

SCENARIOS FOR SUSTAINBLE HOUSEHOLD

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Ezio Manzini, François Jégou,

Politecnico di Milano, Dept. Industrial Design
Via Bonardi 3, CIR.IS/ER.PS
20133 MILANO, ITALY
Email : E. Manzini : ezio.manzini@polimi.it
Email F. Jégou : f.jegou.dalt@infonie.fr
Fax : +39 2 239 95 124
Phone : +39 2 239 95 124 or +39 2 23 99 51 24

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This paper intends to present and describe “design oriented scenario” (d.o.s.) as a particular approach in scenario thinking methodologies addressing identified social players such as companies or institutions in order to frame their future project and implement it into concrete actions.

A first part characterises “d.o.s.” as a particular typology of scenario and describes its different modality of application as a Strategic Design tool.

A second part develops the application of “d.o.s.” within the EU project : “Strategies towards the sustainable household” (1).

1. “design oriented scenario” as Strategic Design tool for companies

1.1. Scenarios in future thinking methodologies :

Introduced by H. Kahn in the 50’s as : “hypothetical sequences of events, built in the intent of attracting attention to casual process and points of decision” (2), scenario thinking developed as an attempt to describe the possible alternatives of the future in order to show it as open and trigger concrete actions in the present to better control and orient socio-economical or technological decisions.

Elaboration of future thinking methodologies generates then a wide typology of scenarios whose common denominators could be summed-up in three main points :

- plurality of hypothesis : scenarios are intended as a set of hypothesis framing all together the panorama of the possible future evolution of a given present situation ;
- narrative forms : scenarios are literally “stories” describing the steps made of decisions, actions and their articulations that will match a future situation with the present one ;
- either a forecasting or a backcasting approach : the former starts from the analyse of the past and present situation to follow the main lines of possible and probable future developments when the later postulates a desirable future situation, a goal to be reached and looks for its feasibility and conditions of occurrence focusing on the present actions to be implemented.

Main purposes of these scenario thinking approach is then to represent and apprehend the possible futures of a given situation.

Scenarios are the tools used and could either address general purpose of policy making or start from a particular concerns of an identified actors or group of actors describing respectively “policy oriented scenarios” (p.o.s.) and “design oriented scenario” (d.o.s.).

1.2. “policy oriented scenario” (p.o.s.) versus “design oriented scenario” (d.o.s.)

Mains characteristics and differences of these two categories of scenarios could be described as such :

- actors target

“p.o.s.” issues is to help decision making at a general political level when “d.o.s.” rather support choices in terms of projects at the level of a company or an institution. Beyond a matter of scale, the difference between the two approaches stays in the actors focused : when “d.o.s.” address, from the start, clearly identified actors (the precise company or institution who wonders about its own future decision) , “p.o.s.”

address a large range of social actors that can not be identified individually (a particular issue of “p.o.s.” could precisely be, beyond providing wide political guidelines, to better identify groups of actors whose behaviours could have a major impact on the given situation).

- system identification

the delimitation of the system the scenarios will refer to is part of the “p.o.s.” approach : an early step of the methodology consist precisely in identifying a limited and manageable number of key variables among the infinite number of factors that may relates to the focused situation . The reference system for “d.o.s.” is better known and identified from start : either the system relates directly to the focused company / institution and the system consist of the strategic environment centred on the company/institution or the approach focuses a socio-economical area (i.e. a market relating to the activities of a group of companies /institutions) describing precisely a functional system. These two types of “d.o.s.” known respectively as “company-based” and “function based” will be detailed in the following development)

- issues, purposes

starting from macro-trends and emerging questions, “p.o.s.” tends to characterise through one or more global vision of the society, the effects of various political decisions on a plurality of individual choices.

“d.o.s.” tends to show the effects of single decisions of a group of actors on the focused system and related identified macro-trends through one or more visions of this particular focused system.

Then “p.o.s.” tends to be used by public or private sector to assess and show to the public possible effect of different policies alternatives and “d.o.s.” are used by single social actors to orient its own business decisions and build a company-project .

1.3. “Actor-based d.o.s.” versus “Function-based d.o.s.”

