THE BIG IDEA

Flaws of the Smart City is a critical kit to explore the dark faces of the so-called Smart Cities. As any hardware or software piece, the connected cities embed flaws and this kit aims to fix these weak spots or to exploit them to set chaos. The Flaws of the Smart City cards have been imagined in the first place for designers, urbanists, public servants and even small guys from big tech companies involved in the smart city business.

The content of the kit has been built on the thoughts and works from Dan Hill (City of Sound), Adam Greenfield (Against the Smart City) and Anthony Townsend (Smart Cities, Big Data, Civic Hackers, and the Quest for a New Utopia).

RULES OF ENGAGEMENT

This is a workshop-tailored kit. It has been created to foster conversations during brainstorming sessions, to envisage provocative concepts and to build scenarios for debates.
There are three main decks of cards:
- Issues, listing current and emerging flaws of smart city projects.
- Places, listing both common and forgotten urban spaces.
- Actions, listing interventions that could influence places and issues.

Here is an example of settings for a workshop using this kit:

1. Choose a city which will be used as a social, cultural, geographical and economical context for the exercise. It can be your hometown or a random location far away.

2. Select a game mode (see the cards of rules).

3. Assemble a card of each deck (Issue + Place + Action) and use them as a base for brainstorming. Imagine, speculate and define the new services or products related to the Flaws of the Smart City. Add a flavour of fiction, embed ideas in everyday stories and tell how it will change urban environment as well as the society.

4. Variation: you may decide to split the discussion group according to two roles, one part focusing on causes and actions, the other focusing on reactions and consequences.

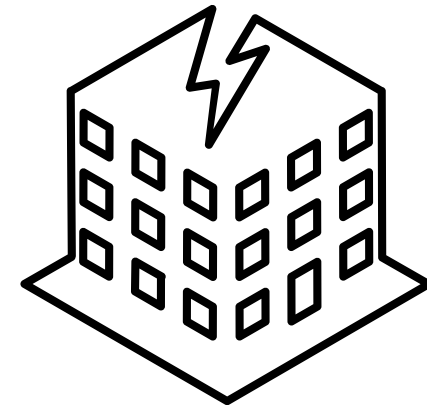**5.** Document and share ideas or discussions triggered by this workshop.

CREDITS

The cards from the Flaws of Smart City kit use the following icons:
- Book designed by Murali Krishna from the thenounproject.com
- Location designed by Ema Dimitrova from the thenounproject.com
- Lightning Bolt designed by Joe Mortell from the thenounproject.com

We encourage you to bring your own adjustments to the existing material or to design new cards! We would also love to hear how you used the kit and to know more about the outcomes, feel free to drop us a line at info@design-friction.com or @design_friction on Twitter.

FLAWS OF THE SMART CITY
DESIGN FRICTION KIT

DESIGN
FRICTION

DESIGNED BY DESIGN FRICTION
VERSION 1.3 — OCTOBER 2016

FLAWS OF THE SMART CITY
INDEX

📖 RULES

- Guardian Angel
- Evil Genius
- 2x Blank Cards

⚙️ ACTIONS

- Gamify	- Track	- Slow Down	- Animalize
- Visualize	- Reduce	- Co-Brand	- Weaponize
- Make accessible	- Contain	- Oversimplify	- 2x Blank Cards
- Humanize	- Hijack	- Disconnect	

📍 PLACES

- Shopping Streets	- Main Square	- Public Library	- Place Of Worship
- Public Park	- Public Toilet	- Parking Lot	- Highway
- Convenience Store	- Social Housing	- Train Station	- 2x Blank Cards
- Kiosk	- City Hall	- Museum	

⚡ ISSUES

- Loss Of Privacy	- Centralized Power	- Data Blind Spots
- Proprietary Ecosystem	- Decontextualized	- Unempowered Citizens
- Embedded Vulnerability	- Greenwashed	- Coded Obsolescence
- Infrastructure First	- Algorithmic Religion	- Authoritarian Setup
- Missing The Human Scale	- Key To The City	- 2x Blank Cards

NOTES

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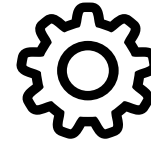..

