



Group of kids

A group of pupils that cooperate together.







Group of elderlies

A group of old people that cooperate together.



Personas





Group of disabled

A group of disabled people on wheelchair that cooperate together.



Personas

P-4





Group of workers

A group of workers in the city that cooperate together for a job task.



Personas

P-5





Bea

A 3 years old girl.







Harry

A 72 years old, retired from work.







Tom

A 43 years old that lives on a wheelchair.







Paul

A 37 years old that works in the city.



Personas





Yourself

You, your family, or other social groups or communities you are part of.



Personas

P-10





Custom scenario

Describe your own scenario or societal challenge.



Scenarios

SC-1



SCENARIOS

Context traces where the idea is applied.

Waste reduction

Solid waste management can account up to 50% of municipal budget. Awareness of citizens about their own production can help reducing waste generated. Promoting a lifelong learning approach can support improvements in recycling and waste reduction, also maintaining the results acquired. Which technical solution can be helpful in supporting local communities and families in this process?



Scenarios

SC-2



SCENARIOS

Context traces where the idea is applied.

Sustainability

In cities, 70% of land use is for housing. The impact of in-house sustainable behaviors can be significant on cities ecologies. Learning and acquiring these behaviors can be challenging due to the abstract nature of concepts like energy and water consumption. How technology can support awareness of these concepts and promote learning of





SCENARIOS

Context traces where the idea is applied.

Participation

Citizen participation in public life is a key factor to achieve the goals of a smart city. It is often challenging to convince citizens to participate even when decisions will affect their lives directly like in urban planning, public transport organization and planning of cultural activities. How can technology help promoting awareness and participation in



Scenarios

SC-4



SCENARIOS

Context traces where the idea is applied.

Transportation

vastly to emissions, with passenger cars being mostly used. This development entails a necessary change in people's behaviour towards sustainable transportation means such as walking, biking or public transport. How can technology facilitate reflection as a strategy to support people or communities in adopting more sustainable mobility behaviours?



Scenarios

SC-5



SCENARIOS

Context traces where the idea is applied.



Custom sensor

Describe your own sensor.



Sensors

SN-1



SENSORS

Sensors that register some aspect of the thing's surroundings.



Temperature

Temperature data from the ambient surrounding the object.



Sensors

SN-2



SENSORS

Sensors that register some aspect of the thing's surroundings.



Humidity

Air humidity of the ambient where the object is placed.



Sensors

SN-3



SENSORS

Sensors that register some aspect of the thing's surroundings.



Weight

Weight or change of weight of the object.



Sensors

SN-4



SENSORS

Sensors that register some aspect of the thing's surroundings.



Air pollution

Pollution of the air surrounding the object.



Sensors

SN-5



SENSORS

Sensors that register some aspect of the thing's surroundings.



GPS coordinates

Latitude and longitude coordinates of the object.



Sensors

SN-6



SENSORS

Sensors that register some aspect of the thing's surroundings.



Water quality

Water quality of the ambient where the object is placed.



Sensors

SN-7



SENSORS

Sensors that register some aspect of the thing's surroundings.



Noise

Noise data from the ambient surrounding the object.



Sensors

SN-8



SENSORS

Sensors that register some aspect of the thing's surroundings.



Energy

Energy usage of the object.



Sensors

SN-9



SENSORS

Sensors that register some aspect of the thing's surroundings.

Reflective learning

GOAL

Create a concept that helps an individual or community to form or change a (long-term) habit through reflection.

EXAMPLE

A column that visualises individual, neighbourhood, and city-wide energy consumption over time on a semi-public space.





MISSIONS

The purpose, value or utiliy that the loT product provides to people.



Street lamp

A public illumination lamp found in streets or other urban areas.



Things





Bench

A public bench.







Public bin

A public bin for waste or recycling.



Things





Bus stop

A bus, tram or tube stop.







Kids playground

A playground for children found in parks and green areas.



Things





Wheelchair

A wheelchair to be used by people with limited mobility.



Things





Light bulb

A light bulb used in indoor or outdoor lamps.



Things





Column

A column that is part of a building or free standing in a public space.



Things





Park

A public park in an urban area.







Building

A building found in urban areas, e.g. office, gym, store, school, university, restaurant.



Things





Stairs

Stairs in front of apartment houses, underground stations or other urban places.



Things





Street

A street that is either used by cars or as a sidewalk by people.



Things



THINGS

The physical objects that are augmented with technology to be made interactive.



Traffic light

A traffic control signal found in streets.



