Deloitte.

The Future of Government Innovation Report

2016

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DISCOVERING INNOVATION

Future Of Government Innovation Report 2016

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Future Of Government Innovation Report 2016

Introduction

“Fail fast, fail often” has become a mantra for the modern age, with startups pursuing innovative solutions through rapid and constant iteration. But when governments look to innovate — with projects that can impact millions of lives and cost millions of dollars — failing fast and often simply isn’t an option.

It’s a problem that can lead to a hesitant approach to innovation, particularly on a federal scale. There have been serveral cases where governments have come unstuck in the face of new technology. Technological blunders in the roll-out of Universal Credit – a large-scale overhaul of welfare in the United Kingdom – or HealthCare.gov in the United States, are stark reminders of the potential pitfalls for governments with technological ambition.

The purpose of this report, however, is to demonstrate that the opportunities for innovative governments far outweigh the challenges. Larger datasets combined with improved analytical tools are ushering in an unprecedented era of intelligence and detail. With movements such as the Internet of Things gaining momentum, the volume of data and quaity of intelligence is rapidly increasing. By marrying these technologies with a commitment to innovation, new solutions in healthcare, urban planning and the environment will produce tangible benefits that enhance the lives of citizens. This will also build a stronger relationship between citizens and their government.

Through effective dissemination of the data, governments can support this relationship and encourage crowdsourced problem solving. By offering entrepreneurs access to government data, a portion of public service innovation can be outsourced. This will increase net innovation across the country and help strengthen the relationship between a government and its citizens.

The ideas, businesses and initiatives in this report convey a strong vision for future-facing governments. Through these innovations, we’ll see how big and open data projects, citizen engagement initiatives, and innovative public services delivery models can combine to contribute to a more agile, efficient and effective government for the future.

CHRIS KREINCZES
EDITOR & CREATIVE DIRECTOR, SPRINGWISE

Citizen Engagement

Citizen satisfaction and happiness is increasingly acknowledged as one of most significant metrics for indicating the success and prosperity of a nation. Leading the way, Bhutan famously introduced a Gross National Happiness index in 1972, as antidote to what they perceived as an preoccupation with GDP in the West.

Governments of the future should be looking to strengthen both their GDP and their gross national happiness simultaneously, with the understanding that they are both connected and distinct. Social policymaking has a huge role to play here on a macro level, but often overlooked are smaller initiatives that can have a meaningful impact on the day-to-day mood and attitude of citizens. The two campaigns from ZeZe biscuits that begin the examples below are succinct illustrations of this. Both are small gestures designed to foster civility and happiness, and demonstrate the value of low-tech innovation on a small scale.

The theme for the majority of the innovations in this section, however, is the **dissemination of information**, which can have a radical impact on the relationship between a government and its citizens.

In 2005 David H. Maister wrote a paper that examined the importance of information provision and the effect on the human psyche when waiting for a paticular event. As an example, he writes that “if a patient in a waiting room is told that the doctor will be delayed thirty minutes, he experiences an initial annoyance but then relaxes into an acceptance of the inevitability of the wait.” Similarly, passengers feel that wait times are shorter when train stations display arrival times. In essence, uncertain waits feel longer than known, finite waits. Applying this logic to government policy means that a population will feel less anxious, more content, and more engaged with the country in which they reside if they have greater access to information about that country.

What’s more, by opening up a dialogue with citizens, governments can now survey and opinion test their populations with unprecedented ease, leading to better decisions and design. Tapping this collective intelligence can be done either directly or indirectly. An indirect approach, for example, could involve analysing the most frequently asked questions from the My Surrey app, to highlight previously undetected issues within a local area. Here, intelligence is gathered without directly briefing the user to respond to a specific issue or brief. Alternatively, Balancing Act could be used to garner feedback on suggestions on a specific issue (a city’s budget), targeted specifically towards the local inhabitants of that city.

At a Glance

WHAT
Zeze biscuits have launched a marketing campaign in Brazil to encourage socializing — assigning seats on public buses for travellers who want to make friends.

WHO
Zeze Biscuits

WHERE
Brazil

CONTACT
www.markmais.art.br
markmais@markmais.art.br

In Brazil, designated bus seating for friendly people

Zeze biscuits have launched a marketing campaign in Brazil to encourage socializing — assigning seats on public buses for travellers who want to make friends.

Public spaces are increasingly dominated by screens and technology-led communication, so we're starting to see a number of reactionary initiatives designed to detach the consumer from their smartphone and bring them back into the real world.

The Talk To Me London project, for example, used badges to encourage face to face communication, and now, in Pelotas, Southern Brazil, snack company Zeze Biscuits and Mark+ marketing have launched the Alimentando Amizades — or Feeding New Friends — campaign, to encourage social interaction on public buses.

Each bus has a designated area marked 'reserved seating for new friends.' Willing participants simply take a seat and wait for a likeminded traveller to join them. There is even a pack of post-it notes containing conversation starters. The campaign was created in the hope of promoting communication and positivity in an otherwise mundane space.

Are there other ways of transforming people's monotonous commute into a potential marketing space?

At a Glance

WHAT
Zeze Biscuits team up with advertising agency Mark+ once again, this time encouraging pedestrians to compliment each other when waiting at traffic lights.

WHO
Zeze Biscuits with Mark+ advertising agency

WHERE
Brazil

CONTACT
www.markmais.com
markmais@markmais.art.br

Biscuit company encourages compliments at traffic lights

Zeze Biscuits team up with advertising agency Mark+ once again, this time encouraging pedestrians to compliment each other when waiting at traffic lights.

After the success of their Feeding New Friends campaign, where designated bus seats encouraged socializing, Zeze Biscuits have been working with Mark+ to bring another experience-based advertising campaign to the streets of Brazil.

The campaign, entitled “Elogios na Sinaleira” — Compliments at the Traffic Lights — involves interactive stickers placed on lamp posts at pedestrian crossings. People are invited to choose — from a list of compliments — the one that best suits the person on the other side of the road, and place a green magnet over their chosen description. The collaborative campaign is designed to produce genuine moments of positive feelings in the real world, which consumers thereafter associate with Zeze Biscuits.

Disruptive urban advertising creates immersive situations for consumers, taking a real-world approach to brand association.

What other methods could immersive advertising employ?

At a Glance

WHAT
New Niti is an app that aims to teach Myanmar's young people about civil responsibilities and encourage critical thinking.

WHO
OneWorld

WHERE
Myanmar

CONTACT
www.oneworld.org
hello@oneworld.org

A civic engagement app for Myanmar's young people

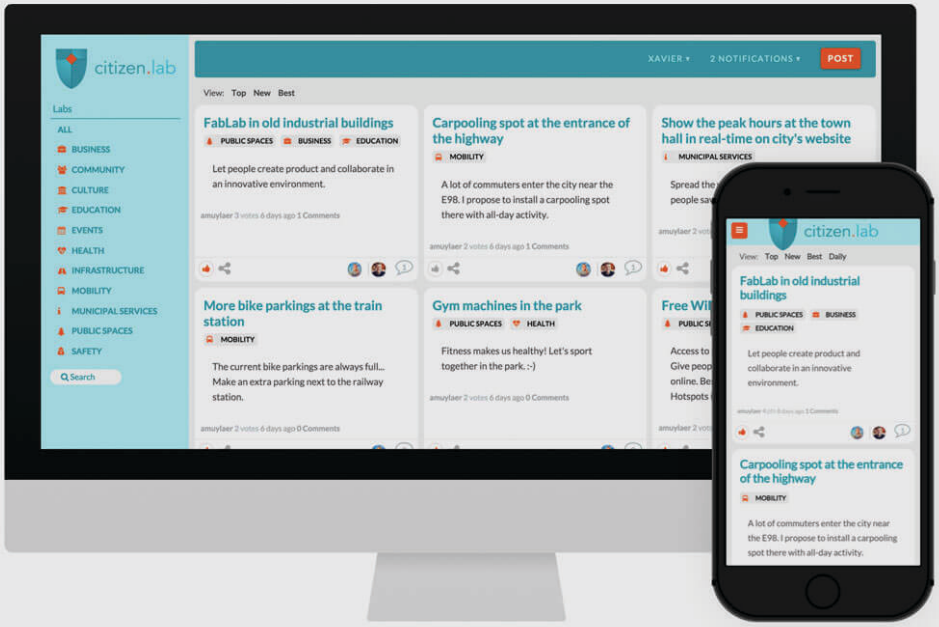
New Niti is an app that aims to teach Myanmar's young people about civil responsibilities and encourage critical thinking.

We have seen a number of organizations using digital technology to engage citizens with local or national politics. CitizenLab, for example, is a Belgium civic engagement platform that brings the town meeting online. Now, New Niti is an app for Android smartphones, which aims to teach Myanmar's young people about civil responsibilities and encourage critical thinking.

The app was created by civil society group OneWorld and is named after the Pali world for knowledge. It includes a number of features including songs, cartoons, animation, quizzes and surveys, designed to elicit interest in citizenship, democracy, elections, rule of law and peace. One feature called 'Let's Ask Myanmar' enables users to pose questions about their country and its infrastructure, which provides explanations via the app. It is hoped it will facilitate greater transparency around previously vague and alienating concepts.

The app is already being used as a resource by development organizations including Oxfam and the Centre for Youth and Social Harmony.

How else could technology be used to engage young people with the government?



At a Glance

WHAT
CitizenLab provides a space for citizens to communicate about ideas for their city, with their local government and each other.

WHO
CitizenLab

WHERE
Belgium

CONTACT
www.citizenlab.co
hello@citizenlab.co

Civic engagement platform brings the town meeting online

CitizenLab provides a space for citizens to communicate about ideas for their city, with their local government and each other.

Citizens may have the ability to express enthusiasm or disgust for government policies online, but these opinions are only as valuable as the ears they reach. We recently saw Balancing Act offer citizens the ability to view and play around with their city's budget, providing governments with a better understanding of the wants and needs of their constituents. Now, CitizenLab is another civic engagement platform, which is bringing the town meeting into the digital age — providing a space for citizens to communicate with their government, and for governments to 'citizensource' opinions on their policies.

To begin, participants visit the platform and enter their city. This will take them to a collection of 'labs' — categories such as education, health and public spaces. They can then post new ideas, join existing conversations and upvote interesting topics. Local governments can then use the platform as a resource to discover the priorities of its citizens. They can respond directly to discussions and consult the public opinion on important issues. Governments can also acknowledge the most vital issues raised by taking them to city council for discussion. The platform is designed to host positive ideas, rather than raise issues.

Could a similar system be implemented on a smaller scale in other institutions such as universities?

At a Glance

WHAT
My Surrey is an app that integrates IBM Watson's artificial intelligence to enable users to ask questions about their city using natural language.

WHO
Purple Forge Corp

WHERE
United States

CONTACT
www.surrey.ca
stsimpson@surrey.ca

Users can ask this 'Siri for cities' app municipal queries

My Surrey is an app that integrates IBM Watson's artificial intelligence to enable users to ask questions about their city using natural language.

Cities are becoming increasingly smarter with the help of municipal technology. In New York, smart trash bins are offering citywide Wi-Fi, and road signs in Sydney are now run with solar-powered e-paper. Purple Forge Corp — a provider of community engagement and self-service solutions to government and enterprises — has now partnered with IBM Watson to develop My Surrey, an app where citizens of Surrey, British Columbia, can input questions and receive evidence-based answers regarding their city.

Watson QA's ability to process and understand natural language means it is able to learn answers to FAQs users may have regarding city services — how to make a noise complaint or inquire about garbage collection, for example. This reduces the time, effort and costs of calling up and speaking to a representative. It also adds convenience, as rather than trawling through search engine results, users can ask the app questions much like they would to Apple's Siri. My Surrey also has information on job opportunities, recreational activities, animal control, transportation, questions such as how to contest a parking ticket, and more. It works by building on existing knowledge, and will improve as more citizens use it.

Surrey, BC is the first to pilot this app, which is available on the Blackberry App World, Google Play, and the App Store. Could this become the norm for future smart cities?

At a Glance

WHAT
The Environmental Voting Project plans to politicize 15 million existing environmentalists, to dramatically improve green voter turnout.

WHO
Environmental Voter Project

WHERE
United States

CONTACT
www.environmentalvoter.org
info@environmentalvoter.org

Project to make politics green, by getting environmentalists to vote

The Environmental Voting Project plans to politicize 15 million existing environmentalists, to dramatically improve green voter turnout.

