075/document>

Oeij, P. R. A., Dhondt, S., & Korver, T. (2011). Workplace Innovation, Social Innovation, and Social Quality. *International Journal of Social Quality*, 1(2), p. 31-49.

Appendix

1 TNO Impact Assessment approach

To assess the impact of a policy innovation or (preventive) interventions on health and socio-economic variables, TNO has developed a conceptual framework describing the elements and transitions needed, based on the European Union Guidelines for Impact Assessment¹. This framework is shown in Figure 1. In this figure the boxes at the bottom refer to the different stages included in the impact assessment. The boxes bounded by the brown frame represent the different elements involved

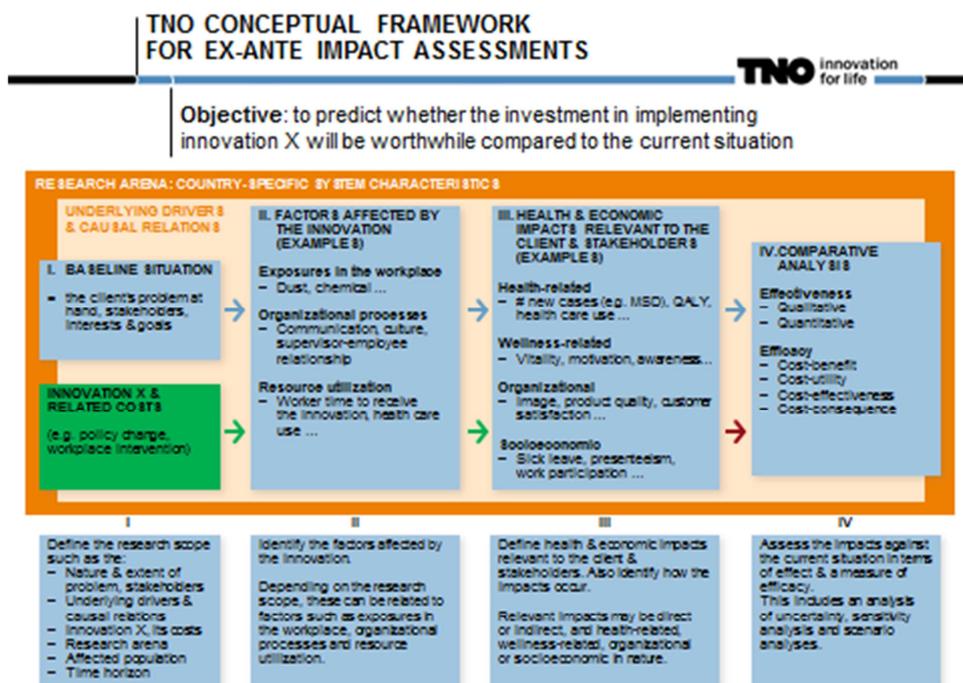


Figure 1. The TNO framework for ex ante impact assessment

In the first step the baseline situation is assessed. The baseline assessment refers to the current situation and includes the nature and extent of the problem, relevant stakeholders, the research area, the affected population, the costs as they are now, and the underlying drivers and causal relations as represented by the orange arrows.

In the next step, the innovation of interest is identified and the related costs are estimated. The innovation may refer to an intervention within a company, such as a workplace intervention, but also to a larger area, such as a national policy change. Then the factors that will be affected by the innovation are identified. These factors could refer to exposures at the workplace, organizational process and resource utilization.

¹ EU impact assessment guidelines, http://ec.europa.eu/smart-regulation/impact/commission_guidelines/commission_guidelines_en.htm

After this, the health and economic impacts relevant to the client and stakeholders are defined . Relevant impacts may be direct or indirect health related or wellness related, organizational or socioeconomic in nature.

In the final step, the impacts of the innovation are compared to the current situation. This step also involves the analyses of uncertainty and sensitivity.

The analytical steps displayed in the figure, are summarized by EU in the table below², taken from the EU Impact Assessment Guidelines 2009.

Table 1. Summary of EU's IA approach

Summary of key analytical steps	
1	Identifying the problem
	Describe the nature and extent of the problem.
	Identify the key players/affected populations.
	Establish the drivers and underlying causes.
	Is the problem in the Union's remit to act? Does it pass the necessity and value added test?
	Develop a clear baseline scenario, including, where necessary, sensitivity analysis and risk assessment.
2	Define the objectives
	Set objectives that correspond to the problem and its root causes.
	Establish objectives at a number of levels, going from general to specific/operational.
3	Ensure that the objectives are coherent with existing EU policies and strategies, such as the Lisbon and Sustainable Development Strategies, respect for Fundamental Rights as well as the Commission's main priorities and proposals.
	Develop main policy options
	Identify policy options, where appropriate distinguishing between options for content and options for delivery mechanisms (regulatory/non-regulatory approaches).
	Check the proportionality principle.
	Begin to narrow the range through screening for technical and other constraints, and measuring against criteria of effectiveness, efficiency and coherence.
Draw-up a shortlist of potentially valid options for further analysis.	