Things

T-38



THINGS

The physical objects that are augmented with technology to be made interactive.



Tram/Tube

A tram or tube that is part of public transport, including parts such as doors, seats, or handles.



Things

T-39



THINGS

The physical objects that are augmented with technology to be made interactive.



Bus

A bus that is part of public transport, including parts such as doors, seats, or handles.



Things

T-40



THINGS

The physical objects that are augmented with technology to be made interactive.



Car

A vehicle that is privately owned.



Things

T-41



THINGS

The physical objects that are augmented with technology to be made interactive.



Landmark

Notable object or building in an urban space.



Things

T-42



THINGS

The physical objects that are augmented with technology to be made interactive.



Car sharing

Data from a car sharing service such as car2go.





SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Bike sharing

Data from a bike sharing service.





SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Double tap

The user taps the object, with a double tap.

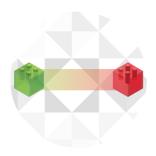


A-10



HUMAN ACTIONS

How the user can interact with an object to trigger some interactive behavior.



Color fade

The object changes its color gradually fading into a new one.



Feedback

F-10



FEEDBACK

How the object can communicate back to the user.



Timeline

Display collected or input data over time.



Feedback

F_11



FEEDBACK

How the object can communicate back to the user.

Plan & Do Activity

WHAT

Ideas that support planning, doing, monitoring, or simulating an activity.

HOW TO JUDGE

Does the tool help the user:

- do or plan an activity
- simulate an activity
- collect data about the activity, used later to recall experiences





CRITERIA

Different criteria to help you evaluate the ideas you come up with.

Reflection trigger

WHAT

Ideas that trigger reflection.

HOW TO JUDGE

Does the tool help the user:

- signalize what to reflect about
- invole others in reflection





CRITERIA

Different criteria to help you evaluate the ideas you come up with.

Conduct reflection

WHAT

Ideas that support a user or group during reflection by providing the required data, contributing to a concrete reflection outcome.

HOW TO JUDGE

Does the tool help the user:

- recall past activities experiences
- learn about related experiences
- understand experience meaning
- envision future activities





CRITERIA

Different criteria to help you evaluate the ideas you come up with.

Apply reflection

WHAT

Ideas that support implementing the outcome of reflection to create change.

HOW TO JUDGE

Does the tool help the user:

- access reflection outcome
- decide how to change bahaviour
- involve others in the change





CRITERIA

Different criteria to help you evaluate the ideas you come up with.



Custom connector

Add your idea for a new connector here if you have one.



Connections between objects that are used of function together.

ilestoolkit.io/



Multiple objects are triggered at the same time.



Connections between objects that are used of function together.

ilestoolkit.io/



Then...

Actions are performed in sequence after each other.

CN-3



CONNECTORS

Connections between objects that are used of function together.

lestoolkit.io/



Together...

Objects are at the same place or grouped together.



Connections between objects that are used of function together.

ilestoolkit.io/



Custom mission

A mission or goal of your choosing to ideate on.



Missions

M-1



Trojan horse

GOAL

Create a concept that seemingly does one thing, but where the intention is to produce another, deeper effect.

EXAMPLE

A coffee cup that changes color when you have a scheduled appointment.





Coded information

GOAL

Create a concept that displays information that is useful to the owner, but not understood by anyone else.

EXAMPLE

A wallet with a light that turns green when your account balance is low.





Habit changing

GOAL

Create a concept that helps a user to form or change a long-term habit. The usefulness decreases over time as the habit is established.

FXAMPIF

Shoelaces that glow brighter or darker according with the number of steps taken during the day.





Social interaction

GOAL

Create a concept that helps to facilitate some kind of interaction between people.

FXAMPLE

A pin for breaking the ice at a party that lights up when you are near your table companion.





Enjoyable objects

GOAL

Create a concept where the objects are so pleasant or fun to use that people will want to spend time with, regardless of what else it does.

FXAMPLE

A piggy bank that starts smiling and grunting when you give it money.





Time-saver

GOAL

Create a concept that simplifies or removes some task that people normally have to spend time doing against their wishes.

EXAMPLE

A washing machine that orders new detergent when it notices you are running low.





Transactions

GOAL

Create a concept that allows users to give and receive something. That something can be currency, likes, objects, etc.

EXAMPLE

A glove that accepts donations each time someone gives it a high-five.





Immortality

GOAL

Objects that can help the user save something for posternity, or perhaps objects that give health benefits to the user himself.

EXAMPLE

A mirror that takes a picture of you every day to keep a capsule of that day in your life.