Despite increasingly strong environmental attitudes among US citizens, polls consistently show that eco-friendly policies are a low priority for voters, and therefore politicians. In the recent nation-wide election over 15 million identifiable environmentalists failed to vote. Now, the Environmental Voter Project aims to change that, by politicizing existing environmentalists and dramatically improving green voter turnout.

The Environmental Voter Project is a non-profit startup which aims to find and engage green voters so as to increase the demand for progressive environmental policy. It will use a combination of social network incentives, big-data analytics, predictive modeling, and voter mobilization tools.

Political campaigns usually only target reliable voters, as doing so is more efficient, and reaching out to non-voters will cause their concerns to show up in polls. The Environmental Voter Project is a non-partisan organization, so it won't endorse individual candidates or attempt to influence specific elections — it focuses instead on shifting the long-term political landscape towards environmental policies.

Are there other disengaged voters who could be politicized in this way?

At a Glance

WHAT
NeedIn is a community-based platform that encourages people to post 'Needs' — businesses needed in a certain location.

WHO
NeedIn

WHERE
United States

CONTACT
www.need-in.co
www.need-in.com/contact

App lets locals request businesses needed nearby

NeedIn is a community-based platform that encourages people to post 'Needs' — businesses needed in a certain location.

When a person finds themselves having to drive to the next town for the nearest pharmacy, they tend to just suck it up — or perhaps have a little grumble to their friends about it — meaning no progress is made. But a new app called NeedIn could change this by enabling users to request businesses that are lacking in their local area.

NeedIn is a community-based platform that encourages people to post 'Needs'. These are effectively pins, dropped in specific locations onto a map, detailing what business is needed and even the desired company. Users can then publish their 'Needs' via social media and gain support from others who agree. Then, NeedIn share the information with relevant businesses and try to get the requests fulfilled.

Are there other tools to help companies find out where their business is needed?

At a Glance

WHAT
QualiT is an app enabling bus riders on the Silver Line to rate the quality of their travel.

WHO
Massachusetts Institute of Technology

WHERE
United States

CONTACT
qualit.mit.edu
mbta.quality@mit.edu

App lets Boston-area bus riders rate their trip

QualiT is an app enabling bus riders on the Silver Line to rate the quality of their travel.

We've seen technology improving public transport in a variety of ways, from priority seat alerts that light up when a pregnant traveler is on board, to self-driving buses that are hailed with an app. Now, with QualiT, MIT's new bus ride rating app, researchers can compare real-time user experiences on public transport in Cambridge and Boston, Massachusetts.

Riders are prompted to rate their trip every time they take a Silver Line bus. The app collects anonymous data, and is freely available for both Android and Apple devices. The app is a collaborative project between the MIT departments of urban studies and civil engineering, the Massachusetts Bay Transport Authority (MBTA) and the Singapore-MIT Alliance for Research and Technology.

The results gathered will help the MBTA improve its understanding of peoples' modes and paths of travel. Currently a pilot, MBTA says that if user engagement with the app is high enough, they will expand its use to other areas of the public transport system.

How else could public sector industries adapt private sector approaches to customer engagement?

At a Glance

WHAT
Transport for London has introduced a pilot program, which enables commuters to receive service updates via their Twitter direct messages.

WHO
Transport for London

WHERE
United Kingdom

CONTACT
alerts.beta.tfl.gov.uk/?cid=twitter-alerts
pressoffice@tfl.gov.uk

TfL will send commuters Twitter DMs for delays

Transport for London has introduced a pilot program, which enables commuters to receive service updates via their Twitter direct messages.

We've seen Transport for London (TfL) embrace innovative tech before, with an accessible travel planning app helping those with limited mobility navigate the London underground. Now, Travel Alerts on Twitter will give commuters personalized, real-time travel notifications via their devices.

The initiative enables users to receive service disruption notifications via direct messages on Twitter. Commuters first visit the TfL website and log in with their Twitter accounts. Then, they can choose which lines they want to receive notifications about, and tailor the updates to only receive pings when it is relevant, such as weekday commuting hours. While currently only offering updates on the Central and District lines and the Overground and Rail services, if the pilot proves successful the project could be expanded to the whole network.

How else could transport networks alert users to travel updates?

At a Glance

WHAT
The Bürgerforum Vorarlberg mobile app is enabling citizens to flag community problems that need addressing by sending photos and text direct to the council.

WHO
Bürgerforum Vorarlberg

WHERE
Austria

CONTACT
www.buergerforum.vol.at
www.twitter.com/vorarlberg

In Austria, council uses app to crowdsource community issues

The Bürgerforum Vorarlberg mobile app is enabling citizens to flag community problems that need addressing by sending photos and text direct to the council.

Civic authorities can't be everywhere at once and often rely on citizens to inform them of the improvements that need making. The NYPD already launched its own crowdsourcing crime reports app, and now the Bürgerforum Vorarlberg mobile app is enabling citizens to flag community issues that need addressing by sending photos and text direct to the council.

Available for all residents to download from the App Store and Google Play, the app has been developed by Vorarlberg news outlets VN and Vol.at. Users who have found a problem on the streets of the Austrian province can take a photo and add a caption, while the app automatically adds a geolocation tag. The issue is then added to a map of complaints and concerns filed by other residents. The idea is that local authorities can then easily see the issues that need to be dealt with.

Are there other ways governments and local authorities can use crowdsourcing to get a better idea of what the public really want?

At a Glance

WHAT
TreeWiFi's smart birdhouses measure air quality in real-time, and provide free wifi when pollution levels drop.

WHO
TreeWiFi

WHERE
Netherlands

CONTACT
www.heroesandfriends.com
jorislam@gmail.com

In Amsterdam, clean air gets free wifi from trees

TreeWiFi's smart birdhouses measure air quality in real-time, and provide free wifi when pollution levels drop.

Fresh, clean air is one of the quickly diminishing commodities most city dwellers crave on a daily basis, and we have seen air purifying billboards and navigation apps help urbanites breathe better. Based in Amsterdam, TreeWiFi's smart birdhouses let residents know about the air quality of their neighborhood, and if it is clean enough, they get free wifi.

Using nitrogen dioxide (NO2) sensors to measure the amount of combustion particles in the air, the birdhouses light up with LED lights to show real-time levels of pollution.

When the lights go green, the air quality has improved, and the network makes the free wifi available. As part of the free connection, TreeWiFi sends users tips on ways to improve local air quality. Right now, the company is focusing on the amount of NO2 in the air, as the majority of it comes from smoke and exhaust fumes — two things that residents can easily affect.

TreeWiFi plans to make the data they collect available to researchers and several government departments have already expressed interest in the project due to its scope. Should a birdhouse be installed on every street in the city, a vast quantity of timely air pollution data will be available for analysis.

How could local sustainability projects be scaled for regional or national use?

At a Glance

WHAT
Wasted is a community project that lets citizens exchange their plastic waste for local rewards, and recycles the rubbish into versatile building blocks.

WHO
CITIES Foundation

WHERE
Netherlands

CONTACT
www.wastedlab.nl
info@wastedlab.nl

Rewards scheme turns local waste into plastic blocks for community projects

Wasted is a community project that lets citizens exchange their plastic waste for local rewards, and recycles the rubbish into versatile building blocks.

Global waste is such a massive issue that it can often feel like individual consumers' efforts to recycle and reuse are futile. WASTED is a project which hopes to dispel that myth by developing a local solution to the global problem of plastic waste. The project — run by CITIES Foundation — recently launched their pilot scheme in Amsterdam Noord.

WASTED is a three-part system which combines recycling, community development, design and education. The core of the project involves recycling local plastic into versatile 'Blocks' during volunteer workshops, which are then used to build objects such as benches, planters and stages for use within the community. The 'Blocks' are made from plastic waste donated by local residents, who receive reward tokens that can be used to redeem offers at local participating businesses, including free beers, discounts on groceries and 50 percent off bike repairs.

Individuals, collectives and schools can also take advantage of a free educational package which teaches participants about plastic, upcycling and how to reprocess locally recycled plastic waste. The pilot scheme in Amsterdam Noord has seen great success with 231 participating citizens, 23 local businesses, nearly 2000kg of plastic collected and the potential to build over 800 blocks. CITIES have created various open source resources to help people launch further schemes in other neighborhoods.

What other forms of waste can also be reused in educational, community-building ways?

Big Data

Despite its recent emergence as a popular buzzword, Big Data as a concept is nothing new. In basic terms, big data simply refers to the enormous bank of information that organizations and governments create and collect.

Storing and processing Big Data is a decades-old practice, and visualizing that great dump of information only tells part of the story. What's special about today's Big Data is that it is largely 'unstructured,' which means that it isn't in a specific database, and with modern analytics, that deep pool of data becomes an immensely powerful tool. For example, Predict HQ, featured below, draws in data from a huge array of sources to intelligently predict the impact of global and local events on businesses. Similar data and analysis could be used for traffic control or to anticipate demands on public services.

The primary challenges of working with Big Data are twofold: how to gather and how to analyze. The third challenge, inherent in the second, is determining a clear strategy for the subsequent use of that analysis.

While some governments around the world are beginning to embrace the potential of Big Data, most countries are yet to scratch the surface. The benefits of using data to drive smarter solutions to urban planning, healthcare and recycling can all be seen below. But Internet of Things innovations and networks such as The Things Network open up far richer datasets for analysis. By supplementing existing datasets with these sources, new levels of detail and accuracy become possible.

Inevitably, an increase in the number of datasets and the volume of data available makes analysis more challenging. The International Data Corporation (IDC) predicts that the digital universe will weigh in at a colossal 44 zettabytes of data by 2020. The importance of addressing this challenge should not be understated. mySideWalk, featured below, is a helpful tool to facilitate early analysis and can act as a good reference point in larger projects.

Data should be analyzed under a clear strategy that defines the purpose of the analysis. Governments should seek to create an intelligent infrastructure that uses

Big Data

automation wherever possible, has analytics and tracking embedded from the outset — rather than tacked on as an afterthought — and uses machine learning to heal and optimize the data. Big Data is called big for a reason, and any system too heavily reliant on manual processes will soon become unsustainable.

In addition to these technical considerations, there are human concerns which need to be addressed when collecting data. Headlines about Facebook, Instagram and Google's terms of service agreements — which grant those companies global licenses to users' content and data — have fuelled mistrust of data collection techniques. There are also justified concerns from the public over personal data being used in such a way that re-identifies previously anonymized data.

A recent report form the UK's Science and Technology Committee addressed these concerns and championed transparency as the antidote. An honest dialogue around the use of data, and improved legislation to regulate it, should be the bedrock of trustworthy data collection. Committee chair Nicola Blackwood, MP, suggests the formation of a 'Council of Data Ethics' to address the public's concerns, and that privacy could be better protected by making the de-anonymising of data a criminal offence.

Public consent cannot be taken for granted, and providing options to control how much and what type of data is being handed over — and to who — will go a long way to restoring trust. Options should also be provided for the user to revoke access to their data at a later stage, to further enhance a relationship based on free and informed consent.

Later in this report we'll also look at the benefits of opening up the anonymized data sets themselves to the public. The transparency that all of these actions help create can help strike a balance between the public's privacy concerns and the many benefits of a Big Data approach.

At a Glance

WHAT
PredictHQ uses data to predict trends and show what global and local events are affecting businesses.

WHO
PredictHQ

WHERE
New Zealand

CONTACT
www.predicthq.com
info@predicthq.com

Big data program predicts what events are affecting businesses

PredictHQ uses data to predict trends and show what global and local events are affecting businesses.

Finding out what events impact a business can have a huge effect on profits. Local and international happenings can have a major influence on people using a business or service, but sometimes it can be hard for companies to spot the trends by themselves.

In order to help businesses understand events, from national holidays to local festivities, PredictHQ has created a service that produces in-depth reports to help businesses identify events that affect their revenues and their customers.

PredictHQ's platform collects data from both local and global events and uses this to tell companies what might have an impact on their business, and predict what forthcoming events might affect business in future. PredictHQ has a web app that enables businesses to check when and where real-time events are relevant to their business using a map and a calendar, and an API also gives businesses a single point to access big data and build applications.

We recently saw a platform offering geotagged social media analysis for local user engagement. Could a platform combine the two?