FLAWS OF THE SMART CITY
ISSUES CARDS

⚡ FLAWS OF THE SMART CITY 101
THE ISSUES CARDS

A «Issue» card describes one of the common flaws encountered in the existing or planned Smart Cities. Each card shortly documents the core of the issue and stakes related to this flaw.

Note: This is not a playable card.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ACTIONS CARDS

⚙ FLAWS OF THE SMART CITY 101
THE ACTIONS CARDS

A «Action» card describes one of the interventions that could happen in the urban space. They can worsen as well as fix the issue. Each action leads to a reaction, so remember to find the right balance between positive and negative impacts.

Note: This is not a playable card.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
PLACES CARDS

⚲ FLAWS OF THE SMART CITY 101
THE PLACES CARDS

A «Place» card defines a location in the urban space that could be affected by the flaws of the Smart City. Some of these places are already part of programs connecting cities, whereas others appear to be grey areas, neglected in the effort in improving the urban infrastructure.

Note: This is not a playable card.

FLAWS OF THE SMART CITY
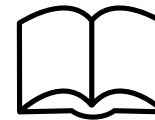
FLAWS OF THE SMART CITY
RULES CARDS

📖 FLAWS OF THE SMART CITY 101
THE RULES CARDS

A «Rule» card defines the setup of the game. You can either play with the basic rules or create your own.

Note: This is not a playable card.

FLAWS OF THE SMART CITY
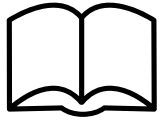
FLAWS OF THE SMART CITY
RULES

📖 RULE #1
GUARDIAN ANGEL

You are the guardian angel of the Smart City. In each issue, you see a flaw that can be repaired.

In this mode, you have to imagine how the action may solve the issue in relation with the specific place of the city you have chosen. Your solution has to generate positive externalities for the whole society.
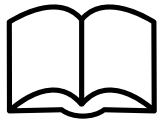
FLAWS OF THE SMART CITY

📖 RULE #3

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Create your own rules:

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FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
RULES

📖 RULE #2
EVIL GENIUS

You are one of the most prolific evil geniuses in town. In each issue, you see a potential flaw that, if exploited, could unleash chaos in the streets.

In this mode, you have to imagine how the action may aggravate the issue when linked with this particular place of the city. Your solution has to generate negative externalities for the entire community or for a specific population.

FLAWS OF THE SMART CITY

📖 RULE #4

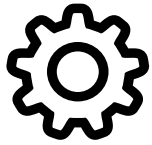..

Create your own rules:

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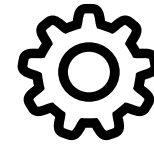..

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #1
GAMIFY

Make it a game.
Set achievements.
Earn points and badges.
Impose the reign of fun.

A gamified solution can foster motivation and involvement as well as constraining citizens' behavior by telling them what has to be done and what is considered a success.

⚙ ACTION #3
TRACK

Using digital devices and connected objects leaves traces. They are persistent artifacts of both our digital and physical presences in the hybrid urban spaces.

These traces can be tracked and then recorded. Tracking and aggregating them may lead to anticipation and control.

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #2
SLOW DOWN

Everything is going faster.
This is not even a cliché anymore.
Immediacy has become both
a technological and a cultural
expectation for connected things.

What could be the outcomes if some processes were slowed down?
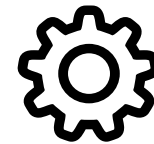
⚙ ACTION #4
VISUALIZE
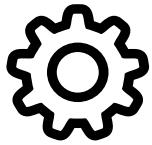
As social and physical environments are getting more and more complex, they may lack legibility.
Making it visual succeeds when words fail to represent intricacies or to catch the attention of an audience. Visualizing reveals hegemonic processes and can highlight unexpected hidden interactions.
But is it good to make everything transparent?
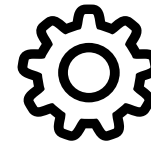
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #5
REDUCE

Big buildings, big infrastructure and big ambitions. Things tend to grow, but the human scale remains unchanged. They are the symbol of our desire for an infinite expansion.

Is it worth to see things a bit smaller?

