



# The Future of Data Innovation

2018

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# Innovation Report 2018

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## Introduction

The nineteenth-century poet and folklorist Andrew Lang is often credited with the quote: *“I shall try not to use statistics as a drunken man uses lamp-posts, for support rather than for illumination.”*

Today, many businesses could perhaps be accused of using data in the same way – to support decisions once they are made, rather than to drive actions and innovations.

In this report compiled by the Springwise editorial team, we will be exploring a number of businesses that are turning that on its head by breaking new ground in the use of data for solutions and innovation. We will also look at data in the context of GDPR compliance and the opportunity it might represent for better customer engagement and product innovation.

### About Springwise

Since 2002 Springwise has been looking through the lens of disruption. Via our network of global innovators, outliers and entrepreneurs, we champion positive change and create context for the smartest CEOs and innovation leaders worldwide to drive sustainable product and business transformation. With a daily overview of some of the most cutting-edge innovations from around the world, the Springwise platform provides access to some of the most cutting-edge innovations across different industries and technologies.

### Purpose

At Springwise, we are always on the lookout for real innovation examples that can inspire businesses worldwide to adopt new models for innovation and growth. Our cross-sector innovation scouting is designed to encourage lateral thinking by drawing analogies and transferring approaches between contexts and beyonds borders. This report aims to help you to continue shed outdated ways of thinking and re-imagine your interaction with data to harness its full potential.

### Content

This report has two main parts:

- Six chapters providing some context around the intelligent use of data, examples of innovative technology solutions across different industries and geographies, and a brief overview of challenges and opportunities in a post-GDPR world.
- Ten innovations from across the world that fit within various themes including prediction, data analysis and security.

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## Collecting data with purpose

Understanding the best ways to use data is more important than ever. Thanks to continuous new technology, the data that businesses and organizations have access to is not only more varied, but also available more quickly than at any other time. But just having access to data does not mean that it will necessarily be used wisely. A business may be sitting on a huge pile of data, but it is useless if it cannot be translated into insights to drive growth and innovation. Big data is not only about having unlimited amounts of information, it is about knowing the right questions to ask.

Today there are also new pressures being brought to bear on the uses of big data. As people become more aware of how their personal data can be misused, they have become more reluctant to share it without any restrictions. On May 25th 2018, the EU General Data Protection Regulation (GDPR) also came into force bringing more challenges for businesses of all sizes. This law is designed to harmonize data privacy laws across Europe, to protect the data privacy rights of all EU citizens and to reshape the way organizations across the region approach data privacy. The GDPR enshrines into law a variety of new conditions applying to the gathering and use of data, including strengthening conditions for consent to the use of data; ensuring that anyone can access their data free of charge; the 'right to be forgotten'; and requirements for companies to design data protection into their systems from the beginning (privacy-by-design), rather than as a later add-on. Organisations who do not comply with the new laws can face heavy fines.

With the GDPR enforcement, businesses had little choice but to take control of their data use. Rather than seeing this as a tiresome obligation, some businesses viewed this as the perfect opportunity to gain a deeper understanding of the ways they can use data to deliver relevant and engaging experiences for their customers.

The companies and organisations that we highlight in this report have all developed ways of using data to drive growth and innovation, whether to make predictions, develop smarter retail strategies, for health and research or to provide security.

### *Data Overload*

*In 2016 just 29% of businesses gained insight from raw data*

Source: Forrester

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## Using data to make predictions

With the availability of large data sets and deep learning algorithms, it is now possible to use data to make predictions in areas as varied as criminology and sales. Every time Netflix suggests a show you might like or Amazon shows you an ad for a product, a data prediction algorithm has been at work. This type of prediction has become so common that most people don't even notice them anymore. But data analysts are also working on predicting more important areas than the next show someone will binge watch.

For example, in Arizona, one university is [tracking the ID card swipes](#) of freshman students to try and predict which students are most at risk of dropping out. The cards, which are used at more than 700 locations on campus, can show whether students have a very small social circle and lack routine – factors that can suggest a high risk of dropping out. These students can then be flagged up to advisors and other staff, who may offer additional support.

Data prediction algorithms can also aid in some surprising industries. Some large law firms are using predictive technology to vet commercial lawsuits, in order to take up those cases which have the best chances of success. Similarly, French start-up **Predictice** uses machine learning to extract a statistical analysis of prior litigation (page 13). The company's software can predict the likely course, cost, length and outcome of litigation based on historical data. Using the information can allow firms to know in advance the most likely outcomes of a case and adjust their strategy and terms of compensation accordingly.

Deciding which customers are likely to want a product, and the best way to target those customers with advertising is another area where data is allowing increasingly accurate predictions. This is becoming a key component of programmatic advertising, where software allows ads to be bought and sold in real time. Here at Springwise, we have covered several companies that have used predictive data in advertising analytics. One, London-based **Programmai**, has developed an AI tool to create predictive advertising campaigns (page 14). Their software uses recommendation engine technology, and data collected through transactional records and loyalty programs, to predict the future lifetime value of a business's customers, and allows them to target ads based on these predictions. By making predictions about which customers are most likely to buy, companies can target customers, and their advertising money, more precisely.