At a Glance

WHAT
Medaware uses big data analytics to flag up prescription errors, enabling clinicians to correct mistakes before patients are put in danger.

WHO
Medaware

WHERE
Israel

CONTACT
www.medaware.com
www.medaware.com/contact-us

Platform uses big data to prevent prescription errors and save lives

Medaware uses big data analytics to flag up prescription errors, enabling clinicians to correct mistakes before patients are put in danger.

In the US alone, one million injuries occur every year as a result of prescription errors. Mistakes are understandable when you consider the sheer number of prescriptions filled out on any given day, but the risks associated with those errors are very real, and result in thousands of preventable deaths. Hoping to drastically reduce the potential for such costly accidents, Medaware is a platform which uses big data analytics to flag up errors and enable clinicians and pharmacists to correct mistakes before patients are put in danger.

Medaware offers a significant improvement on current systems, which operate using rule-based solutions and therefore only catch a fraction of errors. Conventional systems usually focus on spotting potentially dangerous drug interactions, dosage problems or allergies and so will miss any problems outside of their predetermined rules. Medaware, on the other hand, uses big data analytics, enabling it to highlight a broader range of potential mistakes with more accuracy.

When a physician prescribes a new drug, the system immediately evaluates whether this medication is a deviation from the prescription pattern of similar patients. If Medaware detects a deviation, it is most likely an error, and the system notifies the clinician immediately.

Conventional alert systems are overridden by physicians in 96 percent of cases. Medaware has a 10 percent false alarm rate, which reduces the risk of alarm fatigue. How else could big data be used to detect deviations and errors in the medical field?

At a Glance

WHAT
OpenTraffic uses data from a ride-share service to help government agencies manage traffic flow.

WHO
Grab Philippines

WHERE
Philippines

CONTACT
www.worldbank.org
dllorito@worldbank.org

Real-time big data helps manage traffic in the Philippines

OpenTraffic uses data from a ride-share service to help government agencies manage traffic flow.

Big data has proved incredibly useful for those organizing the flow of people or vehicles. We have already seen it used for better urban planning, and in airports and on New Zealand's roads. Now, in the Philippines, the ride-hailing platform Grab has launched OpenTraffic, in collaboration with the World Bank and the Department of Transportation and Communications, which provides real-time data to help manage traffic flow in 30 Southeast Asian cities.

Grab already has access to masses of data through its drivers' GPS data. It will now be using that information to provide real-time travel time estimates and information about traffic incidents and weather problems. The information will be available on the open platform OpenTraffic and 200 staff at the Philippine National Police, the Metro Manila Development Authority and the Department of Public Works and Highways, have already been trained to use it.

Could similar initiatives work in other regions?

At a Glance

WHAT
The Things Network is helping to build free city-wide internet in Amsterdam, without the use of wifi or 3G.

WHO
The Things Network

WHERE
Netherlands

CONTACT
www.thethingsnetwork.org
wienke@thethingsnetwork.com

Free, open, crowdsourced city-wide IoT network

The Things Network is helping to build free city-wide internet in Amsterdam, without the use of wifi or 3G.

A world where internet access is free for all, where an Internet of Things is networked by the users, for the users. Is it possible? In Amsterdam, it's already happened. The Things Network (TTN) is planning to build a global, open, crowdsourced Internet of Things data network, and work is well underway.

In a period of just 6 weeks, Amsterdam was transformed into a city-wide accessible network, without the help of any big business or telecoms companies — it has been entirely crowdsourced. TTN initiator Wienke Giezeman saw the potential in a new technology called LoraWAN (Long-range Wide Area Network) to create gateways for connecting municipal geographic zones. The devices allow things to connect to the internet without the use of wifi, 3G, or Bluetooth. It has a wide range and cheap development and installation costs — EUR 1500 for 7 mile radius devices.

Pilot projects already underway in Amsterdam include devices that alert boat owners to potential flooding of their moored vessels, and a device to monitor users' bikes. The port of Amsterdam, which struggles to support the cost involved in setting up wireless networks across the whole port area, has also been contributing to the project. After the rapid success of Amsterdam's crowdsourced city-wide activation, TTN is hoping other cities will be queuing up to create their own citizens' network.

LoraWAN technology will allow the IoT to change the way cities function — with crowdsourcing from those who can afford to install gateways, all the inhabitants will benefit from having their city connected.

What other projects are possible with a Things network?

At a Glance

WHAT
mySidewalk analyzes open datasets to help local governments and communities work better together.

WHO
mySidewalk

WHERE
United States

CONTACT
www.mysidewalk.com
hello@mysidewalk.com

Startup helps make cities smart through open data

mySidewalk analyzes open datasets to help local governments and communities work better together.

With vast amounts of data now publicly available, the answers to many questions lie buried in the numbers, and we already saw a publishing platform helping entrepreneurs visualize government data. For an organization as passionate about civic engagement as mySidewalk, this open data is a treasure trove of compelling stories.

mySidewalk was founded by city planners who recognized the potential force for change contained in local communities. Yet without a compelling reason to get involved, many individuals remain 'interested bystanders' — something mySidewalk is determined to change.

Using the latest available data, mySidewalk creates dashboards that are customized for every project to help local public officials make the most informed decisions possible. The dashboards present visualizations of a wide range of socioeconomic and demographic datasets, as well as provide local, regional and national comparisons, all of which help to tell the stories behind the numbers.

It is those stories that mySidewalk believes will provide enough motivation for the 'interested bystanders' to get involved. As it says on the mySidewalk website, "Share your ideas. Shape your community." Organizations of all types have taken notice of the power of data, with businesses using geo-tagging to analyze social media content, and real-time information sharing helping humanitarians in crises.

How else could data be used to effect positive social change?

At a Glance

WHAT
Placemeter uses sensors, video and an algorithm, to collect behavioral data that can help businesses and city planners optimize space.

WHO
Placemeter

WHERE
United States

CONTACT
www.placemeter.com
partnerships@placemeter.com

System quantifies citizen behavior for better urban planning

Placemeter uses sensors, video and an algorithm, to collect behavioral data that can help businesses and city planners optimize space.

In the age of data, more and more companies are tracking their customers' every move online, using that information to adapt and improve their services. Now, Placemeter is a system that takes a similar approach to urban environments, using sensors, video and an advanced algorithm to give municipalities access to behavioral data, so they can make their cities more functional and better suited to its dwellers.

Placemeter is an urban intelligence platform that can be used with either its own sensors or pre-existing surveillance cameras. It analyzes pedestrian and vehicle movements and turns them into valuable data. The data can help businesses optimize the layouts of stores to maximize visitors. Similarly, municipalities can make smarter, more informed decisions about city planning that streamline foot traffic and create safer, more decongested environments. The system is currently being implemented in Paris as part of the pedestrianization of some of the city's busiest intersections — such as Place de la Bastille.

We have already seen Blipsystems use beacons to collect data about movement through spaces including airports and highways.

How else could physical data tracking be used IRL to improve facilities and businesses?

At a Glance

WHAT
CleanSpace uses an app and tag to monitor and crowdsource an air pollution map.

WHO
CleanSpace

WHERE
United Kingdom

CONTACT
our.clean.space
twitter.com/CleanSpace

Tag monitors air pollution and never loses charge

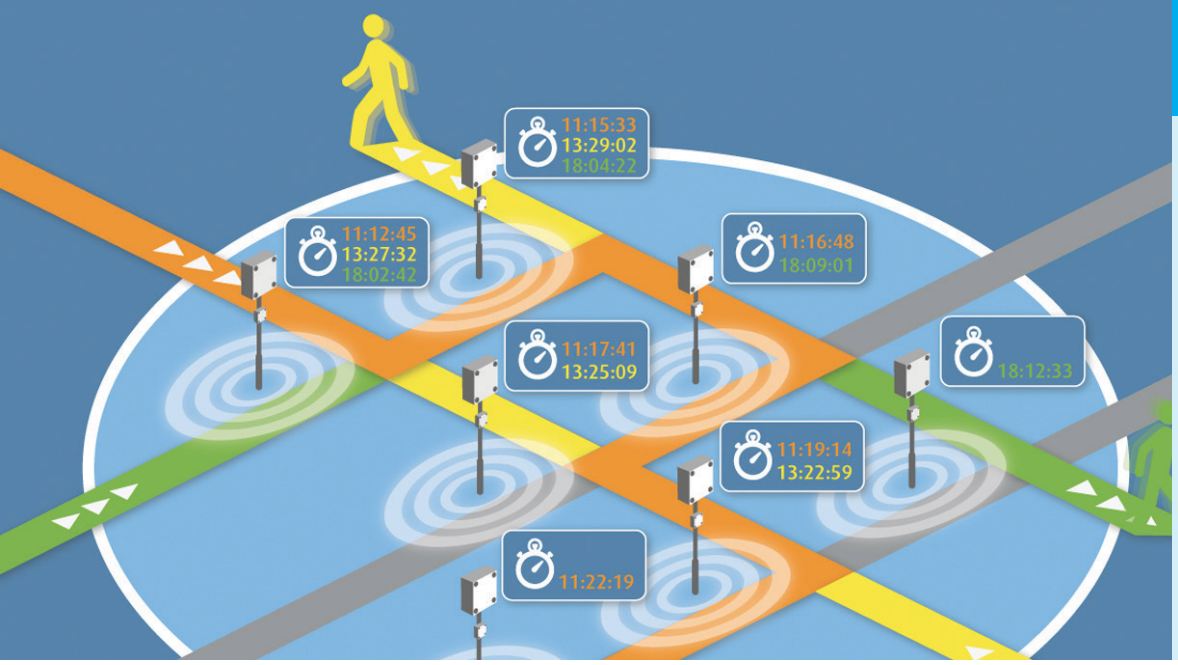
CleanSpace uses an app and tag to monitor and crowdsource an air pollution map.

The battle to clean up the air of major cities is well underway, with businesses and politicians pledging to help with the pollution issue. We have seen projects using mobile air sensors mounted on pigeons to bring the problem to public attention, and now a new crowdsourcing campaign is attempting to map the UK's air pollution.

CleanSpace uses a portable, air pollution-sensing tag to track exposure to harmful pollutants in real-time. The tag is connected to an app, which analyzes and combines the data to that of other users in the UK to create an air pollution map.

An interesting part of the CleanSpace Tag's technology is the fact it never needs to be charged. The startup say the tag is powered by harvesting 2G, 3G, 4G and wifi signals, which keep its small power requirements filled. The app also rewards users for traveling on-foot or by bike, offering them "CleanMiles" that can be exchanged for discounts with the CleanSpace's partners.

What other social causes could benefit from crowdsourcing apps and gadgets?



At a Glance

WHAT
The city of Aalborg is using Bliptrack — the device-detecting sensor system — to measure visitor behavior during the busy Christmas period.

WHO
Bliptrack

WHERE
Denmark

CONTACT
www.blipsystems.com
sales@blipsystems.com

Danish city uses sensor system to understand Christmas shoppers

The city of Aalborg is using Bliptrack — the device-detecting sensor system — to measure visitor behavior during the busy Christmas period.

The success of a Christmas market or winterfete doesn't always translate to money spent, it may simply increase foot traffic or visitor dwell time. Now, the Danish city of Aalborg is measuring exactly those quantities during its busy Christmas shopping period, using Bliptrack, the sensor system that detects devices that are using wifi.

We have already seen Bliptrack used in JFK airport to let passengers know their wait times. Now, Aalborg City Business Association has installed the system in the city centre to track visitor behavior.

The system consists of a number of sensors placed around the city, which detect nearby wifi devices such as smartphones and tablets. As a pedestrian or car moves around from point to point, they are detected by each sensor. Each device has a unique MAC address, meaning the system is able to track the user's journey and how long they took to get from one sensor to the next. Aalborg can then use the data collected to understand the impact of events, as well as visitors' shopping activities. The insights can help them improve business operations such as opening at optimum hours and providing the right amount of staff.

Google Maps already uses a similar system to estimate arrival times according to real-time traffic data. Where else could data like this be used?

At a Glance

WHAT
Stockholmstag will soon be using an algorithm that predicts network delays in advance, giving operators time to resolve them.

WHO
Stockholmstag

WHERE
Sweden

CONTACT
www.stockholmstag.se
info@stockholmstag.se

Algorithm predicts and prevents train delays two hours in advance

Stockholmstag will soon be using an algorithm that predicts network delays in advance, giving operators time to resolve them.