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #7
CO-BRAND

Good news, you are a brand.
Bad news, everything has become kind of a brand.
Marketing and brand content are pervasive and persuasive. As brands are joining forces in some unique ventures, what could be the next unexpected association in town?
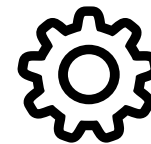
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #6
MAKE ACCESSIBLE

While digital and physical touchpoints are becoming more diverse across our life and our experience of the city, the simple fact of ensuring access is a first step towards equity.

Then, there is the question of levels of access. Is it only about to be able to see something, to go somewhere or also to be able to have an impact on a situation?
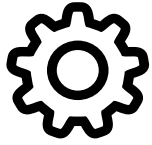
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #8
CONTAIN

New territories mean new identities, new identities mean new barriers and new borders. Containment has for long become a strategy to set points of reference, lines to not cross and elements to restrain.
What or who will you contain?
For what purpose?
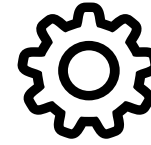
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #9
OVERSIMPLIFY

Simplification is a necessity, but also a defense mechanism when having to handle a complex situation. Oversimplification may be driven by a lack of time, attention or rigor. Downside, it could lead to a wrong perception of reality. But seriously, who likes to deal with complex situations?
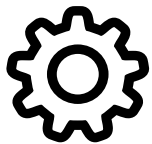
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #11
DISCONNECT

Cut it off from the network, from people, from space or from time. Think disconnection as an act of resistance or as an unwanted and endured situation. It is time to unplug things and people from the grid.
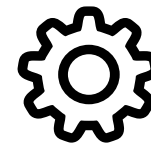
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #10
TINKERING

Nowadays, things are programmed to go straightforward, not meaning they head for the right direction. You might help to set things right by hacking, tweaking, interfering and adding some glitches in the current processes. Start from the existing blocks and reconfigure them with your own adjustments.
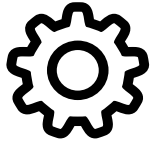
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #12
HUMANIZE

Make it more human. This could mean to add a sense of community, desires or sensitive feedback, but also an ounce of irrationality, unpredictable emotions and antisocial behavior. It definitely could bring a new layer of unavoidable complexity.
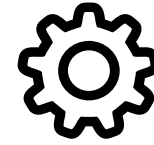
FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #13
ANIMALIZE

Forget about civilization.
Unleash nature.
Release wildness.
Make it instinctive and primitive.
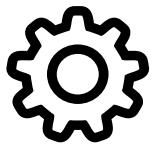Bring the animal back in the game.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #15

Create your own action card:

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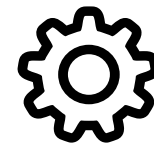
FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #14
WEAPONIZE

Basically, it is all about turning
something into a weapon, on
purpose or not. Then, it grows into
an instrument of power, reshaping
established relations.
Just remember, a weapon serves two
goals, defense and attack.
Which one would it be?

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ACTIONS

⚙ ACTION #16

Create your own action card:

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FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
PLACES

⚑ PLACE #1
SHOPPING STREET

Before malls, there were shopping streets. Welcome to open-air street-side stores, offering both local products and global brands. Competition is harsh, some stores will survive while some others disappear without leaving any trace.

FLAWS OF THE SMART CITY
PLACES

⚑ PLACE #3
MAIN SQUARE

Usually, located not very far away from the town hall and getting really crowded on celebration days.
Also known as the best place in town for protests and demonstrations.

FLAWS OF THE SMART CITY
PLACES

⚑ PLACE #2
PUBLIC LIBRARY

A place where everyone can access knowledge for free and without having one's personal data sold. There are even rules to follow there, a bit old-fashioned if you ask.

FLAWS OF THE SMART CITY
PLACES

⚑ PLACE #4
PUBLIC PARK

A green spot for recreational use and a conservation area for flora and fauna. Some of them even have nice playgrounds and highly allergenic pollen.

FLAWS OF THE SMART CITY
PLACES

⌖ PLACE #5
PUBLIC TOILET

Not the most glamorous place in the city, but still one of the most badly needed.
Public toilets provide a large range of hygienic issues, from bad smells to drug use. However, they are also a place of curious rituals such as posting classified or personal ads.