As mentioned in the previous development about the system definition, two types of “d.o.s.” can be distinguished picturing two complementary approach for an actor (company, institution, social entity...) to investigate its future.

The behaviour of the focused actor relates to a particular environment (a market for a company, a territory for a local institution, a part of the social scene for a social entity...).

Either the focused system is the actor itself (i.e. a company) and, given its particular situation (i.e. its know-how, identity, human resources...) and the strategic environment (macro / emerging trends), the “d.o.s.” tends to show how particular business decisions / project implementations could affect the future development of the actor. Scenario are then called “Actor-based d.o.s.”.

Or the focused system is the environment of a given actor (i.e. the functional system describing a market sector) and given the present panorama of actors playing on this particular sector (competitors, providers, sub-contractors, intermediary, distributors, public authorities...) and the same strategic environment (macro / emerging trends), the “d.o.s.” tends to show how consistent changes in the actors behaviour could affect the evolution of the focused functional system and in particular, if the present actors themselves may change (i.e. entrance of new players, partnership to be built, shift in the role of particular stakeholders...) Scenarios are then called “Function-based d.o.s.”.

1.4. "Function-based d.o.s."

This paper will concentrate on "Function-based d.o.s." and their application within the EU project : "Strategies towards the sustainable household" (1).

"Function-based d.o.s." are constituted of three categories of basic elements : "goals", "strategies" and "proposals" that could be respectively defined as such :

- the considered functional system is confronted to macro and emerging trends characterising its strategic environment suggesting perspectives in terms of probable or desirable for its future (i.e. achieve a position compatible with sustainable development concerns, demographic ageing, ICT diffusion...). These broad perspectives can not be immediately implemented for various cultural, technological, economical... reasons.

Then, "goals" are specific purpose articulated with the considered broader perspectives of the focused functional system. They should be coherent with the general mission of the focused actor (i.e. business activities of a company) and with its further development in a medium/long term (i.e. they are subdivisions of the general perspectives that can be implemented as central aim of a company to be reach in the near future).

- "strategies" are indications of possible convergence between specific purposes such as the "goals" defined before and the socio-cultural and/or techno-economic-organisational dynamic described as macro/emerging trends.

Theses indications are strategies in the sense they indicate actions that, talking advantage of the focused macro/emerging trends, will bring to reach "goals" that else, would not have been possible to reach.

- "proposals" are product-systems (i.e. the integrated body of products services and communication with which a company present itself to the market and set itself in the society) possible to develop in the frame of a given strategy.

In that sense, ideas and project are considered as "proposals" as long as they are coherent with one or more macro/emerging trends considered and they bring to the achievement of one or more previously set "goals".

Scenarios are constituted by the integration of these three categories of elements. Such articulated propositions of "goals", "strategies" and "proposals", further called "GSP", confer the particular "design-oriented" character of this typology of scenario in the sense that :

- "goals" assume the normative dimension of the project (what I want to obtain) ;

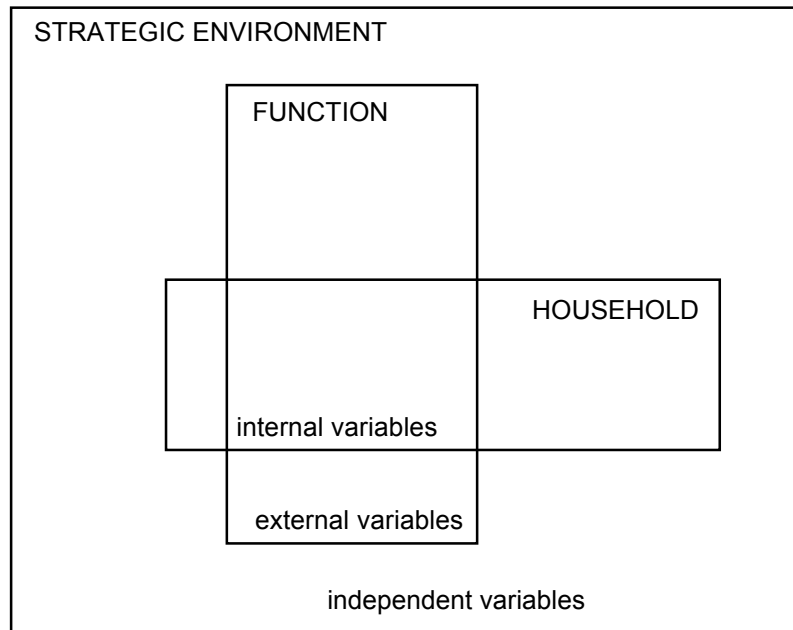
- "strategies" assume the pragmatic dimension of the project (what I am able to obtain) ;

- "proposals" assume the visionary dimension of the project (what I am able to imagine).