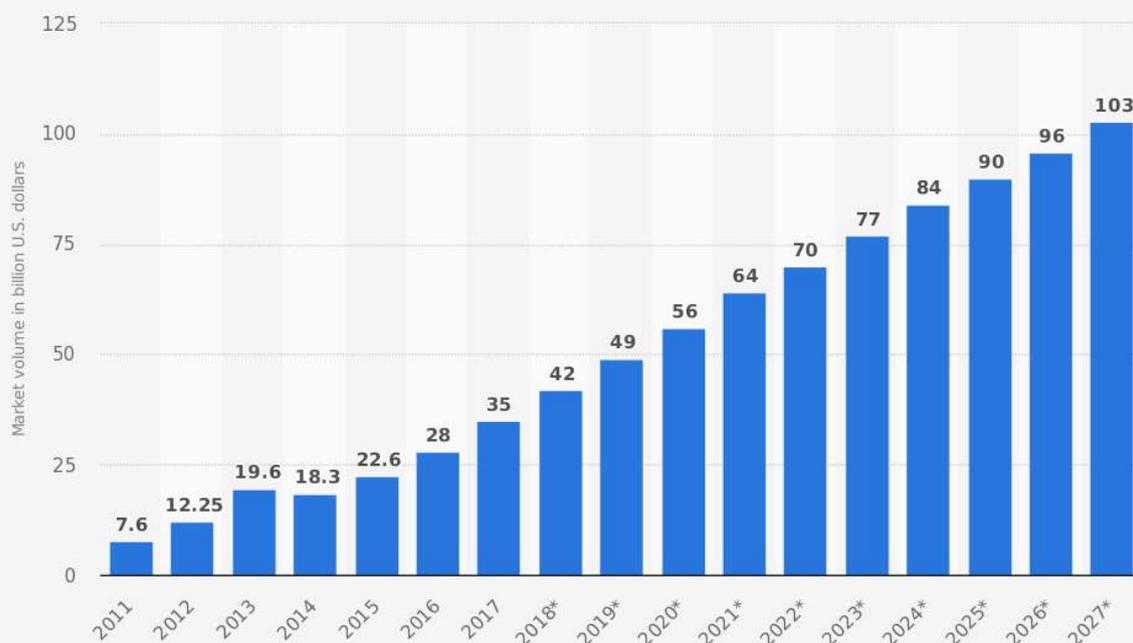
### *Data Monetization*

*will become a major source of revenues, as the world will create 180 zettabytes of data (or 180 trillion gigabytes) in 2025, up from less than 10 zettabytes in 2015*

Source: IDC

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**Big data market size revenue forecast worldwide from 2011 to 2027 (in billion U.S. dollars)**



**Sources**

Wikibon; SiliconANGLE  
© Statista 2018

**Additional Information:**

Worldwide; Wikibon; 2014 to 2018

statista

Predictive algorithms can also help retailers with the practicalities of determining exactly when to start lowering prices on each product – known as “mark down optimization”. For groceries, this price optimization can be a key to profitability. Products close to their expiration date are often marked off to sell quickly, but re-labelling products is time consuming and cannot be done fast enough to change prices multiple times on a single item. **RapidMathematix** approaches this problem by using deep learning algorithms and machine vision to change prices depending on freshness, market conditions and competition (page 15). The system collects data from multiple sources and re-prices products to ensure the most rapid turnover. This not only saves money, but also prevents food waste by ensuring that products can be sold before they expire.

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## Using data to create smarter retail

In addition to advertising, big data analytics is now being applied at every stage of the retail process. Data analysis can even help attract customers to bricks and mortar stores. Department store giant Macy's used data analytics to discover that very few millennials shopped in their stores. In response, Macy's redesigned its flagship New York store to include "selfie walls" and while-you-wait customized 3D-printed smartphone cases, hoping to attract more millennial customers.

Startup **DeepMagic** also uses digital innovations to enhance the physical retail experience (page 16). DeepMagic uses deep learning and computer vision to create fully automated physical stores. The pop-up stores can be placed in high-traffic areas such as hotel lobbies and apartment buildings. Once customers sign up on the mobile app, they can shop any time, and are automatically charged. In the future, such automated retail opportunities may become a common way to shop for everyday items and luxuries alike.

Another approach to customising retail is taken by **Genetec Inc's** Retail Sense system (page 17). This system uses existing security systems to analyse conditions in-store, in order to track and improve customer experience. For example, the system uses heat mapping and traffic flow analysis to determine when customers have been waiting too long to pay and alerts staff to the need to open a new register. The system also helps retailers to place displays in the most highly-trafficked areas of the store, and can increase conversions by notifying managers of which departments are more crowded, so they can direct sales assistants to those areas.

