The objective of this tool is to orientate the design process towards sustainable Product Service System innovation solutions, setting sustainability priorities (using checklist), using sustainable design orienting guidelines (using Idea tables with guidelines) and checking and visualizing (through proper checklist and radar diagrams) the improvements in relation to an existing reference system and its sustainability priorities. This tool is to be used in a system design process to orientate it towards sustainable solutions. It is a modular toolkit so that it can be used in all its parts or only in some of them.
the following guided tour introduces the possible use of the SDO tool. In this case, the satisfaction unit is one person eating for a year at a university campus of a metropolis of an emerging context.
1. To start a new project, click on new tab and type the name of your project in this space and press OK.

Sometimes (if your administrator so chooses) you might be presented with this screen in order to login. Use your login name and password as provided by your administrator.
1. fill in the project details
2. click on environmental sustainability, which will expand the option, showing you the three sub-options, i.e. ‘set priorities’, ‘orientate concept’ and ‘check concept’.
Identification of the priorities for the 6 criteria defined for environmental dimensions. The sustainability checklists have been answered filling proper fields. This has enabled to define the relative priorities for each of the criteria as shown in the image.

1. select the ‘set priorities’ tab
2. click on the checklist boxes (different set of questions for each criterion) to view all the questions
3. answer the questions in the space below
4. click on the next criterion and follow the same steps (steps 2 and 3 explained above) repeat this for all the criteria
5. assign the priority for the criterion, based your answers
6. you can select ‘set priorities’ in the socio-ethical and economic dimensions and repeat the above steps.
7. click on ‘case study 1’
SET PRIORITIES

8. click on the checklist boxes to view all the questions related to the selected criterion.
9. type the answers comparing the best practice with the existing system with reference to the case example you have studied in the space given.
10. repeat the steps 7 and 8 for all the criteria.
11. assign the improvement for each criterion in the case studied as compared to the existing system.
12. you could select ‘socio-ethical sustainability’ and repeat the steps 7-10 for this dimension, and do the same for the ‘economic sustainability’ dimension.

in the case study section you can compare a best practice with the existing system to collect promising inputs and to compare it for the concept to be developed.
Performing an environmentally sustainability-focused brainstorming, using the idea tables with the related guidelines at the system level (stakeholder interaction). Begin with idea tables (criteria) having the highest priorities. This is done by typing the emerged idea in the available digital 'post it' box of the idea tables of system level.

1. Click on 'orientate concept' to arrive at this screen
2. Select the criteria with the highest assigned priorities
3. Read guidelines (criteria related)
4. Click on the toggle 'post it' button to open a digital 'post it' box
5. Type the emerged ideas
6. Select the next idea table by selecting the next criterion, repeat steps 2-5 for every criterion in their order of priority
7. Once all the criteria are thought about, click on the menu button (which will display the main menu)
8. You could click on 'socio ethical dimension' and repeat steps 1-5 and follow the same steps for the economic sustainability dimension.
CHECK CONCEPT (1st LEVEL)

Check sustainability improvements of the developed system concept

1. Under 'environmental sustainability' click on the 'check concept' option
2. Click on the boxes to view the checklist questions
3. Refering to the checklist, type out the improvements as compared to the existing system in the space provided
4. Repeat steps 2-5 for all the criteria.
5. Evaluate and assign the improvement of your concept from the current system
6. You can then repeat the above procedure for 'socio ethical sustainability and economic sustainability'
7. Click on the 'environmental' option under 'radars'
After the improvements (or worsening) are checked in each criteria of the environmental sustainability dimensions, graphical representation is given by the radar diagram where the main advantages or disadvantages are synthesised together with the level of improvement.

1. click on the concept check toggle button
2. note the graphical representation of the improvement or worsening of each criterion, the assigned priority is visible in the location indicated
3. type the text synthesizing each improvement
Performing a sustainability-focused brainstorming, for the 3 environmental dimensions, using the idea tables with the related guidelines at the service level. Begin with idea tables (criteria) having (still) the highest priorities. This is done by typing the emerged idea in the available digital tags of the idea tables of service level.

1. select service level for idea table
2. select the criteria tab having the highest priority
3. read the guidelines (criteria related)
4. type the idea that emerges
5. repeat the steps 1-4 for all the criteria
6. click on menu to display the main menu and then you can repeat the steps 1-5 for the other two dimensions as well.
CHECK CONCEPT (2nd LEVEL)

update sustainability improvements of developed system

after beginning service concept, you can go back to the ‘check concept’ page and update the achieved improvements in that dimension for every criteria.

1. click on check concept to view this page
2. update the text describing the improvements (if any) in the space for all the checklist questions
3. you can do this for all the criteria
4. update the improvements
5. click on the ‘radar’ for the relevant dimension to go back to the graphical representation
update sustainability visualization of improvements of the developed system

you can view and update the improvements again, and compare it to analyzed best practice

1. click on the ‘concept check’ toggle button
2. note the graphical representation of the improvement or worsening of each criterion
3. update the text describing each improvement
4. you can click on the toggle buttons (case 1 / case 2) to compare your concept with the analyzed best practices
5. you can click on menu to display the main menu, and repeat the same process on the other dimensions as well.
SUSTAINABILITY DESIGN ORIENTING TOOL KIT (SDO) USER GUIDE: GET TO KNOW THE TOOL

MAIN MENU COLUMN

PROJECT INFORMATION

RADARS

SUSTAINABILITY DIMENSIONS

PROJECT RECORD PAGE OR MAIN PAGE

TOOL BAR

PROJECT TITLE SPACE

CLICK ON BOXES FOR EXPLANATION

HOME
back to opening page

GO BACK
to where you came from
the sustainability dimensions section of the software contains three sections:

environmental sustainability
socio-ethical sustainability
economic sustainability