2. "Design Oriented Scenario" towards sustainable household

2.1. Structuration of the functional system

The definition of the "functional system" and the analyse of its possible evolution among its strategic environment (macro/emerging trends) is a particularly crucial point in the building process of "d.o.s.". Especially, the difficulties came from the multiplicity and various natures of the of the variables that may influence the system.



“d.o.s.” approach, as it is applied in the EU “Strategies towards the sustainable household” (3) research project, proposes the following methodological approach. Considering a given “functional system” (the household and especially the three particular functions : “shelter”, “clothing care”, “shopping/cooking/eating”) and the actors playing in it (the members of the household), the strategic environment brought to the definition of a first group of “independent variables” which is to say, variables independent from the decisions of the actors playing in the system.

The remaining “dependent variables” are then divided in two groups :

- external variables relating to decisions the actors of the system make outside the system.

This category of variables refers to “techno-cultural options” on which the “functional system” relies outside of any considerations on their concrete implementation in the system.

- internal variables relating to decisions the actors make inside the system boundaries.

This last category of variables refers to “socio-organisational options” defining how the previous “techno-cultural options” are implemented in the system.

This hierarchisation of the variables structures the scenario building process in three steps.

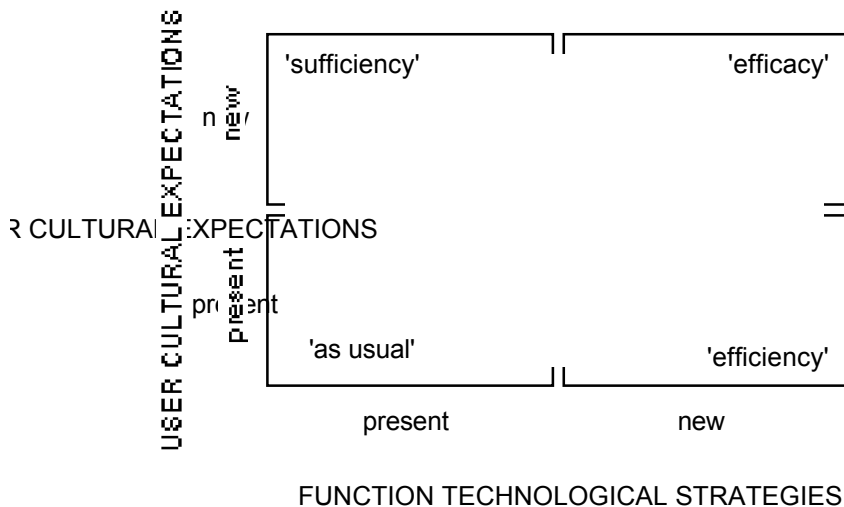
2.2. Implementation of the “techno-cultural options”

Independently from its organisation in the household, the implementation of the focused functions depend from both the nature of the technological processes involved and the expectations in terms of fulfilment by the household members describing respectively two dimensions :

- function technological strategies (what kind of technical system is involved to fulfil the function ?) ;
- user cultural expectations (what does the members of the household expect in terms of fulfilment of the function ?).

In the broad perspective of a “sustainable household”, both new “function technological strategies” and shifts in “user cultural expectations” can be foreseen. They result as described above (paragraph 1.4.) in a series of interesting specific “goals” retained for their particular contribution to general sustainable purposes and/or related “strategies” taking advantage of the macro/emerging trend to fulfil these “goals” and/or concrete “proposals” of product-systems in line with the previous “strategies” and “goals”.