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## Data analysis in healthcare and business

While many companies focus on providing Big Data software as a service (SaaS) to retailers and other businesses, there are a host of other uses for Big Data, including philanthropy. Mastercard has launched one such data philanthropy program. The program offers 'data grants' that allow Mastercard's proprietary information to be used for furthering research and programs advancing social good. Some of the initial projects included using sales data from small shops in Kenya to create a proxy for credit scores that the shop owners can show to a local bank, instead of having to rely on informal lenders; and a study on how high crime rates in Baltimore and Oakland impact local small businesses and job opportunities.

Healthcare is another area in which Big Data holds the promise of being used for the public good, such as aligning medical research with clinical needs. The vast amounts of data collected from health care institutions and wearable devices such as Fitbit and Jawbone could someday be analysed to spot health problems before they occur. One such program, by the Pittsburgh Health Data Alliance, is already beginning. The Alliance aims to use data collected from various sources, including medical and insurance records, wearable sensors, genetic data and even social media, to develop holistic health care tailored to the individual. Other programs could use data to create models that will allow health professionals to assess the likely result of a particular treatment or develop new treatments.

Crowdsourcing is also being used to collect data for research. There are an estimated one million patients in the U.S. alone with undiagnosed atrial fibrillation, which can cause stroke. To better predict when someone may have atrial fibrillation, UK, US and Dutch health care and technology groups have launched an app, called **Heart for Heart**, which is designed to monitor heart health (page 18). The app collects data on users' heart rhythm using the camera on the users' phone. It is based on technology that measures light reflected in the blood. The data is then combined with lifestyle information supplied by users. The anonymized data is provided to researchers for use in better understanding who is most at risk for heart disease. Other organizations, such as the UK's Future Care Capital, are proposing to establish health and care data cooperatives which would allow the public to donate their health data. This data could then be used for the public good, such as aligning medical research with clinical needs.

Similarly, in France, the **Trusted Analytics Platform** was established by four of Paris' public hospitals (page 19). The platform uses deep learning to analyse hospital admission data, weather and illness patterns in order to try and reduce hospital waiting times. The system uses open source time series analysis to forecast hospital admission rates up to two weeks in advance – allowing hospitals to schedule staff and procedures for when they are needed most.

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Crowdsourcing is also used by online platform **Kaggle**, which helps companies set up competitions to find the best algorithms for analysing datasets (page 20). Companies host competitions on the site – uploading the data they need analysed and a description of the problem they want solved. Participants, called Kagglers, compete against each other to produce the best models for solving the problem. Submissions are scored based on their predictive accuracy and summarized on a live leaderboard on the site. At the end of the competition, the host company pays out prize money in exchange for a royalty-free license to use the winning algorithm. Kaggle also offers a free tool, called Kaggle in Class, to help data science teachers run their own academic machine learning competitions. Previous Kaggle competitions have explored ways to improve gesture recognition for Microsoft Kinect and to aid the search for the Higgs boson at CERN. Other Kaggle competitions aim at recruiting top talent – with high scorers earning a job interview.



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## Securing data

With the GDPR implementation and recent furore over the use and misuse of social media data, people are more aware than ever before of how their data is being used. With this awareness comes an increasing reluctance to share data. Yet more and more businesses rely on data collection in order to deliver growth. So how to collect and use data securely and in compliance with the law?

One sector that relies heavily on data collection is the pharmaceutical sector. Pharma companies spend billions each year to acquire genomic data for use in developing new medications and treatments. With the growing concerns over privacy, people are increasingly reluctant to share their personal genetic data. **Nebula Genomics**, in partnership with Genome sequencing company Veritas, have developed a way to allow people to sell their genetic data while retaining their privacy (page 21). Nebula uses blockchain technology to help customers sell their data to biotech and pharmaceutical companies, and pays them in cryptocurrency. By connecting buyers and sellers directly, Nebula cuts out the middleman and could give sellers more control over their data.

Another area in which people are increasingly aware of the possibilities for data misuse is transportation. Last year, many were incensed when it emerged that the Uber app was tracking user's whereabouts even after their ride had ended. Now, a team of cryptographers at the Swiss Federal Polytechnic Institute has developed software, called **ORide**, which can allow users to participate in ride-sharing without sharing their location data (page 22). The researchers devised a way to encrypt the digital contact between driver and rider, while allowing unencrypted contact between the driver, passenger and ride-hailing service. As a result, users could digitally hail a taxi as normal, but once in the cab, the ride-hailing service would not know where they were. Although still in the development stage, the same technology could potentially be used to give privacy to users of other types of service apps.

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## Innovating in a post-GDPR world

From crowdsourcing and competitions, to philanthropy and predictive algorithms, Springwise has taken a great interest in the huge variety of innovative ways for businesses to make use of data. As deep learning technologies become more widespread, the ability to use data wisely will become even more important. New technologies, such as in-memory computing, may soon make it possible to speed up data processing considerably. This could allow new uses for data technology, such as real-time genomic analysis in medical treatment; mapping changing customer sentiment in real time on social media; and monitoring facial expressions to see how viewers are responding to a particular advert.