FLAWS OF THE SMART CITY
PLACES

⌖ PLACE #7
PARKING LOT

Cars are still part of the urban landscape, with or without drivers.
So are parking lots, being set in plain sight or buried underground.
And what about a parking for bikes?

FLAWS OF THE SMART CITY
PLACES

⌖ PLACE #6
CONVENIENCE STORE

For all the last-minute grocery shoppers out there.
Affordable products for everyday emergencies, longer opening hours, and a unique charm.

FLAWS OF THE SMART CITY
PLACES

⌖ PLACE #8
SOCIAL HOUSING

Affordable housing provided by State or non-profit organizations.
In the old days, it was a progressive solution supporting social equity. Today, it is likely to be viewed as a neglected piece of the urban infrastructure, only depicted as a synonym for social troubles.

PLACE #9
TRAIN STATION

The main urban transportation hub, but also a small-scale city.
It appears to be an inextricable mesh of accelerations and pauses, served by commercial services and supported by efforts to maintain a rational and efficient system.

FLAWS OF THE SMART CITY
PLACES

PLACE #11
CITY HALL

Where decisions are made.
It hosts the representative governance of the city.
It can reflect both the embodiment of a personified power and the place where transparency, accountability and collaboration stand for actionable values.

FLAWS OF THE SMART CITY
PLACES

PLACE #10
KIOSK

The smallest unit for commercial or informational purposes in the urban environment.
Kiosks are also known to be hideouts for ill-used public touch screens.

FLAWS OF THE SMART CITY
PLACES

PLACE #12
MUSEUM

Storing and showing artifacts which are not always coming from the past.
More than any other place in the city, museums are facing questions about the transformation of spaces into lines of code as well as the challenges of digitizing physical artifacts.

FLAWS OF THE SMART CITY
PLACES

FLAWS OF THE SMART CITY
PLACES

PLACE #13
PLACE OF WORSHIP

As it was one of the foundations of antic cities, the architecture of places of worship keeps being a constant crossover between functionalism and spirituality.
Temples, churches or mosques have been built as places for serenity, but age-old conflicts turned them into lightning rods for anger.

PLACE #15

Create your own place card:

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FLAWS OF THE SMART CITY
PLACES

PLACE #14
HIGHWAY

Public ways, mostly roads, accessible for everyone.
These lanes are shared between an eclectic range of modes of transportation modes such as cars, drones, bikes, horses and even pedestrians.
Yesterday ruled by laws, tomorrow by computer code.

FLAWS OF THE SMART CITY
PLACES

PLACE #16

Create your own place card:

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FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #1
LOSS OF PRIVACY

By embedding sensors in the streets, the Smart City is under constant surveillance; monitored by public forces and private interests. Being able to track and record activities has erased the notion of anonymity promised by the urban structure and the crowd. Targeting marginality with these tracking systems is allowing to get rid of, physically and digitally, a specific population in a specific area.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #3
DATA BLIND SPOTS

Data can't see everything. Even with a tight mesh of sensors, some urban activities are slipping away. Data also carry internal biases since they are a cultural construction, shaped by the choices made during the collecting and parsing processes of data. Looking for perfect knowledge is an unreachable goal, data providing only a biased and incomplete view of society.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #2
CENTRALIZED POWER

Smart Cities feature the rise of situation rooms and control centers. These closed places provide a top-down control of the infrastructure, seeing the city through a dashboard. This centralized control and planning of urban facilities fail to stimulate incremental innovation by third parties. It can be considered governance by control rather than by community involvement.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #4
INFRASTRUCTURE FIRST

Smart City programs envisage the city as a concrete structure only. Soft textures of the city, such as subculture or invisible public are conscientiously forgotten. A Smart City is focused on efficiency as a final goal, not as a means to develop common goods. But a city goes beyond a simple ensemble of commodities and for sure deserves more than the promises of security, convenience or efficiency.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #5
PROPRIETARY ECOSYSTEM

Smart City logic is oriented on a proprietary philosophy.
Using closed standards, it carefully picks whom to deal with among a list of designated institutional and business organisations or NGO.
This is a locked environment led by market forces and strict partnerships, not by a collective experience.
Don't expect the permission to hack, to tweak or to fork the smart systems.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #7
AUTHORITARIAN SETUP

The use of militarized technologies such as drones or sensors to make streets safer could also undermine resistance or protests against a local government. While security is becoming the main goal to fulfill, digital defensible spaces and crowd control strategies find an echo in the central management of city resources. Someone has already had his finger on the urban kill switch.

