

# Big Data Analytics

as a disruptor



ATHENS TECHNOLOGY CENTER



## Disrupting a variety of sectors

Big data can be utilized by companies and public sector bodies to determine the source of failure, anomalies and other issues before they actually occur (predictive analytics), to calculate the risks of ventures, to identify latent behaviors before they create problems and to help predict buying habits.

Many big data gurus, from Pierre Delort, Ronald van Loon, Marcus Borba, and Merv Adrian, to experts sharing their knowledge in KDnuggets, recognize the use of data as an undeniable success factor in making informed, valid and timely decisions, both for public sector bodies and private organizations.

Within the spectrum of optimizing various daily processes and practices but also the formulation of prevention policies, modern technological tools are evolving at an exponential pace, allowing the smooth processing of even non-numerical or structured information, regardless of volume and form. In fact, they fully cover the relevant “life cycle” (collection, normalization, visualization analysis), so that everyone who’s interested, can have access to fully measurable conclusions.

One of the pioneers in exploiting IoT and big data analytics was Formula 1, where thousands of data are produced by every vehicle each moment (from tire pressure to fuel efficiency and more). Analyzing this information in real-time can affect the team’s strategy and even increase the driver’s chances of winning the race.

**Let’s take a look at some of the most common big data analytics applications!**



# Big Data Analytics in eGovernment and Smart Cities



Collection, processing, and visualization of data from IoT devices allow monitoring and evaluation of governmental policies and practices at the level of accessibility, health, and environment, like providing real-time information on waste collection, air pollution, traffic congestion, etc.

Moreover, the collection and correlation of governmental open data in different formats and from different sources can support the end-to-end supervision of public works.



## Use cases we have worked on

### Smart Mobility

Promoting data-driven policymaking as a solution to urban mobility challenges, including parking difficulties, traffic congestion, and inadequate transport infrastructure.



### Smart Economy

Focusing on financial management and capturing the economic value of public works via the collection, homogenization, processing & interconnection of openly available financial data.



### Smart Government

Leveraging advanced capabilities of cloud and high-performance computing to evolve the traditional public policy-making cycle using large open data sources.



### Smart Environment

Searching, collecting & analyzing geographical data from public & private sources involved in the management of a city, to help predict future behaviors regarding air pollution, traffic, waste management, but also by displaying real-time data on maps.



### Smart Living

Integrating heterogeneous sensors, assistive medical & mobile devices to enable the continuous data collection from the everyday life of the elderly, which is analysed to offer personalised interventions promoting their healthy & independent living.



### Smart People

Uniting leading local government organizations with Living Lab experts, ICT specialists and expert SMEs to harness the power of 'Open Data' and User-Driven Innovation Systems to develop 'high speed' Mobile Applications that can be shared by citizens.





# Big Data Analytics in the health industry

The collection, processing, analysis, and visualization of medical-related data, from electronic health records, to IoT devices, allows the improvement of preventive and therapeutic protocols and leads to enhanced productivity of the health sector overall.

**We hold extensive, active experience in exploiting Big Data Analytics to digitally transform Public Health.**



Focusing on research, prevention & treatment of serious infectious diseases, where most of them are zoonoses.



Developing tools for surveillance, timely detection & monitoring of real-time data, to diagnose & manage animal diseases.



Promoting research & education in areas related to human disease & its relationship to animal disease.



## Use cases we have worked on



Working on the effective use of “intelligent” and IoT technologies to ensure a healthy ageing & independent living for older people.



Studying new therapeutic protocols & disease management methods based on mobile technologies for the needs of patients with treatment-resistant schizophrenia.



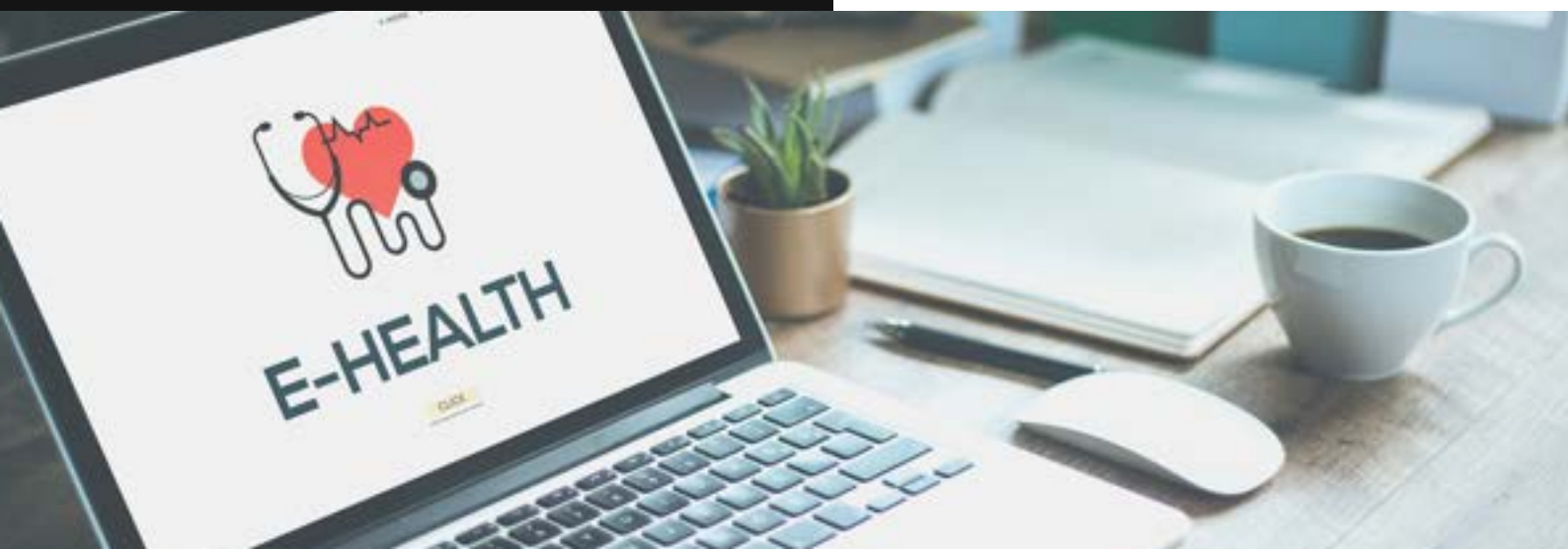
Developing new prognostic models for the appropriate treatment of head & neck cancer cases.