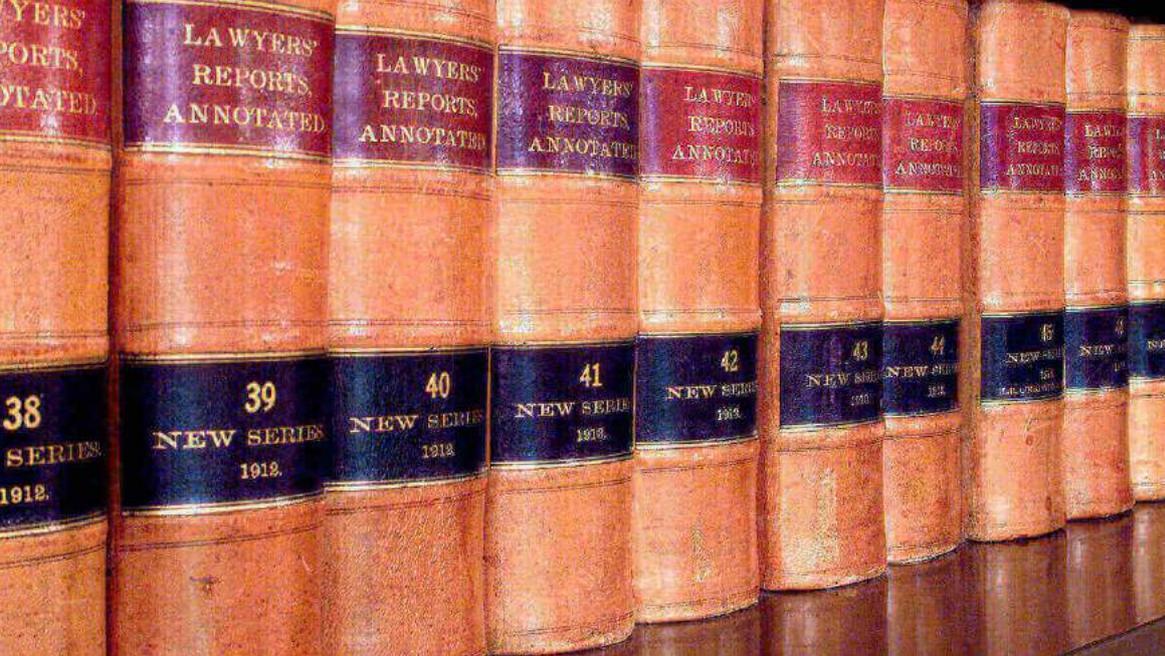
At the same time, as the GDPR comes into effect, companies of all sizes are now under new obligations to tell individuals what types of data is being collected on them, what purposes it is being collected for and how long the data will be retained. Rather than see this as an obstacle, businesses can use the GDPR changes as a chance to engage their customers in a conversation about their data, to build greater trust, and to develop new opportunities for deliver value to customers. Taking a data-first approach is a chance for companies to gain a fresh perspective on how their customers think, and find creative ways for reaching out to them. By forcing businesses to adopt a more holistic view of their use of data, the GDPR will continue to encourage companies to take a long-term view of their data strategy and create new innovations in data use.

**SPRINGWISE**  
EDITORIAL TEAM

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## Summary of Innovations

Innovation	Sector	Description
<a href="#">Predictice</a>	Smart Cities	Predictice is an app that provides lawyers with statistics and data on the likely outcome of commercial and social disputes, based on the history of the courts.
<a href="#">Programmai</a>	Marketing and Advertising	A new advertising solution uses machine learning to predict customer behaviour and improve advertising campaigns.
<a href="#">RapidMathematix</a>	Eco and Sustainability	A new pricing system uses deep learning algorithms and real-time data to price produce and reduce food waste.
<a href="#">DeepMagic</a>	Retail	A new retail solution uses artificial intelligence to enhance the shopping experience and enables stores to operate unattended.
<a href="#">Genetec Inc</a>	Retail	Retail Intelligence system helps store owners count visitors, manage lines and improve displays.
<a href="#">Heart for Heart</a>	Health and Wellbeing	Researchers hope users of the Heart for Heart app will also donate to find a cure for heart rhythm disorder Atrial Fibrillation.
<a href="#">Assistance Publique-Hôpitaux de Paris</a>	Health and Wellbeing	The Assistance Publique-Hôpitaux de Paris group of hospitals is trialling a machine learning analytics system to better manage high demand of health resources.
<a href="#">Kaggle</a>	Computing	Highly skilled data scientist professionals utilise crowdsourcing platform to help clients make sense of data and complete projects.
<a href="#">Nebula Genomics</a>	Health and Wellbeing	A genetics tech company uses blockchain and cryptocurrency to allow people to securely make a profit from their genetic data.
<a href="#">ORide</a>	Automotive	Cryptography researchers have developed a way to encrypt data so that ride-sharing companies cannot see where their riders have been.