In the mood

GOAL

Create a concept where the behavior of the objects are determined or influenced by the owner's mood or state of mind.

EXAMPLE

A lamp that changes its color based on a friend's mood.





Omniscience

GOAL

Objects that provide the user with knowledge, or with access to information.

EXAMPLE

An earring that can translate foreign languages spoken around you to your native tongue.





Obstacles

GOAL

Create a concept where a task is intentionally made harder to accomplish - to discourage bad habits or create added challenge.

FXAMPLE

An alarm clock that moves around the room to force the users to chase it if they are oversleeping.





Feeling blue?

GOAL

An object that helps communicate your mood or state of mind to others around you.

EXAMPLE

An office workspace that alerts others whether or not you are busy.





Teleportation

GOAL

Objects that allow the sensation of being in multiple places at once, or that let you experience some aspect of a different place.

EXAMPLE

An alarm clock that wakes you up with the sound and light of a different place in the world every morning.





Tangibles

GOAL

Create a concept where the object itself solves a task where you would normally have had to use a screen

EXAMPLE

An unbrella that lights up when there is rain on the forecast for the day.





Sixth sense

GOAL

Create an object that gives its owner some kind of superpower, like new types of senses, perceiving new information, etc.

EXAMPLE

A necklace that changes color based on the air quality of your surroundings.





Safekeeping

GOAL

Objects that protect the user or something that is valuable to the user.

EXAMPLE

A bike that alerts you when it has moved while you are not around.





Super shopper

GOAL

An object that helps stores or service providers sell more of their products.

EXAMPLE

A coaster that orders you another beer when an empty glass is placed onto it.





MISSIONS

The purpose, value or utiliy that the loT product provides to people.

Big brother

GOAL

An object whose purpose is to collect data that is valuable either to you or a third party.

EXAMPLE

A car key that registers your driving habits to give you better insurance deals.





MISSIONS

The purpose, value or utiliy that the loT product provides to people.

Telepathy

GOAL

Objects that enable users to communicate each other in non-verbal ways, such as describing their mood for others to see.

EXAMPLE

A wristband that glows when your significant other is thinking of you.





MISSIONS

The purpose, value or utiliy that the loT product provides to people.

Expression

GOAL

Objects that allow new ways to express yourself creatively or emotionally.

EXAMPLE

Stairs that turn into piano keys when someone walks across them.





MISSIONS

The purpose, value or utiliy that the loT product provides to people.



Custom thing

Add your ideas for new objects here.



Things





Bike

An object that integrates with your bike or is brought along with the bike, like a helmet or a lock.



Things





Wallet

A wallet, purse or card case that you carry your money and credit cards around in.



Things





Watch

An ordinary wristwatch.



Things





Eyewear

A pair of ordinary glasses or sunglasses.



Things





Keychain

A keychain or a key.







Pen or pencil

A writing utensil like a pen or pencil.



Things





Luggage

A bag or backpack that is brought along on travels.



Things





Clothing

Any piece of ordinary clothing like a sweater, jacket or hat.



Things





Refrigerator

An object attached to the frigde, or integrated into the fridge.



Things





Office desk

Some part of your office workspace, like the desk itself or a lamp.



Things





Shoe

Shoes or some part of a shoe, for example shoelaces or sole.



Things





Headgear

A piece of headgear like a cap, a beanie or a helmet.



Things





Camera

A standalone camera like a DSLR



Things





Piggy bank

A piggy bank or similar object that is used to save money.



Things





Furniture

A piece of furniture in the home, like a chair or a cooffee table.



Things





Coffe cup

A coffee cup or tea cup.



Things





Umbrella

An umbrella or some part of it.



Things





Sport equipment

A football, a tennis racket or another piece of sporting equipment.



Things





Plant

A household plant, flower or its planter.



Things





Jewelry

A piece of jewelry like a ring, an armlet or a necklace.



Things





Medication

An object related to personal medication lika a pill bottle, medicine cabinet, etc.



Things





Pets

An object related to a pet, like dog collar, cat door or bird cage.



Things





Stove

A stove, an hoven, a pot or any other cooking equipment.



Things





Shower

A shower, a sink, a mirror or any other bathroom equipment.



Things





Custom channel

If you have ideas for other data sources or sensors, add them here.





SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Health and fitness

A health or fitness related service such as Fitbit or Endomondo



Services

S-2



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Mail

A service that allows to send and receive emails.



Services

S-3



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Bank account

Data from an online banking account.



Services



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Weather

Data from a weather forcast service, like temperature, chances of rain, UV index etc.