These “GSP” can be structured in the following matrix describing four characteristic typologies of “techno-cultural options” :



- the “as usual” area represent the present situation both in term of technology available and user expectations.
- the area of ‘efficiency’ describes a situation combining the present user expectations with the best available technological improvements in terms of environment.
- area of ‘sufficiency’ describes a situation combining the present technology with acceptable changes in common user expectations.
- area of ‘efficacy’ describe a situation where both technological alternatives and cultural changes could be considered.

2.3. Implementation of the socio-organisational options

Given each “techno-cultural option”, the members of the household could organise in various modes to fulfil the function such as :

- in terms of user behaviour :

SOCIAL (members of households will tend to collaborate as a social community)	versus	INDIVIDUAL (members of the household will behave as a group of individualities acting separately)
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MAKE (members of the household will tend to fulfil the function through their own work)	versus	BUY (members of the household will tend to purchase product and services to fulfil the function)
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- in technical terms :

INSIDE (technical infrastructure involved in the fulfilment of the function are situated inside the household)	versus	OUTSIDE (technical infrastructure involved in the fulfilment of the function relates to a larger context outside the household)
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ENABLING (technical infrastructure tends to enable the members of the household to fulfil the function on their own)	versus	RELIEVING (technical infrastructure involved in the fulfilment of the function tends to provide the household with finished, ready to use products)
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- in socio-economical terms :

SERVICES (members of the household will tend to rely on services to have the functions fulfilled)	versus	PRODUCTS (members of the household will tend to achieve the fulfilment of the function through the use of their own equipment)
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DO-IT-YOURSELF (members of the household will tend to elaborate on their own the products they needs to fulfil the functions)	versus	FINAL PRODUCT SERVICES (members of the household will tend to achieve the fulfilment of the function by buying final products with high service added value)
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SHARING (member of households will tend to share the equipment necessary to fulfil the functions)	versus	INDIVIDUAL USE (member of the household will tend to own their personal equipment to fulfil individually the functions)
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The previous "GSP" could then be implemented in various modes in the household following the same broad perspective of a "sustainable household". The results will again be in form of "goals", "strategies" and/or "proposal" articulated in "GSP".

2.4. scenario assessment

These “GSP” constitute the core of the final scenario.

Third and last step of the “d.o.s.” approach consist in assessing both the consistence of these scenarios successively from environmental, economical and consumer acceptance point of view⁽⁴⁾.

Final “d.o.s.” positively assessed by those filters are presented in relation to the possible evolution of the global strategic environment.

Different hypothesis concerning the “independent variables” are examined to determinate if the different “d.o.s.” would reinforce / weaken in particular contexts such as :

- variations in energy and rough material costs ;
- constrains and incentives in the legislation ;
- other infrastructural aspects...

Conclusion

For actors facing a moving strategic environment and macro-challenges such as the environmental sustainability, “d.o.s.” implementation and purposes could be summed-up by the following points :

- “d.o.s.” are understood as a plurality of hypothesis but rather than exclusive one from the other, they tends to be complementary and simultaneous ways to match the same broad perspectives foreseen for the functional system ;
- the articulation between “goals”, “strategies” and “proposals” belong to the category of narrative form but it assumes a “start-up” dimension, pointing out a wide range of innovative and incentive ideas possible to be implemented right away rather than an attempt to foreseen modalities, steps and probabilities of their occurrence ;
- “d.o.s.” relate to a mixed approach of macro/emerging forecasting scenarios to set globally the strategic environment and micro backcasting scenarios to describe concrete possible implementations ;
- “d.o.s.” incentivate the identification of appropriate goals with a feed-back effect on the focused actor(s) helping to formulate and clarify its mission ;
- “d.o.s.” incentivate the co-production of common objectives, strategies and projects between the different players in the system ;
- “d.o.s.” help to evade the present implementation of the system, stimulate the consideration of possible new stakeholders, reagregating them with the present ones, showing possible synergy to make their various interests and forces converge.

(1) “Strategies toward sustainable household”, Commission of the European Communities in the framework of the Programme for RTD in Environment and Climate 1994-1998.

(2) Wiener and Kahn, 1967 quoted by Eleonora Barbieri Masini “*Why futures studies*”, Grey Seal Books, London, 1993.

(3) “Strategies toward sustainable household” is a European research project concerned with developing and evaluating scenarios for the transitions to sustainable household.

(4) for more details on these phases, see the respective papers in the same conference session.