Collecting & analyzing big, heterogeneous datasets related to hearing loss to support the decision making & shaping of holistic public health policies for hearing impaired people.



Delivering a decision support system integrating both unstructured & structured data analysis, image & sequence analysis to support, personalized diagnosis & treatments lung cancer & Alzheimer's disease.



# Big Data Analytics in manufacturing



The notion of Industry 4.0 is the most discussed disruptive factor in manufacturing within the last few years. Smart factories all over the world exploit the collection, processing, analysis, and visualization of data in order to optimize production process methods and models.



We collaborate with Epicor to help manufacturers focus on the transformation of the traditional automation pyramid in order to accommodate flexible factories, that can be quickly reprogrammed to provide faster time-to-market responding to global consumer demand, address mass-customization needs and bring life to innovative products.

## Our Smart ERP solutions

Helping manufacturers use data analytics to uncover problems & find opportunities to grow their business & increase profits, with Smart Enterprise Resource Planning (ERP) solutions.

## Use cases we have worked on

Provision of a cloud-based platform that unifies separate production environments to a universal virtual ecosystem, integrating cyber-physical operations, data analytics & decision support tools.

**We help manufacturers use data analytics to uncover problems and find opportunities to grow their business and increase profits.**





## Big Data Analytics in shipping

The shipping industry also trusts big data analytics in an effort to minimize delays and increase overall operational efficiency. Timely prediction of technical problems, vessel performance KPIs and fleet management reports, are just a niche example.

## Use cases we have worked on



Complete monitoring of the central mechanical equipment



Early detection or even anticipation of any problems



Effective coordination with the procurement department



Automated ordering of required materials



Minimizing management & operating costs



# Big Data Analytics in the Postal Services



Postal services around the globe manage huge volumes of letters and parcels on a daily basis so, data related to these flows can significantly upgrade their service levels and daily operations.



## Use cases we have worked on

### Utilizing an integrated Big Data Analysis platform to develop a Predictive Analytics application.

The application provides assistance for important administrative decisions, mainly in terms of the recorded daily and weekly traffic. The relevant forecasts are based on statistical and mathematical models applied to historical traffic data.

[Read the Case Study for our Big Data Analytics Applications for the French Post Office.](#)



Evidence –based  
decision making



Reliable forecast of  
workflows and workload



Optimized usage of material  
sorting and storage facilities



## Big Data Analytics in Academic Publishing

While the basic principles of the scholarly ecosystem hold fast, technological innovations such as big data analytics, have transformed the face of academic publishing. Publishers, libraries, universities, and aggregators across the world have been using COUNTER usage reports to demonstrate the value of their resources and offerings.

[Read the Case Study for our Big Data Analytics Applications for Alexander Street Press.](#)

## Use cases we have worked on

### Building an Analytics Portal for Streaming Media Utilization

Implementation of a usage analytics solution specialized for the needs of academic content publishers, aiming to measure and analyze the use of the academic material distributed online and present the respective KPIs via a visually appealing and user-friendly UI.



Process huge data volumes in a smooth way



Assure high levels of security, interactivity and friendliness



Exploit diverse sets of data to achieve true intelligence



Flexible and customizable analyses and tools





# Big Data Analytics in the music industry



“Music analytics” on audio or video streams, digital album sales, concert sales, social media posts and comments, Facebook check-ins and more, can help the industry’s stakeholders to analyze trends and predict what the next big hit might be, leading to really smart decisions.

## Use cases we have worked on

We developed and pilot-tested a novel, close to market music platform in three high-impact use cases:



Record Labels



Live Music



Online Music Platforms

Our goal was to help music companies leverage a variety of music data and content, ranging from broadcasters (TV, radio) and music streaming data, to sales statistics and streams of music-focused social media discussions, interactions and content, through sophisticated analytics and predictive modelling services to make highly informed business decisions, to better understand their audience and the music trends of the future, and ultimately to make music distribution more effective and profitable.

We offer these capabilities over a user-friendly, highly intuitive and visual web solution that enables the immersion of music professionals in the realm of music data, and will support them to make highly informed and effective business decisions.



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## About Athens Technology Center (ATC)

Athens Technology Center (ATC) provides a full range data analytics services, to help organizations formulate, monitor and exploit a well-defined structure of KPIs, either in a strategic, departmental or personal level. From creating easy-to-use, custom dashboards to converting data from sensors (IoT) to real-time reports, our teams design and develop custom solutions, following a flexible approach, leading to tangible results.

Our extended portfolio of industry agnostic and industry specific services, spans from Data Management and Data Visualization & Dashboards solutions, to Corporate Data infrastructures and to Predictive and Business Performance Analytics, provided either on-cloud or on premise.