Transport apps such as Ototo make it easier than ever for passengers to stay informed about problems with public transport, but real-time information can only help so much — by the time users find out about a delayed service, it is often too late to take an alternative route. Now, Stockholmstag — the company that runs Sweden's trains — have found a solution in the form of an algorithm called 'The Commuter Prognosis', which can predict network delays up to two hours in advance, giving train operators time to issue extra services or provide travelers with adequate warning.

The system was created by mathematician Wilhelm Landerholm. It uses historical data to predict how a small delay, even as little as two minutes, will affect the running of the rest of the network. Often the initial late train causes a ripple effect, with subsequent services being delayed to accommodate new platform arrival time, which then affect subsequent trains, and so on. But soon, using 'The Commuter Prognosis', Stockholmstag train operators will be able to make the necessary adjustments to prevent this. In addition, the information will be relayed to commuters, enabling them to take a different train and therefore reducing overcrowding.

Could this system be implemented in the MTA subway of New York, which is often prone to delays?

At a Glance

WHAT
Smart stickers will be fitted onto every vehicle, enabling authorities to monitor real-time traffic and track criminals.

WHO
Government of Malaysia

WHERE
Malaysia

CONTACT
www.llm.gov.my
aduan@llm.gov.my

In Malaysia, RFID road tax stickers will track all vehicles

Smart stickers will be fitted onto every vehicle, enabling authorities to monitor real-time traffic and track criminals.

By 2018 every vehicle on Malaysian roads will be trackable via a new RFID system. Starting from October, cars and motorcycles will be fitted with new tax stickers equipped with RFID — Radio Frequency Identification — that enable the police and other authorities to track the movements of all local and foreign vehicles.

The stickers — which cannot be removed or tampered with — are primarily to deter criminals, but will also work in conjunction with a forthcoming electronic payment system and provide real-time traffic monitoring. But the system obviously has problematic implications for citizens' privacy, and the data — though encrypted — could easily be abused.

How could this technology be adapted into a less dubious concept?

At a Glance

WHAT
LendMed is an inventory system that will enable hospitals and departments to keep on top of expensive equipment exchanges.

WHO
LendMed

WHERE
United States

CONTACT
www.lendmed.com
www.lendmed.com/contact

Medical inventory system could save hospitals USD 1 million per year

LendMed is an inventory system that will enable hospitals and departments to keep on top of expensive equipment exchanges.

Medical equipment and supplies are incredibly expensive, so very few hospitals own all the items they need. Instead, institutions borrow heavily from one another — amounting to USD 10 billion worth of assets leaving hospitals every year. LendMed is an inventory system that will enable hospitals and departments to keep on top of these exchanges — a function that currently has no technological aid.

LendMed is a digital lending network, which can be accessed via kiosks, smartphone applications or portals — connecting departments within a hospital and hospitals with their region and nationwide. To begin, departments upload their inventory to the system — everything from machinery and standard equipment such as wheelchairs, to pharmaceuticals and single use items such as bandages. Then, whenever they need to borrow something from outside of their inventory, they post a request, which LendMed automatically sends only to similarly-stocked departments. If someone can help they approve the request, and if the item is from a different facility, they can organize a courier — all within the system. Users can create and send invoices too, making it easier for users to organize the return of those items.

LendMed's system means there is automatically a record of all exchanges that take place. The data collected can also be transferred to detailed reports, which can reveal patterns in the exchange, and highlight items that are frequently borrowed and may need to be purchased.

Could a similar system be implemented in any other industries that use expensive equipment?

Open Data, Public Service Delivery Models & Collaboration

The first two sections of this report have looked at the benefits of both a smart approach to Big Data and a dialogical approach to citizen engagement. However **a government of the future should combine both strategies — by offering citizens access to open data — to realize more efficient methods for creating and delivering services.**

Open data simply refers to a process of making data publicly available. When an engaged population has access to large datasets and information, they are given both the permission and capability to innovate for their government and fellow citizens. Open source data is the fundamental building block for crowdsourced government innovation, whereby a government outsources part of their innovation programme to the people it is innovating for.

To enable this, as much relevant data as possible should be released, with care taken to ensure anonymity. The data should be freely available and presented in an intuitive and readily workable format. DataPress — a platform that publishes raw data and helps non-technical users analyze and release open data — is an early entrant to help facilitate this.

Beyond creating new platforms, engaged citizens can also become a delivery mechanism for new or pre-existing services, as we can see in the examples MotoRepellent and Mobisol's Solar Air Distribution network. MotoRepellent is a device that fits onto the back of motorbikes that could repel mosquito populations from entire cities. Mobisol's Solar Air Distribution network adds drone recharging stations to the roofs of homes in rural Africa, creating a delivery infrastructure for its customers. Both innovations intelligently enable citizens to carry out a public service themselves. Taken to its extreme, the citizen issued parking tickets in Sao Paulo demonstrate both how flexible and substantial the gains from such an approach can be, with a potential massive reduction in overheads and a more efficient and widespread network of traffic wardens.

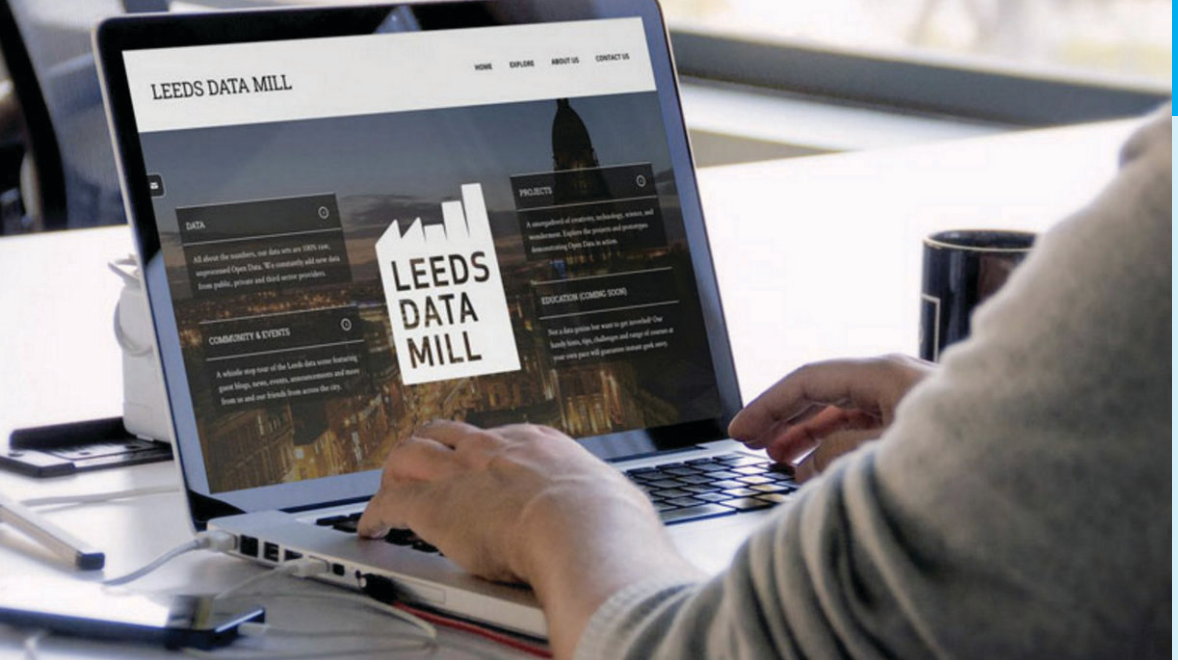
Open Data, Public Service Delivery Models & Collaboration

A government of the future must look to first connect with citizens through increased engagement, and then capitalize upon that engagement by facilitating the crowdsourced creation and delivery of services. At the same time, it cannot focus solely on enhancing connections externally. Rather, it must look to enhance connections internally.

The City of New York have already established The Mayor's Office of Data Analytics (MODA), whose DataBridge platform provides a data store and a set of tools for public service workers to analyze data. This is comparable to a DataPress for internal use. MODA has quickly produced results, boosting the inspection "hit" rate of dangerous buildings and increasing the detection of fraudulent business licences.

The Amager Bakke power plant featured below, complete with ski-slope, also represents a collaborative approach, demonstrating what's possible when installations look to address more than one issue, or serve just one purpose. Both the Amager Bakke power plant and MODA are united in their emphasis on inter-departmental collaboration and open dialogue. The examples from page 44 onwards in this section demonstrate the results of considering flooding when building roads, food donations in relation to parking fines and garbage disposal in relation to wifi connectivity.

These innovations require a truly holistic approach to collaboration, at both governmental and policy level, where departments are more connected, through greater communication, than ever before.



At a Glance

WHAT
DataPress is a platform that publishes raw data and helps non-technical users analyze and release open data.

WHO
DataPress

WHERE
United Kingdom

CONTACT
www.datapress.com
contact@datapress.io

Publishing platform visualizes government data for entrepreneurs

DataPress is a platform that publishes raw data and helps non-technical users analyze and release open data.

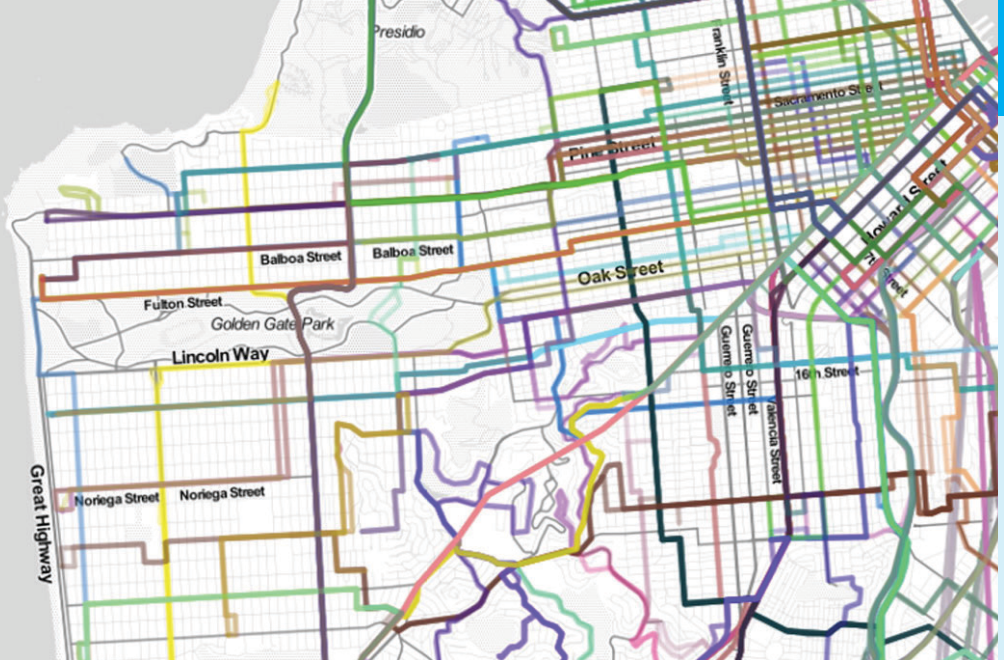
Open data is helping to solve common problems for businesses and governments. Initiatives in the UK are starting to democratize the availability of information, but many people still find it hard to access or understand data from governments and local councils.

That's the problem DataPress is trying to solve. The London-based startup, founded by former developers who worked on the UK Government's data.gov.uk website, transforms data from local governments into easy-to-use resources for residents and communities. The founders also believe more open data will help encourage startups, with entrepreneurs using data to develop business ideas.

The DataPress cloud-based platform allows government officials to better open up complicated information and statistics. The team at DataPress works with civil servants to build data visualizations for everyday use, and offer training to help turn public data into a public utility.

The company has worked with teams in London and Leeds to improve their use of open source data. The platform also helps users to 'follow' data publishers in a similar manner to a blog — the developers describe their idea as a "Wordpress for data".

What types of businesses can benefit from a platform like DataPress?



At a Glance

WHAT
Transitland's Mapzen Turn-by-Turn routing service is now capable of mapping travel in more than 200 regions worldwide.