Clicking on each dimension opens out a sub-menu with three tabs, namely:

set priorities
orientate concept
check concept

set priorities: the purpose of set priorities is to find out and define the sustainable priorities of the existing system of reference and also analyze best practices to extract from them promising sustainability inputs.

orientate concept: the orientate concept section allows one to perform an idea generation brainstorming based on a set of sustainability criteria and related guidelines.

check concept: the check concept option is useful to define the improvement of the concept under development in relation to the existing system.
set priorities page:
Clicking on set priorities takes you to this page. Here you will find the following work areas:

the priority setting area
the case selection tabs
the checklist viewer for each criteria
space for answers and notes

the priority setting area: the priorities represent the basis to orient the design decisions and efforts towards the most relevant sustainable solutions. They are referred to 6 criteria indicating separated area of concern for the designer. They allow sustainability check by in terms of relative priority setting.

case selection tabs: the priorities can be set for the existing system or different case studies by selecting them from this tab

checklist viewer: the checklist are a set of questions per criteria that enables the designer to understand in relation to a set of sustainability criteria its sustainability problems.

space for answers and notes: in the analysis tab (the text box) one can insert answers and comments to the checklist of each criteria.
orientate concept page:
Clicking on orientate concept in the Environmental, Socio-Ethical or Economic Sustainability dimension takes you to this page. Here you will find the following work areas:

- **the post it boxes**: Are areas where you can type in your ideas that emerge during a brainstorming session.
- **the guidelines section**: Each criterion (for each sustainability dimension) has a series of guidelines that are listed out, as well as indicating the level of priority (if) identified by the user previously.
- **the select criteria tab**: The guidelines for the different criteria can be viewed by clicking on these tabs, opening out the relevant space for each of them.
- **the select level tab**: The select level tab allows you to switch between different levels of the project, e.g., 'system' level or 'service' level.

Please note that the layout for 'orientate concept' are the same for all the three sustainability dimensions.
Please note that the layout for 'check concept' are the same for all the three sustainability dimensions.

**Check List Viewer:**
- Improve Setting
- Concept Check / Description Tab

**Concept Check / Description Tab:**
- Selecting concept description tab allows you to note down improvements (if any) while going through the check list in the concept check area.

**Checklist Viewer:**
- The checklist viewer are a set of questions per criteria that enables the designer to analyze the improvement for that criterion.

**Analysis Reporting Space:**
- In the analysis tab (the text box) you can insert answers and comments to the checklist.

**Improve Setting Area:**
- This area allows the user to set the improvement level of the scenario with respect to the existing system. The setting can be set to worsening (-), equal to (=), incremental improvement (+) and radical improvement (++) from the current system.

**Guided Tour:**
- Jump to an example of how to use this page.
PLEASE NOTE THAT THE LAYOUT FOR ‘ENVIRONMENTAL, SOCIAL AND ECONOMIC’ ARE THE SAME FOR ALL THE THREE RADARS

radars page: clicking on Environmental, Socio-Ethical or Economic options on the radars tab expands into a graphical visualization of the priorities selected earlier.

the select concept / case study tab: this area has three options that are the graphical representations of the select project tabs on the check concept page where the priorities are selected.

the radar area: the radar area displays the priorities selected in a graphical form, and a comparison can be made between the concept check, case study 1 and case study 2 as all the three tabs can be selected simultaneously.

the concept improvement reporting areas: these areas can be utilized to specify or elaborate on the concepts for that particular criterion.
**tool bar:** click on the box to go back to the main menu (menu), save your project (save), reload page (reload), print out (print), (logout) or (help)

**project title:** create and enter a suitable title for your project

**company / client name:** enter the name of the client or company for the project

**the designer or group of designers:** enter the designers name, or in case of multiple designers, the name of the group and the members

**the satisfaction unit:** description of the particular satisfaction that a mix of product and services can fulfill.

**description box:** enter the project description in this box, one can also select case study description tab and concept description tab to open a text box for those tabs.
**SET PRIORITIES**

**case tabs:** you can switch between different cases by clicking on *existing system, case study 1 and case study 2*

**check list viewer:** clicking on the boxes displays the checklist questions that can be useful when answered, to assign priorities for the criterion.

**assigning priorities:** assign priorities by selecting either *no priority (N), low priority (L), moderate priority (M) or high priority (H)* and this has to be done for all the six criteria.

**text boxes:** this box can be used to answer the questions and comment upon the checklist, one for each of the criteria.
**design levels tabs:** you can switch between different cases by clicking on either *service* or *system* and expanding the relevant criteria for them.

**idea tables:** clicking on these tabs open the idea table related to the criteria and displays the guidelines for each of them.

**guidelines:** guidelines are the guiding suggestions for the brainstorming session, and the ideas generated during this session can be enlisted in the *post it boxes*.

**scroll bar (guidelines):**

**post it boxes:** ideas generated during the brainstorming session can be written out on the post it boxes provided on the sides. Clicking on the round button expands the text box and clicking it again minimizes it. If any minimized boxes has some content, the color of the button changes to black.
**Select Concept Tab:** You can select and unselect the cases or concept by the toggle buttons to make a comparative assessment of the cases and concept(s) that will be displayed as a radar diagram (based on the priorities and improvements set earlier).

**Priority Indicator:** These labels indicate the priority assigned to each criterion, defined in the set priorities section analysing an existing system of reference.

**Post It Boxes:** Concept topics that represent the synthesis of the improvement related to the criteria.

**Radar Sails:** The radar sails give a graphic representation of the improvements with respect to the earlier system.