

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.

This kit has been crafted 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 these cards 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 concepts and to build scenarios for debates.

There are three main decks of cards:

- Issues, listing current flaws of smart city projects.
- Places, listing both common and forgotten urban spaces.
- Actions, listing interventions that could be set for places and issues.

Generic 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 rules cards).
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 and 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 these cards.

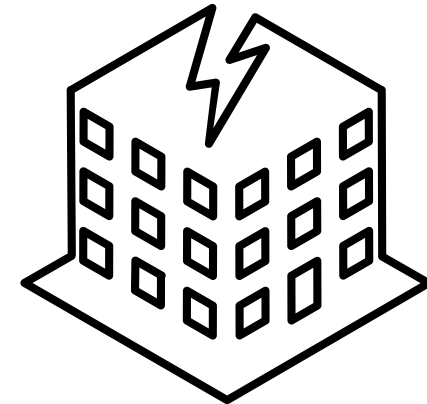
CREDITS

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](https://twitter.com/design_friction) on Twitter.

FLAWS OF THE SMART CITY DESIGN FRICTION KIT



DESIGNED BY BASTIEN KERSPERN
AND DESIGN FRICTION

VERSION 1.1 – MARCH 2015





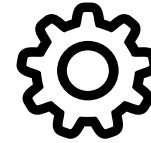
FLAWS OF THE SMART CITY ISSUES CARDS

⚡ FLAWS OF THE SMART CITY 101 THE ISSUES CARDS

An 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

An action card describes one of the intervention that could be set in the urban space. They can also worsen or fix the issue. Each action leads to a reaction, remember to find the right balance between positive and negative externalities.

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 several places in the urban space that could be concerned 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 to improve 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 ones.

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. You see in each issue a flaw that can be fixed.

In this mode, you have to find out how the action may solve the issue in relation with this specific place of the city. Your solution has to generate positive externalities for the whole community.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY RULES

RULE #3

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 genius in town. You see in each issue a potential flaw that, if well exploited, could bring chaos in the streets.

In this mode, you have to find out how the action may worsen the issue linking it with this particular place of the city. Your solution has to generate negative externalities for the whole community or for a specific population.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY RULES

RULE #4

Create your own rules:

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FLAWS OF THE SMART CITY





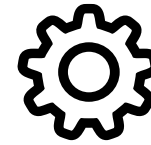
FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #1 GAMIFY

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

A gamified solution could also trigger motivation and involvement as well as constrain the citizen's behavior by telling what has to be done and what is considered as a success.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #3 TRACK

Using digital devices and connected objects lets traces. They are many kinds of persistent artifacts of our digital and physical presence in the hybrid urban spaces.

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

FLAWS OF THE SMART CITY



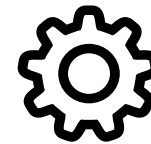
FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #2 SLOW DOWN

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

What could be the outcomes from the slowing down of some processes?

FLAWS OF THE SMART CITY



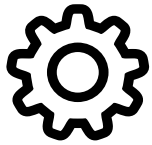
FLAWS OF THE SMART CITY ACTIONS

⚙️ 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 intricacy or to catch the attention of an audience. Visualize reveals hegemonic processes and can highlight unexpected backstage interactions. But is it good to make everything transparent?

FLAWS OF THE SMART CITY





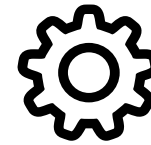
FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #5 REDUCE

Big buildings, big infrastructures and big ambitions. Things tend to grow, but human scale remains unchanged.

Is it worth to see things a bit smaller?

FLAWS OF THE SMART CITY



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.
Market communication is 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



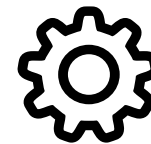
FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #6 MAKE ACCESSIBLE

While digital and physical touchpoints are becoming more diverse across our life, simply ensuring access is a first step to equity.

Then, there is the question of levels of access. Is it only about to see something or be somewhere or also to be able to have an impact on it?

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FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #8 CONTAIN

New territories mean new identities, new identities mean new barriers and new borders. Containment then becomes a strategy to set points of reference, lines not to cross and elements to restrain.
What or who will you contain?
For what purpose?

FLAWS OF THE SMART CITY



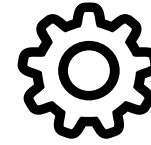


FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #9 OVERSIMPLIFY

Simplification is both a necessity and a defense mechanism to handle an uncleared situation. Oversimplification may be driven by a lack of time or attention. Downside, it could lead to a wrong perception of reality. But seriously, who likes to deal with complex situations?

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FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #11 DISCONNECT

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

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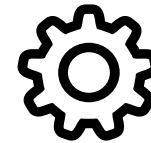


FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #10 HIJACK

Things are programmed to go straightforward, not meaning they head for the right direction. You might help things to be set right by hacking, tweaking, interfering, rerouting and adding some twists in the current process. Start from the existing blocks and reconfigure them with your own adjustments.

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FLAWS OF THE SMART CITY ACTIONS

⚙️ ACTION #12 HUMANIZE

Make it more human. This could mean to add a sense of community, desires and sensitive feedbacks, but also irrationality, unpredictable emotions and antisocial behavior. It definitely could bring a new layer of unavoidable complexity.

FLAWS OF THE SMART CITY



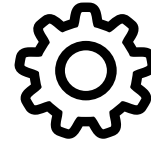


FLAWS OF THE SMART CITY
ACTIONS

⚙️ ACTION #13
ANIMALIZE

Forget about the civilization.
Go for the basics.
Release wildness.
Make it instinctive and primitive.
Bring the animal back in the game.