WHO
Transitland

WHERE
United States

CONTACT
www.transit.land
transitland@mapzen.com

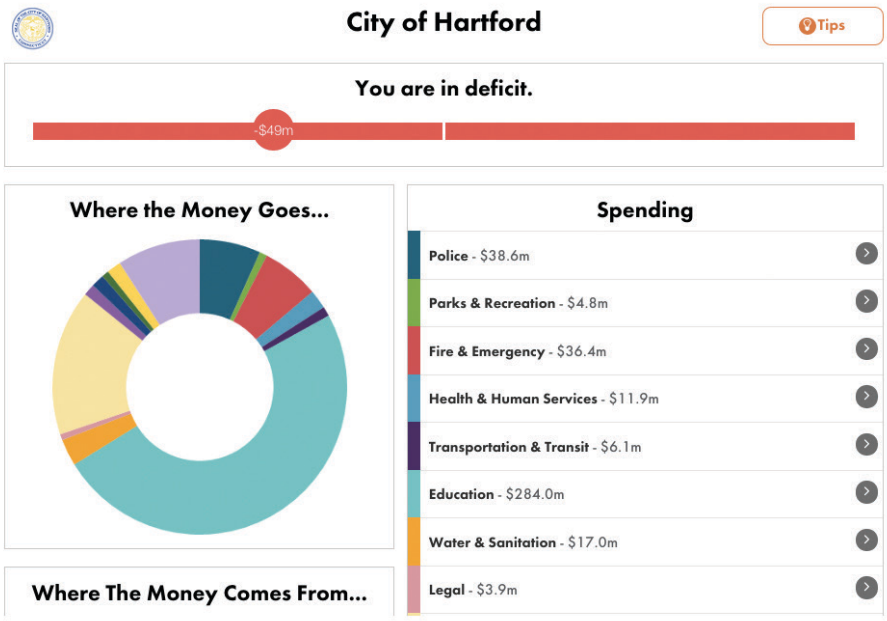
Open data for transit app developers

Transitland's Mapzen Turn-by-Turn routing service is now capable of mapping travel in more than 200 regions worldwide.

Creating good transit apps can be difficult, given the vast amount of city (and worldwide) data app builders need to have access to. Aiming to address this, Transitland is an open platform that aggregates publicly available transport information from around the world.

The startup cleans the data sets, making them easy-to-use, and adds them to Mapzen, an open source mapping platform. Mapzen Turn-by-Turn is the platform's transport planning service that, following its latest expansion, now contains data from more than 200 regions around the world on every continent except Antarctica. Transitland encourages anyone interested in transport, data and mapping to get involved, from adding data streams to sharing new apps and analyses. Mapzen Turn-by-Turn also manages all licensing related to use of the data, leaving developers free to discover and build. The platform is available to use for free.

What other data sets can be made more accessible?



At a Glance

WHAT
Balancing Act shows citizens their city's budget breakdown, and lets them interact with it and hypothesize a budget according to their priorities.

WHO
Engaged Public

WHERE
United States

CONTACT
www.abalancingact.com
www.abalancingact.com/contact

Interactive app lets constituents help balance their city's budget

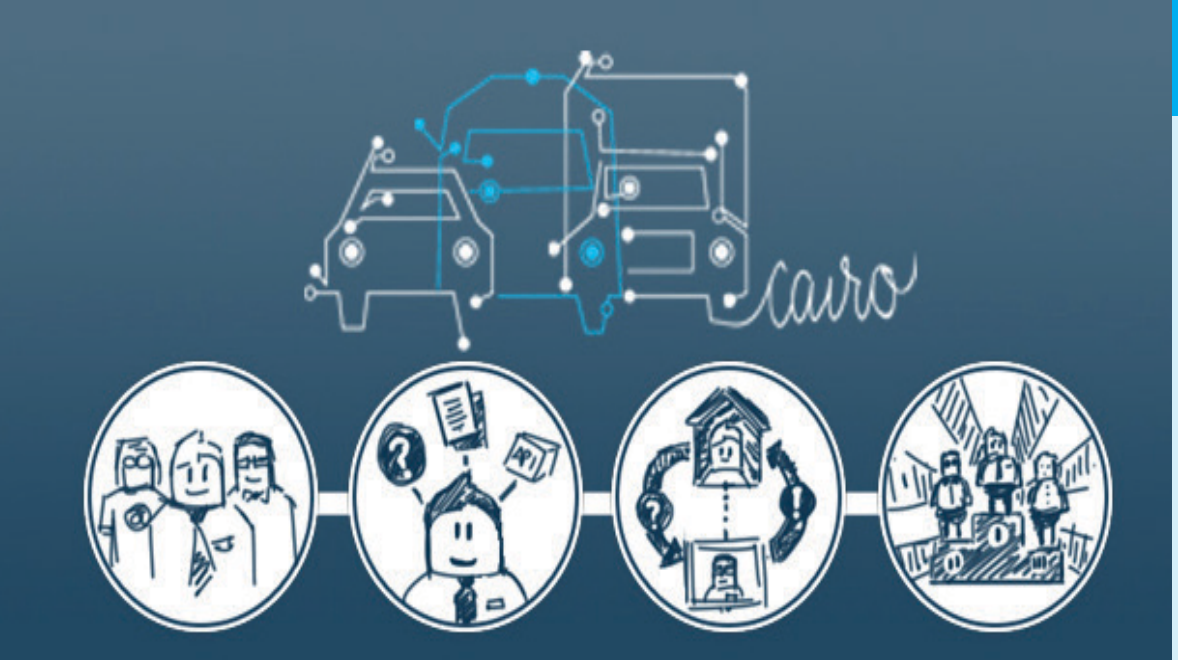
Balancing Act shows citizens their city's budget breakdown, and lets them interact with it and hypothesize a budget according to their priorities.

In this era of information, political spending and municipal budgets are still often shrouded in confusion and mystery. But a new web app called Balancing Act hopes to change that, by enabling US citizens to see the breakdown of their city's budget via adjustable, comprehensive pie charts.

Created by Colorado-based consultants Engaged Public, Balancing Act not only shows citizens the current budget breakdown, it also enables them to experiment with hypothetical future budgets, adjusting spending and taxes to suit their own priorities. The project aims to engage and inform citizens about the money that their mayors and governments assign on their behalf and allow them to have more of a say in the future of their city. The resource has already been utilized by Pedro Segarra, Mayor of Hartford, Connecticut, who asked his citizens for their input on how best to balance the USD 49 million.

The system can be used to help governments understand the wants and needs of their constituents, as well as enable citizens to see the bigger picture when it comes to tough or unappealing policies. Eventually it can even be used to create the world's first crowdsourced budget, giving the public the power to make their preferences heard in a clear, comprehensible way.

Could other interactive tools be used to help politicians survey the desires of citizens?



At a Glance

WHAT
The Egyptian government is calling on citizens to come up with a way to solve the capital's traffic problems through the Cairo Transport App Challenge.

WHO
cairo.hackathome.com

WHERE
Egypt

CONTACT
www.cairo.hackathome.com

In Cairo, crowdsourced app challenge seeks to ease traffic congestion

The Egyptian government is calling on citizens to come up with a way to solve the capital's traffic problems through the Cairo Transport App Challenge.

Crowdsourcing has already been used to good effect to help provide potential solutions to social issues, such as unemployment in ireland or helping businesses go green. Now, the Egyptian government is calling on citizens to come up with a way to solve the capital's traffic problems through its Cairo Transport App Challenge.

There are 17 million people living in Cairo and traffic is a problem that affects both residents and businesses, and is set to get worse over the next few years. According to the organizers, some 90 percent of Egyptians own a mobile phone and the aim of the new contest is to use these devices to enable a better flow of information about congestion. Backed by academic, government, NGO and private sector stakeholders, the challenge is calling on the tech community in the country to come up with solutions to alleviate traffic, pollution and accidents on the road. The specifications for apps are broad, but it is hoped that creators will tackle safety, help improve the unregulated microbus system, encourage car sharing and raise awareness of poor driving.

The project should encourage the creation of apps that otherwise may not have been made and aims to give backing to tech workers coming up with solutions that could made a big difference to quality of life in Cairo.

Could other countries tap the crowds in a similar way?

At a Glance

WHAT
WeCycle lets cyclists track their journeys, pooling their data to create heat maps for city planners.

WHO
TravelAI

WHERE
United Kingdom

CONTACT
www.travelai.info
www.travelai.info/contact.html

Journey tracking app will use cyclist data to make cities safer for bikes

WeCycle lets cyclists track their journeys, pooling their data to create heat maps for city planners.

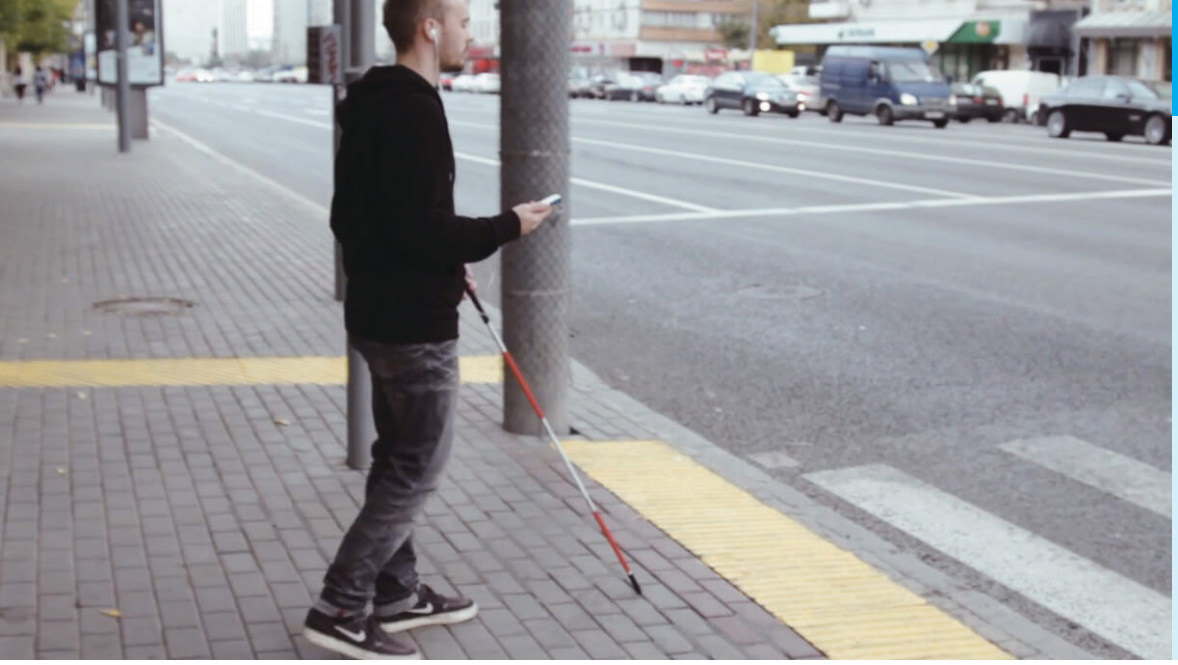
Most cities were never designed to cater for the huge numbers of bikes seen on their roads every day, and as the number of cyclists grows, so do the fatality statistics thanks to limited investment in safe cycle paths. While Berlin already crowdsources biker's favorite cycle routes and maps them through the Dynamic Connections platform, a new app called WeCycle lets cyclists track their journeys, pooling their data to create heat maps for city planners.

Created by the UK's TravelAI transport startup, WeCycle taps into the current consumer trend for quantifying every aspect of life, including journey times. By downloading the free iOS app, London cyclists can seamlessly create stats each time they get on their bike. They app runs in the background and uses the device's accelerometer to smartly distinguish walking or running from cycling. They can then see how far they've traveled, how fast they cycle and every route they've taken. Additionally, the app also tracks bus and car travel.

Anyone that downloads the app agrees that their data can be anonymously sent to TravelAI, creating an accurate and real-time information resource. It aims to create tools such as heat maps and behavior monitoring for cities and local authorities to learn more about how citizens are using roads to better inform their transport policies.

WeCycle follows in the footsteps of similar apps such as Germany's Radwende and the Toronto Cycling App — both released this year — in taking a popular trend and turning into data that could help make cities a safer place to cycle. However, organizations that go down this route will need to ensure user privacy if they're going to succeed in attracting useful user numbers.

Could this model be applied to other types of activity tracking?



At a Glance

WHAT
SeeLight is a crowdsourced app that offers audible information to help blind and visually impaired users cross urban roads.