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #6
UNEMPOWERED CITIZENS

Automation of the urban infrastructure is taking away responsibilities from citizens. Constraining behaviors with new kinds of reward or rule systems envisages citizens as consumers only. Smart City also fails at the necessary training of citizens to ethical stakes implied by tech in the city, preventing them from reclaiming control or assessing the smart infrastructure. So, what about smart citizens?

FLAWS OF THE SMART CITY

FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #8
ALGORITHMIC RELIGION

Data-based decision culture takes roots into the over-reliance on digital technologies to solve social issues. Algorithms may be reassuring, but also create distance between policy makers and citizens; since data don't foster empathy.
Algorithms are not neutral, they embed ideologies and values from their creators. There is also a lack of transparency about which algorithms are used for decision-making.

FLAWS OF THE SMART CITY

⚡ FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #9
EMBEDDED VULNERABILITY

By integrating technologies into the urban fabric, it is bringing an intrinsic fragility to infrastructure initially protected from this vulnerability.
In addition to the inherent risks of cyber-attacks, the absence of flexibility in the hardware and the lack of interoperability between the digital standards are leading to fatal errors.
In every meaning of the word.

FLAWS OF THE SMART CITY

⚡ FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #11
GREENWASHED

Greenwashing is an operational strategy in the Smart City sales pitch. With cities built from scratch and riddled with energy consuming devices, self-sustainability should be more than ever a primordial challenge.
The promises of smart grids don't stand in front the increase use of rare earth elements and their non-ecological extraction in faraway lands.

FLAWS OF THE SMART CITY

⚡ FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #10
CODED OBSOLESCENCE

Smart Cities are not so different from classical computers.
They are going to need vital updates for their software and hardware parts. Facing the challenge of getting old at the age of fast technological evolution, Smart Cities should start to stockpile spare parts to fix their future issues at the risk of becoming obsolete quicker than ever.

FLAWS OF THE SMART CITY

⚡ FLAWS OF THE SMART CITY
ISSUES

⚡ ISSUE #12
KEY TO THE CITY

This is both a governance and a democracy issue. Who is in charge in the Smart City? Elected representatives, technocrats, algorithms, or private partners? A Smart City is strongly dependent from its contractors and from outsourcing the updates of the urban tech infrastructure. It might lead to a lack of control in the liberalisation of and privatisation of public services.

FLAWS OF THE SMART CITY

⚡ **FLAWS OF THE SMART CITY**
ISSUES

⚡ ISSUE #13
DECONTEXTUALIZED

From catalogs to streets, Smart Cities offer generic technologies without really caring about their adaptation to a precise context. Technological propositions from the Smart City provide cultural codes which are not necessarily fitting together with local values.
If Smart Cities visions are rooted in a culture, it seems it is in a generic western lifestyle.

FLAWS OF THE SMART CITY

⚡ **FLAWS OF THE SMART CITY**
ISSUES

⚡ ISSUE #15

Create your own issue card:

FLAWS OF THE SMART CITY

⚡ **FLAWS OF THE SMART CITY**
ISSUES

⚡ ISSUE #14
MISSING THE HUMAN SCALE

Designing the city smarter often means observing people behaviors from a bird's-eye view, without focusing on the everydayness and the individual. It is missing the messiness of humanity, which will inevitably jam the quest for a perfect logical urban system. City builders are still learning that dealing with humans is all about unpredictability, wildness, irrationality or digital illiteracy.

FLAWS OF THE SMART CITY

⚡ **FLAWS OF THE SMART CITY**
ISSUES

⚡ ISSUE #16

Create your own issue card:

FLAWS OF THE SMART CITY