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FLAWS OF THE SMART CITY
ACTIONS

⚙️ ACTION #15

Create your own action card:

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FLAWS OF THE SMART CITY

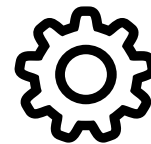


FLAWS OF THE SMART CITY
ACTIONS

⚙️ ACTION #14
WEAPONIZE

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

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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 will disappear without letting any trace.

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FLAWS OF THE SMART CITY PLACES

 PLACE #3
MAIN SQUARE

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

FLAWS OF THE SMART CITY



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.

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FLAWS OF THE SMART CITY PLACES

 PLACE #4
PUBLIC PARK

Green spot for recreational use and a conservation area for flora and fauna. Some of them even have playgrounds and high allergenic pollen counts.

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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 smells to drug consumption.

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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?

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FLAWS OF THE SMART CITY PLACES

PLACE #6 CONVENIENCE STORE

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

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FLAWS OF THE SMART CITY PLACES

PLACE #8 SOCIAL HOUSING

Affordable housing provided by State and non-profit organizations. In the old days a good idea supporting social equity, nowadays a neglected piece of the urban infrastructure, only depicted as a synonym for social troubles.

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FLAWS OF THE SMART CITY PLACES

 PLACE #9
TRAIN STATION

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

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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.

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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 touch screens.

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FLAWS OF THE SMART CITY PLACES

 PLACE #12
MUSEUM

Storing and displaying artifacts which are not always coming from the past. More than any other place, museums are facing questions about the transformation of space into computer code and about the challenges of digitizing physical artifacts.

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FLAWS OF THE SMART CITY PLACES

PLACE #13 PLACE OF WORSHIP

As it was one of the foundation of antic cities, the architecture of places of worship keeps being a crossover between functionality and emotion. Temples, churches or mosques have been built as places for serenity; conflicts turned them into lightning rods for anger.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY PLACES

PLACE #15

Create your own place card:

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FLAWS OF THE SMART CITY



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 transportation modes such as cars, drones, bikes, horses and even pedestrians. Yesterday ruled by laws, tomorrow by computer code.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY PLACES

PLACE #16

Create your own place card:

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FLAWS OF THE SMART CITY





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. Targeting marginality through 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 have internal biases since are culturally constructed by the choices made during the collecting and parsing processes. 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 show the rise of situation rooms and control centers. Closed places providing a top-down control of the infrastructure, seeing the city through a dashboard. This central control of urban facilities and master planning fails to stimulate incremental innovation by a third party. It can be considered as governing by controlling instead of engaging communities.

FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #4 INFRASTRUCTURE FIRST

Smart City programs see the city as a hard structure only. Soft textures of the city, such as culture or people are conscientiously forgotten. Smart City is focused on efficiency as a finale goal, not as a mean to grow common good. City is more than a simple ensemble of resources and commodities and for sure deserves more than promises of security, convenience or efficiency.

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #5 PROPRIETARY ECOSYSTEM

Smart City software logic is oriented on a proprietary philosophy. Using closed standards, it carefully picks who to deal with among lists of designated institutional and business organisations or NGO. This is a closed 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.

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 master streets could be used to undermine resistance or protests against a local government. Security becoming a main goal to achieve, digital defensible spaces and crowd control find an echo in the central control of 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 responsibility from citizens. Constraining behavior with new kind 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 to reclaim control or access to sensors and infrastructures. So, what about smart citizens?

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #8 ALGORITHMIC RELIGION

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

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #9 EMBEDDED VULNERABILITY

By integrating technologies into the urban fabric, it is bringing an intrinsic fragility to an infrastructure initially protected from this vulnerability. In addition to the inherent risks of cyber-attacks, the absence of flexibility of the hardware and the lack of interoperability between the formats and standards is 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 operative strategy in the Smart City sales pitch. With cities built from scratch and riddled by energy consuming devices, self-sustainability should be more than ever a primordial challenge. The promises of smart grids don't weight so much facing the increasing use of rare earth element and its non-ecological extraction in far away land.

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 its software and hardware components. Facing the challenge to get old at the age of fast technological evolution, Smart Cities should start to stockpile spare parts to fix their future issues or to agree with 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 governance and democracy issues. Who is in charge in the Smart City? Elected representatives, algorithms, or private partners? A Smart City is strongly dependent from contractors and over outsourcing to update the urban tech infrastructure, leading to a lack of control on liberalisation of public services. Technocracy is back in town.

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #13 DECONTEXTUALIZED

From catalogs to streets, Smart Cities offer generic technologies without deeply caring about their adaptation to the local context.

Technological propositions from the Smart City provide cultural codes which are not necessarily going together with the local values. If Smart Cities visions are built on something, it seems to be on a western-life culture.

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #15

Create your own issue card:

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FLAWS OF THE SMART CITY



FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #14 MISSING THE HUMAN SCALE

Designing the city smarter seems to mean observing human behaviors from a bird's-eye view, with a focus on crowd management. It's missing the messiness of humanity, which will inevitably jam the quest for a perfect logical urban system.

City making may have its own agenda, dealing with humans is all about unpredictability, wildness, irrationality or digital illiteracy.

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FLAWS OF THE SMART CITY ISSUES

⚡ ISSUE #16

Create your own issue card:

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