WHO
SeeLight

WHERE
Russia

CONTACT
www.seelight.hungryboys.ru

Crowdsourced app helps the visually impaired cross the road

SeeLight is a crowdsourced app that offers audible information to help blind and visually impaired users cross urban roads.

Out of New York's 12,000 intersections, less than 100 offer navigation tools to help visually impaired residents cross safely. Audible sign technology is available but the process of installing it across cities is slow — most only have it at about 10 percent of crossings. Offering an alternative, SeeLight is a crowdsourced app that makes all the necessary information about urban crossings available to blind and visually impaired users.

The app collates data from government agencies and uses crowdsourced information to fill in the existing gap. Users can help by timing the length of any walk signal and recording the direction of the crossing using the app, which will then store that information along with a GPS tag. They can also add a brief description, noting whether the intersection has tactile paving or a pedestrian crossing light. When a visually impaired person approaches a crossing, they can then use the app to assist them through voice navigation.

SeeLight is not the first app to crowdsource accessibility data — we recently wrote about AXS Map, which collects user reviews about how accessible places around the world are for users in wheelchairs. SeeLight is currently crowdfunding on Indiegogo to finance improvements to the current app, which is available now for free.

What other data could be pooled in this way?

At a Glance

WHAT
MotoRepellent is a device that fits onto the back of motorbikes, which could repel mosquito populations from entire cities.

WHO
MotoRepellent

WHERE
Thailand

CONTACT
bbdoasia.com
www.facebook.com/BBDO-Bangkok

In Thailand, motorcycles are an unlikely mosquito repellent

MotoRepellent is a device that fits onto the back of motorbikes, which could repel mosquito populations from entire cities.

Mosquito-borne infections affect hundreds of thousands every year, from the outbreak of the Zica virus in Brazil to a surge in cases of Dengue fever in South East Asia. But now a device that can be fitted to the backs of mopeds could provide a new way to repel mosquitos from cities in Thailand.

MotoRepellent is a device that fits onto the back of motorbikes, which fill the Thai capital of Bangkok. The cylinder is filled with natural mosquito repellents that are activated by the exhaust pipe of the bike, spreading the insect repellent several meters around the vehicle.

With millions of motorbikes in the capital, the repellent device could crowdsource mass mosquito removal to reduce the impact of diseases in the city and further afield. The technology's developers claim to have helped repel mosquitos in slums across Bangkok and protected 80,000 people. The project is being promoted by advertising agency BBDO Bangkok and the charity Duang Prateep Foundation, which provides assistant to slums.

We have already seen street lamps used in Malaysia to trap and kill mosquitos. What other existing, city-wide infrastructure and objects can be adapted to have mosquito-repelling functions?

At a Glance

WHAT
Mobisol's Solar Air Distribution network will add drone recharging stations to the roofs of homes in rural Africa, creating a delivery infrastructure for its customers.

WHO
Mobisol

WHERE
Rwanda / Tanzania

CONTACT
www.plugintheworld.com/mobisol
communications@plugintheworld.com

Delivery drone network charged by home solar panels

Mobisol's Solar Air Distribution network will add drone recharging stations to the roofs of homes in rural Africa, creating a delivery infrastructure for its customers.

We have seen drones deployed with automated landing and charging pads, and mobile payment solar power in rural Africa. Now sitting somewhere inbetween the two is Mobisol, a company that offers solar energy alternatives to low income communities in developing countries.

Mobisol currently has customers in over 40,000 solar homes in rural Tanzania and Rwanda. The Berlin-based company uses a pay-to-purchase model for the solar panels, and customers can pay the monthly installments using mobile phones. As a part of their new Solar Air Distribution network, Mobisol is adding drone recharging pads to the roofs of its customers' homes, so that a network of delivery drones can travel longer distances by stopping off at the charging points. The drones can leapfrog from community to community, potentially delivering equipment to new locations to deploy more of Mobisol's solar energy service.

Mobisol hope the network will expand solar energy to the off-grid market, as well as grow the business into an air delivery network by 2017. What other energy infrastructure could potentially have dual functions too?

At a Glance

WHAT
In Sao Paulo, warning parking tickets can be printed and issued by any citizen and placed on cars wrongly parked in a disabled space.

WHO
Sao Paulo Government

WHERE
Brazil

CONTACT
www.saopaulo.sp.gov.br

In Brazil, any citizen can issue a disability awareness parking ticket

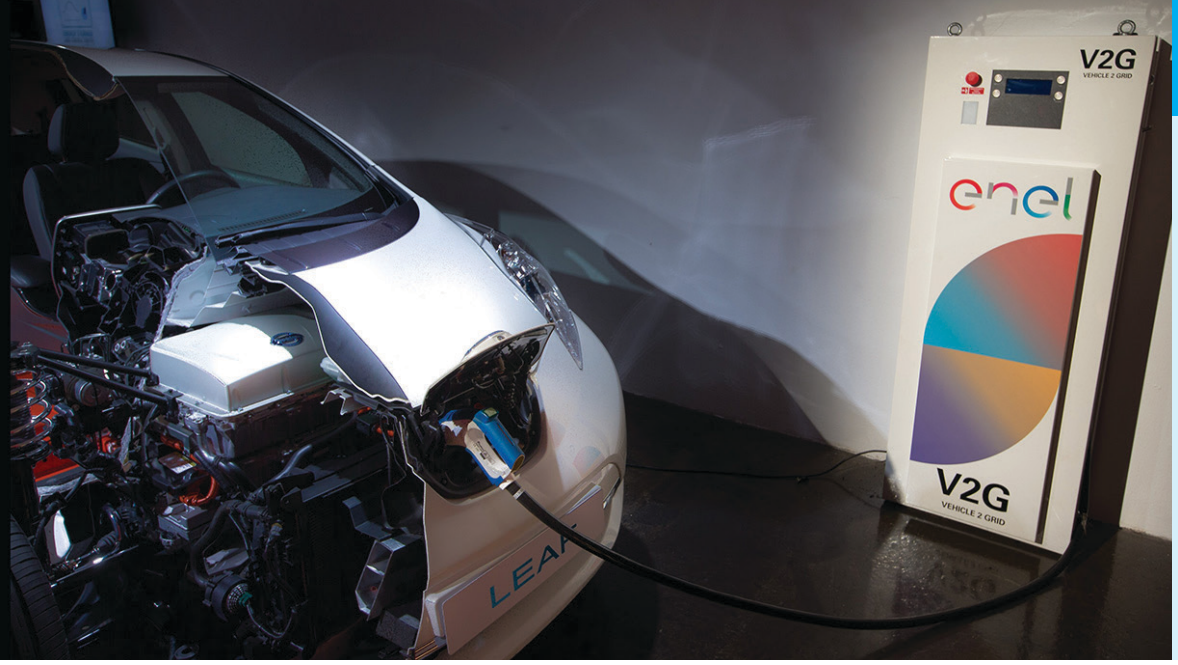
In Sao Paulo, warning parking tickets can be printed and issued by any citizen and placed on cars wrongly parked in a disabled space.

Most cities have dedicated parking spots for disabled citizens but they are only effective if others don't use them. Now, the Brazilian city of Sao Paulo has launched a campaign to remind people of the importance of disabled parking spots by introducing warning tickets designed to look like fines. The tickets can be printed and issued by anyone and placed on any car wrongly parked in a disabled space.

Parking attendants already have the authority to fine anyone found parked illegally on a disabled space, but this campaign enables all residents to lend a helping hand. Participants are encouraged to print off the tickets and place them on cars which they find wrongly parked in disabled bays. The tickets look like parking fines and feature text reminding the recipient of the importance of refraining from using the spaces.

There is no monetary fee associated with the ticket; instead they simply spread awareness of the issue, but by mimicking the design of a parking fine, the recipient is likely to take the warning more seriously.

Are there other responsibilities that could distributed among well-meaning citizens?



At a Glance

WHAT
Nissan and Enel launch UK vehicle-to-grid smart energy trial that enables electric cars to sell power back to the national grid.

WHO
Nissan and Enel

WHERE
United Kingdom

CONTACT
www.nissan.co.uk
david.jackson@nissan.co.uk

Electric cars helping to power the nation

Nissan and Enel launch UK vehicle-to-grid smart energy trial that enables electric cars to sell power back to the national grid.

After charging their vehicle during periods of low demand, owners of Nissan UK electric cars now have the option of selling energy back to the national grid when costs are higher. The energy stored in the car's battery pack could also be used in the home or at work during periods of higher demand and cost.

The UK trial is starting with 100 vehicle-to-grid (V2G) charging units installed at locations agreed by the owners. Designed by smart energy technology company Enel, both individuals and businesses are using the charging units. The financial incentive for charging electric vehicles during periods of low demand combines less cost for owners with the opportunity to earn money back.

The Nissan-Enel partnership was agreed last year at the December 2015 UN climate change conference in France. Nissan says that if all the vehicles in the UK were electric and used the V2G technology, the energy generated would be enough to power the UK, Germany and France.

Mobile energy hubs are essential for coping with natural disasters and are increasingly being used to get off-grid communities connected.

How else can mobile energy hubs be used to facilitate sustainable energy sharing?

At a Glance

WHAT
Amager Bakke — the world's cleanest power plant — will have a ski slope and generator atop its smokestack, which releases a steam ring for every ton of CO2 emitted.

WHO
BIG

WHERE
Denmark

CONTACT
www.big.dk
big@big.dk

Waste-to-energy power station has a public ski slope and art installation

Amager Bakke — the world's cleanest power plant — will have a ski slope and generator atop its smokestack, which releases a steam ring for every ton of CO2 emitted.

The Amager Bakke waste-to-energy power station in Copenhagen is set to be the 'world's cleanest power plant.' But, despite impressive efficiency — 25 percent greater energy output than the previous plant — and huge improvements to environmental performance, the facility will still produce 107,000 tons of CO2 emissions per year. Rather than shying away from the fact, BIG-Bjarke Ingels Group — the architects behind the project — have commissioned an art piece atop the smokestack to raise awareness of the emissions, in the form of a steam ring generator that produces the circular symbol every time a ton of CO2 is emitted by the plant.

The steam chimney installation is a collaboration between artists realities:united, the Danish Technical University and Peter Madsen's Rumblatorium. The power plant, which is expected to be finished in 2017, is complete with a ski-slope roof structure — another feature that will make the building a positive part of Copenhagen's landscape, instead of a source of shame to be hidden away, as power plants have become in light of climate change and diminishing traditional energy resource.

How else could public facilities and art be used to transform eyesores into engaging architecture?

At a Glance

WHAT
Godspots are secure, free wifi connections available inside and outside churches in the Berlin-Brandenburg region.

WHO
Godspots

WHERE
Germany

CONTACT
www.godspot.de
info@godspot.de

Germany's connected churches offer free wifi

Godspots are secure, free wifi connections available inside and outside churches in the Berlin-Brandenburg region.

Dubbed Godspots, the free wifi is available to anyone, inside and outside the churches. Initially available in 220 churches, the Protestant church plans to expand the network to all 3,000 of its buildings in the Berlin-Brandenburg region.

Germany has lagged behind other European countries in connectivity, something that Church leaders are hoping the Godspots will help change. The Church says the network is secure and will not have advertising. When first accessing a Godspot, users are greeted by a homepage of the church with local faith community information, details about the building itself and other faith-related material. If the goal of connecting all 3,000 Protestant churches is reached by May 2017, the project may be expanded nation-wide, including to Catholic churches.

Two of the first to offer the wifi are Berlin's French Cathedral and Kaiser Wilhelm Memorial Church. As making internet connection easier becomes a worldwide project, everything from smart trashcans to sidewalk pavement stones can be used as wifi hotspots. Could the next disruption be in finding ways and places to disconnect?

At a Glance

WHAT
The clean energy Lausward Power Plant in Dusseldorf is also a tourist attraction with an epic view.