## At a Glance

### WHAT

Predictice is an app that provides lawyers with statistics and data on the likely outcome of commercial and social disputes, based on the history of the courts.

### WHO

Dentons

### WHERE

France

### CONTACT

[www.predictice.com](http://www.predictice.com)

[www.twitter.com/predictice](https://www.twitter.com/predictice)

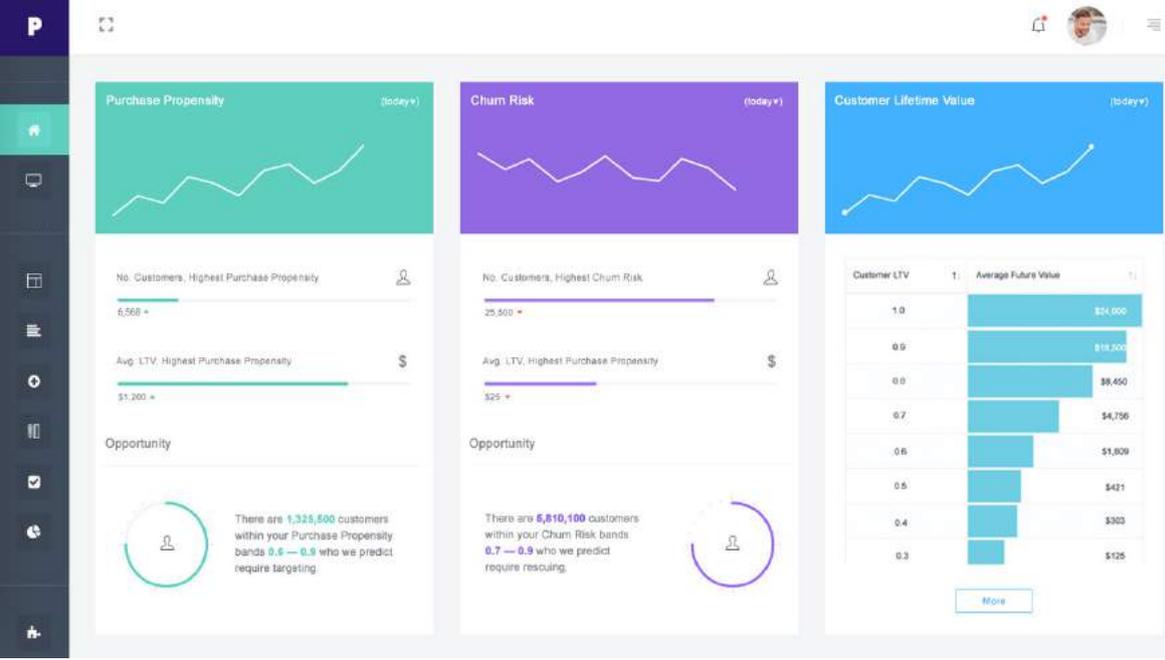
# Software uses big data to predict court decisions

**Predictice is an app that provides lawyers with statistics and data on the likely outcome of commercial and social disputes, based on the history of the courts.**

More and more sectors are using the power of predictive technologies. Back in September, we wrote about this startup in the US that uses an algorithm to vet commercial lawsuits, providing finance to those with potential for success. Offering a similar application of big data to the legal services industry is [Predictice](#), a startup that uses machine learning techniques for case law, allowing it to extract a statistical analysis of the outcome of litigation.

The world's largest law firm, Dentons, has partnered with the French startup to develop software that helps to predict the likely course, cost, length and outcome of litigation based on historical court decisions. It allows advocates to know in advance the probable outcomes and make strategic adjustments accordingly. This can aid decision making such as prioritising certain arguments, or adjusting the compensation claimed.

Marie Bernard, Dentons' director of innovation, said the system allowed the lawyer to price according to risk. Will this technology be adopted in other countries?



## At a Glance

### WHAT

A new advertising solution uses machine learning to predict customer behaviour and improve advertising campaigns.

### WHO

Programmai

### WHERE

United Kingdom

### CONTACT

[www.programmai.com](http://www.programmai.com)

[www.programmai.com/contact-us](http://www.programmai.com/contact-us)

# Predictive advertising identifies target audience

**A new advertising solution uses machine learning to predict customer behaviour and improve advertising campaigns.**

[Programmai](http://www.programmai.com) is a machine learning solution for brands and retailers to use for advertising. Using Artificial Intelligence (AI), the tool can create predictive advertising campaigns.

Programmatic advertising is a way for businesses to target their campaigns at a specific audience. A more accurate customer reach increases a business's advertising impact. It also removes ad spend on those that aren't a part of the target audience. Programmai does this using machine learning methods. The data collected by Programmai provides insights into the target customer's traits and behaviours that were previously unknown.

The company's mission is "To disrupt how advertising is bought by producing 'predictions' that enable you to bid smarter whilst anticipating your customer's next move". Programmai collects data that enables businesses to make predictions such as how likely it is a consumer is going to make a purchase. The technology can also help in the prediction of the lifetime value of a customer, measuring the entire future potential a customer has.