² Source: EU impact assessment guidelines, 2009, p. 5, http://ec.europa.eu/smart-regulation/impact/commission_guidelines/commission_guidelines_en.htm

4	Analyse the impacts of the options
	Identify (direct and indirect) economic, social and environmental impacts and how they occur (causality).
	Identify who is affected (including those outside the EU) and in what way.
	Assess the impacts against the baseline in qualitative, quantitative and monetary terms. If quantification is not possible explain why.
	Identify and assess administrative burden/simplification benefits (or provide a justification if this is not done).
5	Compare the options
	Weigh-up the positive <u>and</u> negative impacts for <u>each</u> option on the basis of criteria clearly linked to the objectives.
	Where feasible, display aggregated and disaggregated results.
	Present comparisons between options by categories of impacts or affected stakeholder.
	Identify, where possible and appropriate, a preferred option.
6	Outline policy monitoring and evaluation
	Identify core progress indicators for the key objectives of the possible intervention.
	Provide a broad outline of possible monitoring and evaluation arrangements.

Characteristics of IA

From this table, we can identify a number of characteristics of Impact Assessment. These characteristics are underlying principles and assumptions that are required for the analytical steps to be meaningful and/or applicable. We distinguish the following:

- Starting point is a clear baseline scenario
This principle requires that such a baseline scenario should be identifiable, in terms of the problem, the objectives and the main policy options with the details mentioned in the table.
- Causal relations
The approach builds on causal relations. That means: it develops a structure of how impacts are created, running from policy options via intermediate indicators to impacts, with causality as the expected mechanism behind the structures.

- **Static**
The approach can be dubbed to regard the world as static rather than dynamic. That is: it focuses on comparing two or more *states*, e.g. the baseline with one or more alternative states. These states are characterized by differences in, notably, policy options and impacts.
- **Multi-stakeholder perspective**
The approach adopts a multi-stakeholder perspective. It does not provide a definitive framework for aggregating these perspectives into a final criteria on which to base a decision, allowing room for political decision making.
- **Disaggregated as well as aggregated**
It provides information on a number of levels of aggregation, allowing for a rich understanding and assessment of the effects of different policy options.
- **Quantitative if possible, otherwise qualitative information**
The approach provides both quantitative as well as qualitative information, with a preference for the former (explain if quantification is not possible, otherwise quantify).
- **Focus on social, environmental and economic impacts**
It focuses on three impact-domains.
- **Inclined to favour incremental steps**
An implicit assumption is that information on the identification and assessment of impacts of policy options are to be grounded in empirical observations. Without a proper grounding, any claim about causality will be hard to substantiate. This implies that policy options that deviate little from the base situation are more suitable to be evaluated with this approach, than policy options that are “totally new”. The latter lack the information base for a proper identification of impacts and assessment of the causal relations.
- **Treats the institutional context as given**
The approach treats the institutional context as given. In other words: there is no focus on impacts on the institutional context.
- **Does not allow for contextualization, i.e. is a general approach**
The approach relies on the assumption that results of an IA following from analysing certain information from a certain policy context, are applicable in other policy contexts. This is a generalizability assumption that requires limited scope for recontextualization of the issue at hand.

2 How does IA framework suit meaningful analysis of social innovation?

In the table below, we summarize the characteristics of TNO’s IA approach that follows the EU Guidelines for IA, and we augment them with how this suits the characteristics of social innovation.

Table 2. Characteristics of TNO/EU IA and its suitability for social innovation

Characteristic of EU IA approach	What is needed from perspective of social innovation
Starting point is a clear baseline scenario	Allow for assessment of policies that help initiating social innovations
Causal relations	Allow for emergent behaviour, self-organizations. New relationships, new forms of collaboration
Static	Allow for dynamics, e.g., evolution
Multi-stakeholder perspective	+
Disaggregated as well as aggregated	+
Quantitative if possible, otherwise qualitative information	Balance between quantitative and qualitative information
Focus on social, environmental and economic impacts (needs broader focus)	Needs special focus on distribution of power. Sources of power are broader than social, environmental and economics
Informed on existing/comparable events	Needs to deal with truly innovative concepts
Treats the institutions context as given	Allow for social innovation to impact/transient the institutional context
Does not allow for contextualization, i.e. is a general approach	Allow for contextualization