WHO
Lausward Power Plant

WHERE
Germany

CONTACT
www.kadawittfeldarchitektur.de
office@kwa.ac

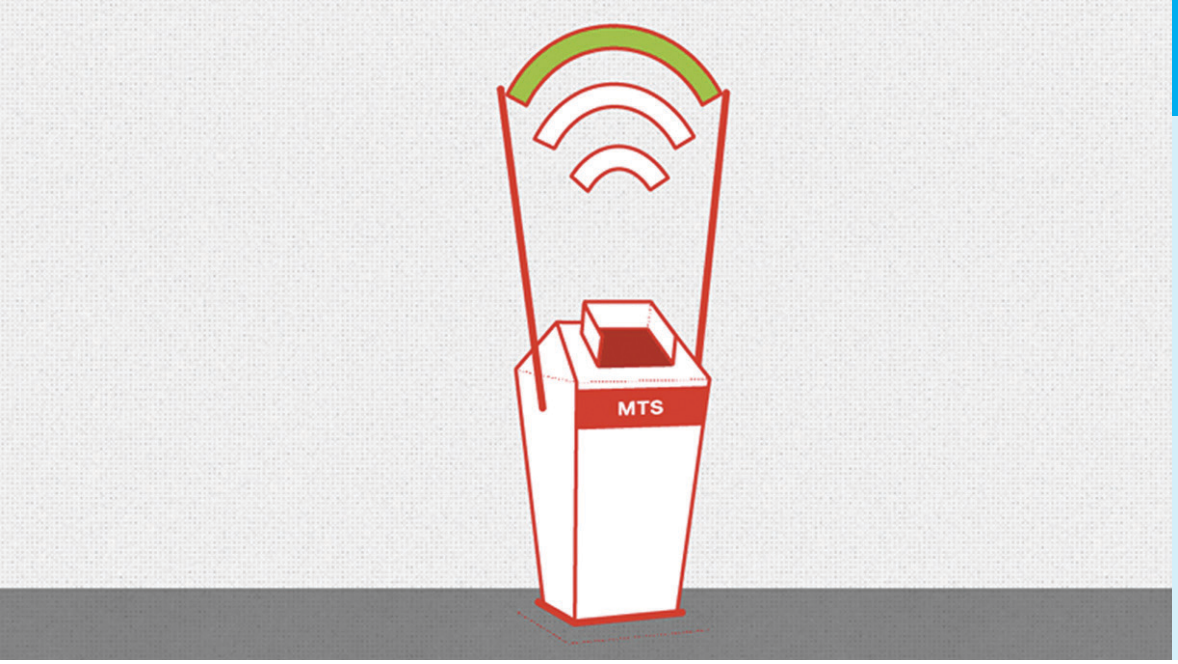
Power plant doubles as an observation tower

The clean energy Lausward Power Plant in Dusseldorf is also a tourist attraction with an epic view.

Even clean energy power plants can be detrimental to the local area because they are so often visually imposing. But recently we're seeing architects adding value to the structures, by integrating features for use by local people. A Copenhagen power station was designed to include an art piece and ski-slope, and now the Lausward Power Plant in Dusseldorf doubles as a tourist attraction by housing an observation tower.

Lausward Power Plant is a clean energy power station, designed by German architecture firm Kadawittfeldarchitektur. Visitors can reach the building's highest point — called the City Window — via a lift. Then, they can view the entire city from 45 meters off the ground through a glass facade.

How else could imposing structures be adapted to provide additional value for locals and tourists?



At a Glance

WHAT
ThinkScream have created a smart trashcan, which provides 15 minutes of connectivity to people who throw away rubbish.

WHO
ThinkScream

WHERE
India

CONTACT
www.thinkscream.com
contact@thinkscream.com

Feed this trashcan for free wifi

ThinkScream have created a smart trashcan, which provides 15 minutes of connectivity to people who throw away rubbish.

We have already seen free wifi used to lure people out of the sun in Peru, and now Indian startup ThinkScream have created a smart trashcan, which provides 15 minutes of connectivity in exchange for throwing away rubbish.

The plastic bins have LED screens, which light up with the wifi symbol when rubbish is thrown into it. The bin then provides wireless internet for 15 minutes within a 50 yard radius. They have already been used at a music festival and could potentially be used in Mumbai, India's most populous city with 18 million residents, in an attempt to curtail the habit of disposing rubbish in public places.

Each bin costs about USD 1500 and ThinkScream have been contacted by various companies who are interested in using the branding potential of the devices.

What other amenities could be offered in a bid to encourage rubbish disposal?

At a Glance

WHAT
The Food For Fines scheme enables Lexington residents to trade cans of food for a reduction on their unpaid parking ticket fine.

WHO
Lexington Parking Authority

WHERE
United States

CONTACT
www.godspantry.org
info@godspantry.org

Tinned food donations reduce parking fines

The Food For Fines scheme enables Lexington residents to trade cans of food for a reduction on their unpaid parking ticket fine.

In 2014, 14 percent of US households had unstable food resources, so it is no wonder that we have seen a number of initiatives that help distribute food among the hungry. In Minneapolis, for example, the police department are distributing healthy food boxes with nutrition advice during their patrol. Now, the Lexington Parking Authority has launched the Food For Fines scheme, during which residents can trade cans of food for a reduction on their unpaid parking ticket fine.

The drive is being run in collaboration with local food bank God's Pantry.

To participate, anyone who has an outstanding or past parking citation from LEXPARK or the Lexington Police Department, can receive a USD 15 reduction in exchange for 10 cans of food.

Could this initiative work in other cities?

At a Glance

WHAT
Researchers from Australia's RMIT University have found a solution to cigarette butt pollution, which puts the waste to use and saves energy.

WHO
RMIT University

WHERE
Australia

CONTACT
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Cigarette butts baked into sustainable bricks

Researchers from Australia's RMIT University have found a solution to cigarette butt pollution, which puts the waste to use and saves energy.

Using waste materials in construction is becoming increasingly common, from carbon negative bricks to modular roof panels made of recycled packaging and agricultural waste. The main problem seems to be large-scale viability as most of the ideas we've seen are in development, prototype or fundraising stages. Research recently published by a team from Australia's RMIT University's School of Civil, Environmental and Chemical Engineering could provide a sustainable solution to the annual million-ton problem of cigarette butt pollution.

Cigarette butts biodegrade very slowly, and in the process, they release a variety of toxic chemicals. When incorporated into clay mixed for bricks, however, those same properties become useful. The toxins in cigarettes burn at very high temperatures during the firing process, reducing the energy needed in production by up to 58 percent. Bricks that contain a percentage of cigarette butts are also lighter weight and provide better insulation. The entire worldwide annual production of cigarettes could be offset if less than three percent of all bricks are made using the waste mix.

What other major city waste can be repurposed?

At a Glance

WHAT
Lafarge Tarmac's permeable concrete reduces flooding risks while benefiting the environment.

WHO
LaFarge Tarmac

WHERE
United Kingdom

CONTACT
www.tarmac.com
enquiries@tarmac.com

Porous concrete helps prevent flooding

Lafarge Tarmac's permeable concrete reduces flooding risks while benefiting the environment.

Concrete can be a burden during heavy rainfall. Runoff from the normally impervious material puts pressure on drainage systems, leading to flooding and ice hazards as well as environmental concerns. UK-based Lafarge Tarmac has developed a porous concrete that aims to solve these issues.

Concrete runoff is a major source of localized flooding in urban areas, and pooling water in low temperatures increases the risk of ice patches. Topmix Permeable, however, allows rain water to drain straight through to the underlying water table, easing the burden on existing water drainage systems. This is due to an increased amount of void space in the material — up to 35 percent more than standard concrete, which allows up to 1000ml of water to run through a square meter per minute. The porous concrete also has environmental benefits — the material filters out pollutants that normally runoff into water systems and delivers more water into soil layers, preventing drying out of natural areas. Whilst unsuitable for heavy traffic areas, Topmix Permeable has already provided effective drainage surfaces for pedestrian access areas such as carparks. Other areas of potential utilization include cycle paths, sports pitch borders and paving around new housing developments. If large scale adoption occurs, porous concrete may even be a source of city cooling, as evaporation from stored underground water lowers surrounding temperatures.

As urban growth leads to increased surface impermeability, adopting porous concrete can help reduce flooding risks and even help maintain the natural environment around cities.

In what other ways could porous materials be used?

At a Glance

WHAT
Gensler Tower at PNC Plaza uses a passive ventilation system to control temperature, providing offices with fresh air and significantly reducing energy usage.

WHO
Gensler

WHERE
United States

CONTACT
www.gensler.com
info@gensler.com

Breathable facade cools eco-friendly office towers

Gensler Tower at PNC Plaza uses a passive ventilation system to control temperature, providing offices with fresh air and significantly reducing energy usage.

We are seeing more examples of architecture that marry sustainability with design, such as these solar energy generating stain glass windows. US-based Gensler have created a passive ventilation system, which 'breathes' to regulate building temperature.

The facade of the Tower at PNC Plaza, Pittsburgh OH, works by having a ‘double skin’ where two panes of glass are separated, creating a cavity that fresh air can flow into. When sensors determine weather condition and temperature to be optimum, they open up, cooling the building with fresh air. A solar chimney works in tandem to create a ventilation system — it pulls stale air through open windows as it warms and rises. Most buildings require air-con on hot days, recycling stale air or actively pumping it outside. Gensler’s system requires zero net energy under these conditions — the natural ventilation system is independently activated by solar, which is predicted to work 42 percent of the year. Combined with other eco-friendly features such as large amounts of natural light and rain-capture recycling, this building can reduce energy consumption by 50 percent.

At comparable building costs, Gensler's ventilation system will massively reduce energy consumption, especially in sunny climates.

Could this work in high-rise apartments too?

At a Glance

WHAT
The 'floating' Cloud Observatory, built on urban rooftops, uses evaporation to cool buildings.

WHO
Nina Gonzalez Vives

WHERE
Spain

CONTACT
www.gonzalezvives.es

Floating structures naturally cool urban spaces

The 'floating' Cloud Observatory, built on urban rooftops, uses evaporation to cool buildings.

Buildings in warmer urban centers require costly and energy-consuming air conditioning to keep them cool — we recently saw an office tower designed to use natural air currents to regulate temperatures sustainably. Taking also from biomimicry, Spanish architect Nina Gonzalez Vives wants to use the evaporation hot buildings produce to keep them cool without relying on air conditioning.

The Clouds Observatory has been installed at a test roof-space in Madrid. Constructed of 'floating' plastic structures, it sees low hanging cloud-like urban rooftops — the aim is to create a cooling system that can be easily fitted as an alternative to reflective surfaces or urban garden systems, encouraging appreciation of city landscapes. As well as providing shade from the sun, the Clouds Observatory will capture the dense water vapor that rises up from the hot buildings beneath them, and the evaporation from the collected water will cool areas beyond its structure.

The need to cool urban centers is generating a lot of innovative design — see also the use of porous concrete to produce a similar effect.

How else could design take from nature to keep cities cool?

Experiments Inside Government

To be innovative, governments must resist the urge to simply emulate tried and tested initiatives from other countries around the world. True innovation can only occur when employees are given license to have original creative ideas.

What is too often forgotten in discussion surrounding innovation is that every innovative project or business — from low-tech local initiatives to large scale multi-million dollar installations — all started as an idea from an employee. Building a government that can deliver original, world-leading innovation requires an office environment that will support this creativity and nurture new ideas.

Below are Springwise-featured innovations designed to foster a culture of innovation within an organisation. Small details can have a huge impact on how an employee feels at work, which in turn will impact their creative thinking.

Consider, for example, a recent study by scientist Mirjam Muench. She experimented with 25 young subjects, who spent one afternoon under electric light and one under daylight. As imagined, they preferred the aesthetic of daylight, but their state of alertness and mood also improved significantly in these conditions. The study revealed that the different lights that enter our eyes actually have an effect on the chemistry in our bodies. In this context, the lighting in an office, and innovations such as the CoeLux window, are important considerations. Equally, innovations that enable workers to spend less time with screens and devices, such as SMART Kapp and Mod Notebooks, will help users step away from digital distractions, which is proven to heighten cognitive function.

In isolation, installing any of the ideas below will have limited effect. Creating a culture of innovation is a process of marginal gains, and a clearly defined strategy, with support from the top down, will be necessary to ensure cohesion and results.

At a Glance

WHAT
Humanyze is a smart employee badge that uses wearable sensors and data to help businesses improve the productivity of their staff.

WHO
Humanyze

WHERE
United States

CONTACT
www.humanyze.com
info@humanyze.com

Smart employee badge helps businesses improve staff efficiency

Humanyze is a smart employee badge that uses wearable sensors and data to help businesses improve the productivity of their staff.