Predictive solutions are changing the ways businesses operate. While Programmai is altering the way businesses plan and measure advertising, other industries are also using predictive solutions to streamline how a business operates. A group of hospitals in France uses machine learning to predict admissions. Another example is an app that can predict court decisions using big data. In what other ways can predictive solutions enhance or re-structure how a business operates?



## At a Glance

### WHAT

A new pricing system uses deep learning algorithms and real-time data to price produce and reduce food waste.

### WHO

RapidMathematix

### WHERE

United States

### CONTACT

[www.rapidmathematix.com](http://www.rapidmathematix.com)  
[info@rapidmathematix.com](mailto:info@rapidmathematix.com)

# AI algorithm predicts prices of produce based on freshness

**A new pricing system uses deep learning algorithms and real-time data to price produce and reduce food waste.**

We have seen many solutions that tackle the issue of food waste, such as grocery stores introducing new pricing systems to ensure products close to expiring will sell. One example of this is a real-time pricing solution that uses radio frequency identification (RFID), electronic shelf labelling, and a dynamic pricing engine to offer cheaper prices. Another example is an automated discount rack that reduces prices for expiring products both online and in store. A new solution, called [RapidMathematix](https://www.rapidmathematix.com), also aims to reduce food waste using deep learning algorithms and machine vision.

RapidMathematix provides automated retail pricing for fresh produce, changing the prices of produce depending on freshness, market conditions and competition. This ensures that customers get their money's worth of what they pay and that stores are able to reduce food waste by offering discounts. Data collected from various sources about freshness, location, product and demand level is processed by RapidMathematix's algorithms to offer the most accurate prices. Additionally, the system is connected to electronic shelf labels, enabling it to calculate and recommend prices in real time.

IoT devices are also integrated into the RapidMathematix system and are used to gather information from inside the retail store. For example, information is collected from products, the shop floor, shelves and customer devices. The data offered by the system can also be used to negotiate prices with vendors, beat competitor prices, and give users more control over their pricing decisions.

In the retail industry, promotions based on real-time data can reduce food waste and increase sales. What other industries could increase sales by using deep learning AI to offer fast and targeted promotions?

**WHAT**

A new retail solution uses artificial intelligence to enhance the shopping experience and enables stores to operate unattended.

**WHO**

DeepMagic

**WHERE**

United States

**CONTACT**

[www.deepmagic.cc](http://www.deepmagic.cc)

[info@deepmagic.cc](mailto:info@deepmagic.cc)

## Startup uses AI to fully automate retail stores

**A new retail solution uses artificial intelligence to enhance the shopping experience and enables stores to operate unattended.**

We have seen many retail innovations demonstrating that the future of retail is both digital and offline. For example, a touchscreen corridor that uses image recognition and purchase histories to suggest and locate items to customers. Another example is this smart shopping trolley that charges customers automatically. A new startup, called [DeepMagic](http://www.deepmagic.cc), also uses digital innovations to enhance the experience of a physical store. Using Deep Learning Artificial Intelligence (AI), DeepMagic is enabling retailers to create unattended physical stores that are fully automated.

DeepMagic offers two products: the Qick Store Platform and the Qick Kiosk. The Qick Store Platform is a solution that lets customers shop with mobile scan and pay. Compatible with iPhone and Android phones, the shopper app also has integrated anti-theft controls. Using AI, computer vision and cameras, DeepMagic tracks the activities of customers in store and recognises any suspicious behaviour. Additionally, store managers can access this information in real-time.

The Qick Kiosk is a pop-up store that is fully automated. Image recognition software enables these unattended mini-stores to operate securely. The ideal positioning of Qick Kiosk is in places such as hotel lobbies and residential buildings – locations where shops do not exist but people would like to see them. Customers sign up on the Qick portal or mobile app. After signing up, customers can access and shop in the Qick Kiosk stores.

Products taken from retailers using DeepMagic are automatically charged to a customer's account. Alternatively, customers can QickScan a label to arrange a home delivery. Unattended stores provide convenience to both retailers and customers through extending store hours, saving costs and automating check-out and security.

An increasing number of retail solutions are using AI to provide a more seamless shopping experience for customers. Moreover, we are seeing that these solutions are not limited to a single platform. Instead, omni-channel approaches are being used to draw in customers and increase sales. What other AI solutions could facilitate retailers to digitally enhance the shopping experience of a brick and mortar store?



## At a Glance

### WHAT

Retail Intelligence system helps store owners count visitors, manage lines and improve displays.

### WHO

Genetec Inc.

### WHERE

Canada

### CONTACT

[www.genetec.com](http://www.genetec.com)

[www.genetec.com/about-us/](http://www.genetec.com/about-us/)

[contact-us](mailto:contact-us)

# Real-time in-store data improves customer service

**Retail Intelligence system helps store owners count visitors, manage lines and improve displays.**

Working with the security arrangements already in place in a store, [Genetec Inc's](http://www.genetec.com) new Retail Intelligence system provides owners with real-time, actionable data to help improve overall customer experiences. From analyzing the direction of traffic flow to heat mapping and alerting staff to long lines, the system provides insights from data that is already easily available.