Services

S-5



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Twitter

Data from a Twitter account, like tweets, trending topics and mentions.



Services

S-6



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Instagram

Data from an Instagram account, like likes or mentions.



Services



SERVICES

Sources that exchange data with the objects, like web services, apps or sensors.



Facebook

Activity on your facebook account such as images, comments, likes, friends' activities and location.



Services





To-do list

Data from a To-do list such a as a Trello account



Services





Cloud documents

Text documents or spreadsheets stored in a cloud service like Google Drive or Dropbox.



Services





Maps

Geographic data from a map service, like directions, travel time, or points of interest.







Calendar

Data from a calendar like scheduled appointments.







Stocks

Data from the stock markets or other financial data like currencies or bonds.







Traffic

Traffic data like traffic jams and road accidents.







Public Transit

Data from public transit systems like bus or train schedule.







Storage

A database or generic online data storage.



Services





Messages

Messaging services like WhatsApp, Facebook Messenger, Skype or Slack.



Services





Music

Control the playback or receive data from a music streaming service like Spotify.



Services





News & sports

Data from news providers like breaking news or sports scores.



Services





Alarm

Time-related events such as alarms or reminders.



Services





Car

Data from your car, like its location, speed or fuel.



Services





Public webcam

A video feed from a public webcam or surveillance camera



Services





Marketplace

Data from an online marketplace for ecommerce, like number or amount of purchases.



Services





Smart speaker

Data from a wireless smart speaker like Amazon Echo







Smart home

Data from internet-connected home-control system, including sensors and smart fornitures.



Services





Custom action

If you have other actions to trigger the objects you can add them here.



Δ-1





Rotate

The user rotates the object along one of the three axes.







Shake

The user shakes the object.



A-3





Drop

The user drops the object to the ground.







Lift

The user lifts the object from a static surface







Tilt

The user tilts the object on one of three axes.



A-6





Location change

The user brings the object to a specific location (or away from a specific location).







Tap

The user taps the object, either with a single tap or double tap.







Proximity

The user moves their hand near the object without actually touching it.







Custom feedback

Add your ideas for new types of feedback here.



Feedback

F_1





Emoji

The object displays some kind of emotional response.



Feedback

F-2





Motion

The object moves in response to a trigger.



Feedback

-3





Text

The object displays a short text message to the user.



Feedback

=_4





Sound

The object starts to make a sound.



Feedback

F-5





Color change

A light on the object changes from one color to another.



Feedback

F-6





Blink

A point of light on the object starts blinking.



Feedback

F-7





Vibrate

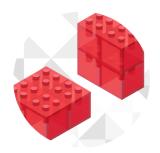
The object starts vibrating.



Feedback

F-8





Shapeshift

The object changes its shape in some way.



Feedback

--9





Custom criteria

If you see other types of important criteria, you can add them here.





Innovation

WHAT

Ideas that solve new problems through skillful use of technology.

HOW TO JUDGE

Would Elon Musk be interested in the product idea? What would the news headlines read like for the different ideas?





Enjoyment

WHAT

How fun or enjoyable are the ideas for their users.

HOW TO JUDGE

Would you like to spend time with the product, even if you don't really need it? Is it something you would tell your friends about?





Utility

WHAT

How useful are the ideas, and would they be practical to use.

HOW TO JUDGE

Do the product solve a real problem for their users? Can you see it being used every day?





Attraction

WHAT

Are the ideas attractive, as in products that the users would be proud to own?

HOW TO JUDGE

Would you like to have the product for yourself? Do you think the target audience would like it as well?





Creativity

WHAT

Ideas that solve the problem in a clever and unusual way.

HOW TO JUDGE

Does the product idea surprise you or make you think twice about the problem? Would you turn your head if you saw someone else using it?





Feasibility

WHAT

Ideas that solve the problem in a plausible manner, and that seem realistic to develop.

HOW TO JUDGE

Would you invest your savings in the development of the product idea? Have you seen other similar products be successful?





User friendly

WHAT

Ideas that solve a real need for users, and which are easy to use for a large number of people.

HOW TO JUDGE

Would life be easier for the users with the product than without it? Could both your kids and grandparents use it?





Market potential

WHAT

Is there a large audience that would be willing to pay for the product.

HOW TO JUDGE

How would investors respond to the product idea? Can you see a big company formed around selling the product?





Sustainability

WHAT

Is the object environmentally friendly or can it encourage sustainable behavior?

HOW TO JUDGE

Would the product be a net positive to the environment? What does its lifecycle look like?