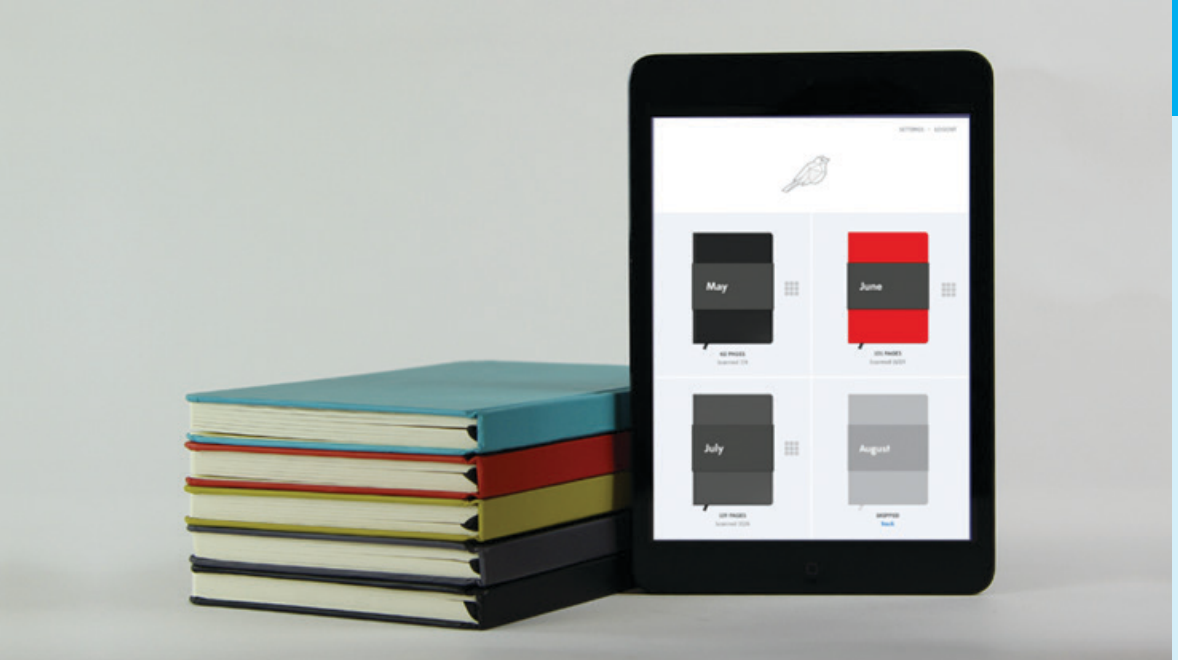
Humanyze is a tracking tool in the form a smart employee badge which combines a microphone, accelerometer and other sensors. It collects massive amounts of behavioral data from employees, which businesses can use to analyze and improve the productivity of their workforce.

Each badge is worn by an individual employee and collects over 40 pieces of data daily — including how much they moved around, the tone of their voice and if they leaned in when speaking to co-workers. This data is uploaded to the cloud, where it can be fed into other business metrics via a dashboard, enabling companies to gain insight into how behaviors affect overall company performance. The company can then begin to make adjustments to its employee relations and see how effective their changes are through A/B testing.

The startup behind the big data wearable — Humanyze — was launched from the MIT Media Lab. They have already begun a partnership with Bank of America, testing out the system on some of their 10,000 employees, with interesting results. For example, having noticed that employees interact most with each other during the overlap of their lunch breaks, the company experimented with giving one group of employees group lunch while keeping another on the staggered schedule. They were able to ascertain that group lunch had an overwhelmingly positive effect on the employee's performance: it reduced stress — which is measured by tone of voice — by 19 percent and it significantly increased staff efficiency — call completion time rose by 23 percent.

All data is privacy protected and participating companies are not able to access individual's data. Furthermore, Humanyze insist on an opt-in agreement, meaning businesses cannot use the system without their staff signing up.

What other businesses could make use of big data in this way?



At a Glance

WHAT
Mod Notebooks allow writers to store their handwritten notes and doodles and access them at any time on their mobile device.

WHO
Mod Notebooks

WHERE
United States

CONTACT
www.modnotebooks.com
orders@modnotebooks.com

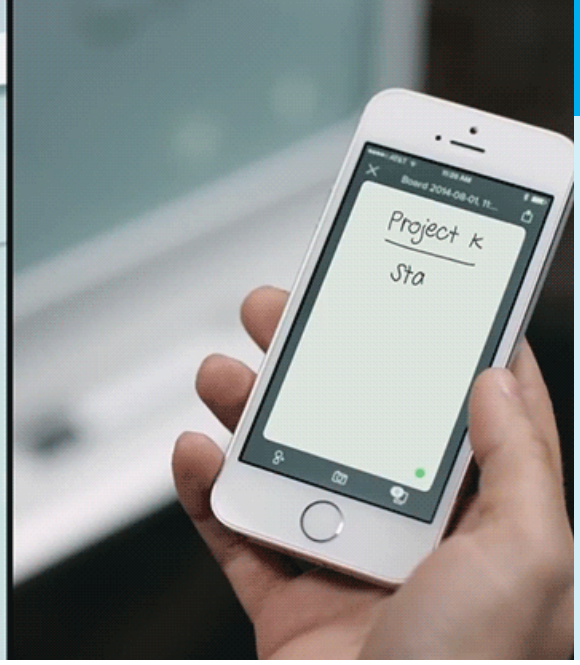
This paper notebook syncs to the cloud

Mod Notebooks allow writers to store their handwritten notes and doodles and access them at any time on their mobile device.

Digital media offers a number of advantages over print and physical information, from easy copying and sharing to more complex archiving and searching capabilities. We've already seen Outbox enable consumers to digitize and organize their physical mail online, and Mod Notebooks now allow writers to store their handwritten notes and doodles and access them at any time on their mobile device.

Mod Notebooks come in three different styles — plain, ruled and dot grid — and each notebook is hardbound and offers thick 120 GSM paper. Matching the size of an iPad Mini, the notebooks also feature a pre-paid envelope slipped into the back cover, which is used to send the book back to Mod to be digitized once it's filled. The contents are then scanned and uploaded to the cloud within 5 days and customers can either have the notepad recycled or returned. Using the companion app, customers can then access their writings on their smartphone or tablet and organize the files as they wish. The app syncs with Dropbox, Evernote and OneNote.

Are there other ways that consumers or businesses could more seamlessly and automatically upload their physical notes to the web?



At a Glance

WHAT
SMART kapp has reimagined the whiteboard as a smart device that automatically syncs meeting notes to colleagues' mobile devices.

WHO
SMART kapp

WHERE
United States

CONTACT
www.smartkapp.com
www.twitter.com/smartcollab

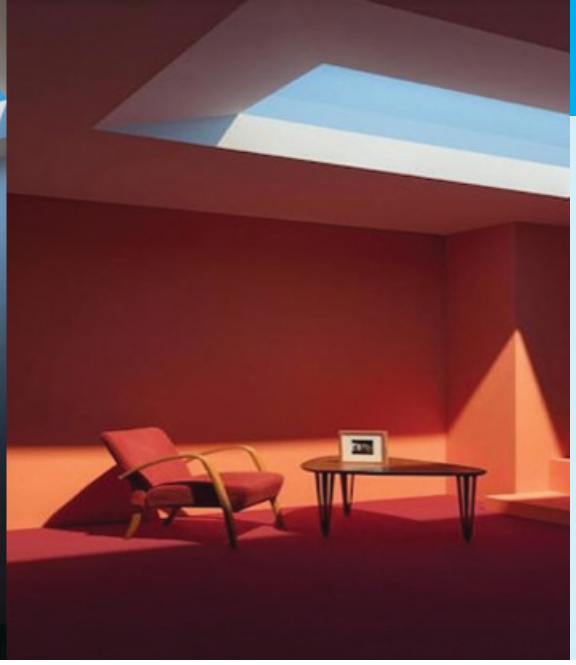
Smart whiteboard syncs meeting notes to any device in real time

SMART kapp has reimagined the whiteboard as a smart device that automatically syncs meeting notes to colleagues' mobile devices.

Office presentations have become a lot more complicated. What used to be a few people round a table with a whiteboard on the wall now needs to incorporate digital data and multimedia presentations, as well as patch in remote workers. We recently wrote about Blrt, an app that lets teams share documents with real-time drawing and voice commenting. Now SMART kapp has reimagined the whiteboard as a smart device that automatically syncs meeting notes to colleagues' mobile devices.

SMART kapp is essentially a whiteboard that can be used with any standard dry erase marker, with a few digital extras. Anyone in the room can connect their mobile device to the board to use the SMART kapp app. From there, they can stream any notes made on the board in real time to their own device or to someone else's in a remote location. At the end of the session, a copy of the notes is recorded as a JPG or PDF so that it can be sent to other relevant colleagues or clients. Users can also choose to record the session, which captures all of the notes made to be played back at a later date.

Are there other pieces of office equipment that could be given a digital makeover?



At a Glance

WHAT
CoeLux enables anyone to experience tropical, Mediterranean or Nordic sunlight in their own home using false windows with nanoparticle technology.

WHO
CoeLux

WHERE
Italy

CONTACT
www.coelux.com
www.coelux.com/en/contact-us

Fake window reproduces sunlight from around the world

CoeLux enables anyone to experience tropical, Mediterranean or Nordic sunlight in their own home using false windows with nanoparticle technology.

Ensuring we take advantage of the effects of sunlight is an important part of wellbeing. We recently wrote about Drift, the smart lightbulb that emulates the rhythms of the sun to send users more easily off to sleep, and now CoeLux is enabling anyone to experience tropical, Mediterranean or Nordic sunlight in their own home using false windows with nanoparticle technology.

According to its Italy-based creators, CoeLux uses complex optics to mimic the way the sun refracts through standard glass in particular situations. Using a full-spectrum LED lighting system that can emulate sunlight, CoeLux installations place a light source behind a special blue-tinted pane that recreates the Rayleigh scattering that occurs when light travels through the Earth's atmosphere. On top of this, the light is also refracted at an angle to complete the impression that it's coming from outside, rather than the ceiling. CoeLux comes in three options: CoeLux60 offers a tight 60 degree angle often found in hot locations near the equator, CoeLux45 reflects the 45-degree balanced sunlight from the Mediterranean, and CoeLux30 provides a softer, warm light common in Scandinavia.

The system has obvious benefits in the home, enabling residents in any location to enjoy therapeutic sunlight at any time. However, it could also bring daylight to underground locations such as subways, or offer specific mood lighting for museums and exhibitions.

Are there other ways to ensure we get enough sunlight — artificial or otherwise?

At a Glance

WHAT
Step Ahead: Zombies is a story-themed walking challenge that encourages workers to escape an in-game zombie invasion through IRL activity.

WHO
FIX

WHERE
United States

CONTACT
www.astepaheadchallenge.com/a-step-ahead-zombies
www.astepaheadchallenge.com/get-started

Zombie game gets employees doing their 10,000 steps

Step Ahead: Zombies is a story-themed walking challenge that encourages workers to escape an in-game zombie invasion through IRL activity.

We have seen a number of corporate wellness programs that aim to create a healthier workforce, which will in turn save employers money on health insurance payouts. EatRight Rewards offers employees cash returns when they purchase healthy foods and FwdHealth enables companies to track their workers' exercise regimes in order to lower their premiums.

But these initiatives only work if employees actually participate and, as the rise of gamified exercise proves, one of the best ways to get reluctant adopters onboard is to disguise their task within a game. Step Ahead: Zombies does exactly this — the latest fitness game from wellness platform FIX is a story-themed walking challenge that encourages workers to escape an in-game zombie invasion through IRL activity.

Employers can sign their company up to participate and players can take part using a variety of devices, including smartphone, tablet and desktop. The game splits the workforce into teams who must race to get to a safe house. The teams progress through the game in accordance with their average step count, so if a lazy player is letting their co-workers down they're likely to feel their wrath. If the team fails to reach the safe house, they get eaten and join the zombie team. Players can use wearables to input their participation and even log a healthy diet which will make them more resistant to zombie contact.

FIX have seen impressive results already, one firm saw employee engagement rise by 20 percent. The company are currently working on other versions of the game including an alien-themed edition.

How else could employers use gamified exercise to stimulate their workers?

Questions?
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