Available on a subscription basis, Genetec started by offering retailers a free trial of the system in one store. The final version was made publicly available at the end of 2017. Genetec believes that marketing and merchandising managers will also be able to use the newly available intelligence to make more tailored buys and displays, helping provide an all-around improved, more efficient and responsive in-store experience.

Other recent innovations in retail that are helping create more responsive experiences for customers include the Canadian rewards program that uses VR to allow customers to see and hear how they could use their prizes. And in the United States, a yogurt company is now offering mobile coupons accessed via a television ad. In what other ways could shopping be made more enjoyable?



## At a Glance

### WHAT

Researchers hope users of the Heart for Heart app will also donate to find a cure for heart rhythm disorder Atrial Fibrillation.

### WHO

Heart for Heart

### WHERE

Netherlands / United Kingdom / United States

### CONTACT

[www.heartrateapp.com](http://www.heartrateapp.com)

[press@happitech.com](mailto:press@happitech.com)

# App asks for user heart rhythm data for disorder research

**Researchers hope users of the Heart for Heart app will also donate to find a cure for heart rhythm disorder Atrial Fibrillation.**

A joint initiative between the UK and US-based Arrhythmia Alliance, Happitech in the Netherlands, and Bug Labs in the US have launched its [Heart for Heart](#) app with the help of the Dutch Heart Association. The app is a simple tool to monitor heart health. Users place their finger on the camera lens of their phone and hold still in order for it to take 90 seconds of heart rhythm data, which will be used in research to find a cure for Atrial Fibrillation, also known as AFib, the most common heart rhythm disorder.

The app is based on technology called PhotoPlethysmography (PPG), which measures light reflected in the blood. Blood absorbs light and each pulse increases the blood flow in the body and fingertips, so heart rate can be measured by looking at the changes in light absorption. This method is similar to that used in a pulse oximeter and many wearable fitness trackers on the market. It can also recognise the difference between a regular heartbeat and an irregular one.

Data collated from the app will be made anonymous, compiled and visualised ready for analysis by medical professionals. In addition to the heart rhythm measurements, age, location, gender, weight, conditions and lifestyle is required to be submitted by users.

Technology to aid health and wellbeing is a popular market of late, with the smart t-shirt that has an embedded respiratory monitor and a bra that assists wearer in detecting breast cancer symptoms both available to consumers. Would you entrust technology to monitor your health?



## At a Glance

### WHAT

The Assistance Publique-Hôpitaux de Paris group of hospitals is trialling a machine learning analytics system to better manage high demand of health resources.

### WHO

Assistance Publique-Hôpitaux de Paris

### WHERE

France

### CONTACT

[www.trustedanalytics.org](http://www.trustedanalytics.org)  
[trustedanalytics@gmail.com](mailto:trustedanalytics@gmail.com)

# Paris hospitals use big data to predict admissions

**The Assistance Publique-Hôpitaux de Paris group of hospitals is trialling a machine learning analytics system to better manage high demand of health resources.**

Ten years of Paris hospital admissions data, plus external information including weather, patterns of flu infection and public holidays, was ingested and analyzed by the [Trusted Analytics Platform](#) (TAP). Four of the Assistance Publique-Hôpitaux de Paris (AP-HP) are trialling the new predictive system aimed at reducing hospital waiting times. TAP is an open-source analysis platform that uses machine learning to create tools and services across a range of industries.

The AP-HP project is the first to use open source time series analysis, and the TAP engineers that worked on the system had to build new sets of code. If the project is successful, plans are to implement the prediction system through the entirety of the 44 hospitals in the AP-HP group. The AP-HP system is accessed via a web browser and is being used by clinical and administrative staff, allowing admission rates to be forecast up to 15 days in advance. Ideally, this will provide enough advance warning for extra staff to be made available when demand is likely to be high.

Healthcare is embracing technology, looking for new ways to be more efficient with limited resources. A new AI-powered medical information system provides more accurate information for people at home, and an app is being used in the UK to provide clinicians with real-time, customizable visualizations of data. What areas of health are still awaiting a technology update?



## At a Glance

### WHAT

Highly skilled data scientist professionals utilise crowdsourcing platform to help clients make sense of data and complete projects.

### WHO

Kaggle

### WHERE

United States

### CONTACT

[www.kaggle.com](http://www.kaggle.com)

[www.kaggle.com/contact](http://www.kaggle.com/contact)

# Data scientists compete to solve client problems using machine learning

**Highly skilled data scientist professionals utilise crowdsourcing platform to help clients make sense of data and complete projects.**

We all know sifting through copious amounts of data is a laborious but essential task, although many aren't sure exactly what they are looking for or what it all means. [Kaggle](http://www.kaggle.com), an online platform for data science competitions, helps clients solve difficult problems, recruit strong teams, and amplify the power of their data science talent. Its community is made up of over 600,000 data scientists, who are ranked on real-time leader boards according to the problem-solving abilities.

For business-related problems, Kaggle uses supervised machine learning competitions to learn about the most accurate algorithms possible from a set of data, making it possible to advise a client on how best to make their next strategic decision. In the field of recruitment, the platform can help companies by creating competitions for candidates to complete, customising the questions to the needs of the business they are interviewing for. Kaggle also works on research projects, which present new, unique machine learning datasets and use-cases to the community. Kaggle will partner with organisations to host up to five pro-bono research competitions a year, and they are asked to submit a brief proposal for consideration.

The use of AI bots as part of the recruitment process has been covered by Springwise in recent months, while the importance and significance of algorithms has been manipulated by Instagram recently. Both of these factors, which are utilised by Kaggle, show the way in which technological advances are influencing the way businesses operate. How could you step up your company's digital approach with such innovations?



## At a Glance

### WHAT

A genetics tech company uses blockchain and cryptocurrency to allow people to securely make a profit from their genetic data.

### WHO

Nebula Genomics

### WHERE

United States

### CONTACT

[www.nebulagenomics.io](http://www.nebulagenomics.io)

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# Genetics startup offers secure way to sell users genomic data

**A genetics tech company uses blockchain and cryptocurrency to allow people to securely make a profit from their genetic data.**

Currently, pharma companies are spending billions each year to acquire the genomic data they need to identify the causes of diseases and develop new medications and treatments. However, the small amount of data available hinders the growth of this market. This is because many people are reluctant to sell access to their genetic information out of concerns over their privacy. Making progress on developing new drugs depends on acquiring genomic data, which means convincing more people to share their DNA. Now, [Nebula Genomics](http://www.nebulagenomics.io), in partnership with Veritas, has developed a way to use blockchain technology to offer customers a way to profit from selling their genetic data.

On the Nebula platform, customers can choose whether or not to sell their genetic data. Those opting to sell the data are connected directly to potential buyers such as biotech and pharmaceutical companies. Using blockchain technology, the data is secure. Blockchain technology protects the identity of the sellers and gives them control over who can access their genetic data. Sellers receive payment in a cryptocurrency called 'Nebula tokens'. The Nebula model cuts out the middleman to connect buyers and sellers directly. The future of cryptocurrency is unclear, especially following recent moves by US and UK banks to ban transactions using cryptocurrency. However, Nebula is the only testing company currently offering to compensate the sellers of genetic information directly.

At Springwise, we have seen the rapid rise in the number of personal genomics start-ups in the last few years – highlighting start-ups such as myGenome and Knome. With the cost of genomic sequencing expected to decrease from around USD 1,000 today to an estimated USD 100 in a few years' time, Nebula's model may make sound economic sense. It could also allow more rapid detection of rare disease genes and the development of new drugs. How else might companies convince more people to sequence and sell their genetic data?



### WHAT

Cryptography researchers have developed a way to encrypt data so that ride-sharing companies cannot see where their riders have been.

### WHO

Swiss Federal Polytechnic Institute

### WHERE

Switzerland

### CONTACT

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# Researchers develop cryptography to hide data of ride-hailing users

**Cryptography researchers have developed a way to encrypt data so that ride-sharing companies cannot see where their riders have been.**

While ride-hailing services such as Uber and Lyft are hailed as a boon for millions of riders worldwide, they are also heavily criticized for their vast collection of data on customers; data which allows them, at least in theory, to follow their customers' every move. A team of cryptography researchers at the Swiss Federal Polytechnic Institute in Lausanne and Lausanne University, have now developed a prototype software, called [ORide](#). They claim this will allow people to participate in ride-sharing but without sharing their location data.

In a paper presented at the 2017 USENIX Security Symposium in Vancouver, BC, Canada, the researchers explained the cryptography behind ORide. The key is "somewhat-homomorphic encryption", a system that allows computations to be performed on data even while it is encrypted. The result is that the digital "conversation" between driver and rider can be encrypted, while at the same time allowing unencrypted contact between the ride-hailing service, the driver and the passenger. Still in the development stage, ORide allows data about the rider's location to be hidden from the ride-sharing service, while still enabling all the other features of the service, such as billing, to operate as normal.

The ORide system continues to store the identities, allowing both the rider and the driver to rate one another or to recover items the rider left behind in the taxi, however ORide cannot connect them to a particular place or route.

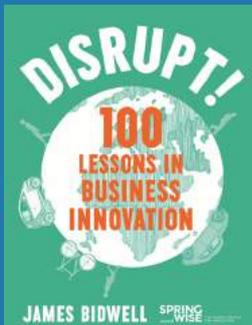
Although implementing ORide would involve some sacrifices in efficiency and convenience, for example, in slowing down pick-up times, it does demonstrate a ride-hailing service protecting privacy as possible. The call for more data protection has led to the development of apps that offer secure information storage and biometrically-secure personal organizers, what other types of information might require systems that enable greater privacy?

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