

## ITEA Success Story

# CAP

### Making a valuable asset out of Big Data

While the arrival of enabling technologies has made a wealth of public and organisational data available for analytic processing, access to the data and to efficient analytic tools is often difficult. Furthermore, combining such sources of massive data can yield much richer applications and greater insights to intelligence reporting. Hence, a collaborative platform, which makes it easy on the participants to share data safely and to gain access to latest technology tools easily, is required. By positioning the target open-source architecture to support Big Data, ecosystems and value chains, the ITEA project CAP (Collaborative Analytic Platform), which successfully ran from November 2013 to October 2016, contributed to the development of new but sustainable business models, and laid the foundation for a market value proposition of 'Big Data as a Service'.

The 27 partners of CAP, coming from six different countries worldwide, defined standard, extensible data models and interfaces for the exchange of data between the data owners, platform operators, cloud infrastructure operators and data scientists. The platform incorporated open Big Data tools and features that all participants can use and enhance, thus enabling access to data, sharing and processing in real-time facilitated by a single platform. A key deliverable was the new range of business

models that established metrics for the value of Big Data. These features enabled CAP to regulate the stakeholders' collaboration and develop a new innovative business environment based on shared data and knowledge in a safe setting where data owners have the opportunity to valorise their data across other domains: the Big Data Marketplace.

CAP partners are themselves prime examples of the impact of the platform on their business.

In Turkey, Turkcell Technology created a partnership with a large industry company and established a real-time IoT data flow from fuse boards. Once the integration was completed, Turkcell Technology developed predictive models by getting electric consumption values from these fuse boards and developed a trend-tracking dashboard that will enable near real-time energy-saving actions to be taken, such as improving refrigerators that consume a lot of energy. There are plans to integrate this same model for restaurant and market chains, which is a great opportunity for Turkcell Technology to enter new markets, with more than 20,000 market chains and 5,000 restaurant chains as potential users.

In addition, Turkcell and Ericsson have been testing the applications of Narrow Band IoT in LTE network since the beginning of 2017 with contributions from their own engineers and their local business partners. Smart meters, smart parking IoT systems integrated into the mobile payment system (Paycell), smart manhole examples of warning systems to be used in natural disasters and the recent “Smart Irrigation Hydrant” solution, which is an agriculture use case, have been developed. For the Smart Water Meter solution, consumption values from smart water meters will be sent to CAP for real-time data analysis. Smart water meters measure consumption and basic water quality metrics. Currently a proof-of-concept (POC) is running. Once the POC is completed, it is expected that nearly one million smart water meters will be added to the system. There will be many benefits from this implementation including the reduction of manual meter reading by employees, near real-time detection of water quality anomalies at the home entrance, daily water consumption prediction, etc.

In 2017, the CEO of Turkcell Technology, Kaan Terzioğlu, highlighted the importance of the CAP project in a Turkish daily newspaper: *“One of the best examples of our international collaborations is the Collaborative Analytical Platform project we have been leading in ITEA.”*

Furthermore, the CAP project has focused the mail division of La Poste Group on the real value of the data collected by the mail sorting

machines. Several terabytes were analysed to qualify the quality of the data and then to extract useful conclusions about the processes, with the focus on two aspects. Firstly, the fraud on the franking marks was examined, highlighting the customers and/or the products where the legal manual controls may be the most cost-effective (several million euros may be recovered with the same control workforces). Secondly, a data visualisation of the real process inside a sorting centre was compared with the theoretical flows of mail, helping to reduce futile handling and reducing mail transit delays. Finally, La Poste Group decided in 2016 to invest in Probayes, a French SME with great success in data science, to accelerate the digital transition.

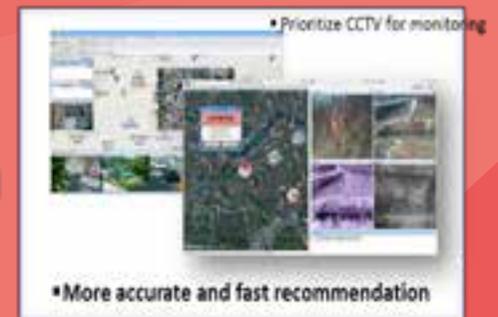
VTT has created a publicly available Wind Power Icing Atlas (WIceAtlas), providing information on in-cloud icing severities for existing and planned wind farms worldwide.



•City-wide Surveillance Center

entities needing a high level of automation and data exploitation. CAP was a catalyst to more data-driven business models and also to information security service business. Nowadays information security is the most rapidly growing business area and data analytics is becoming an increasingly important part of business within various services. The story continues with new service packages focusing on adding value and boosting productivity through data collection and automated analysis in digitalisation management. NetMan was acquired by MPY in the summer of 2017 and together they are challenging IT service markets with tomorrow’s service portfolio.

In Korea, ETRI had developed a concrete CAP platform with multitenant architecture. Based on this platform, Innodap developed the interactive CCTV monitoring service which analysed CCTV metadata together with data from external systems (e.g. weather, traffic, accident, etc.) and



The core of the WIceAtlas consists of over 4500 meteorological stations worldwide with over 20 years of observation data and 35 years of MERRA reanalysis data. By analysing extensive historical icing weather conditions, it is possible to estimate, for example, the resulting long-term iced turbine production losses thus giving valuable Annual Energy Production (AEP) estimates for financial calculations. In addition to production losses, WIceAtlas can provide icing information for ice throw risk assessments and turbine lifetime analysis. The WIceAtlas with low temperature climate layer also helps in the design of pre-construction resource assessment instrumentation and can be used in pre-selection of appropriate turbine model and type.

Thanks to the project’s results, the Finnish SME NetMan created services focused on

recommended more important CCTV videos and situations to focus observer attention on them. Innodap received great interest in introducing this service to several exhibitions and local district surveillance centres in Korea and has been implementing the steps for its commercial product. For application in various domains as well as CCTV, ETRI has been developing the next platform following CAP, whereby data interoperability and distribution among different platforms are being advanced.

The CAP project has created a bigger picture of real-time Big Data by delivering a powerful easy-to-use service platform, which engenders new value-added services and new business models. While corporate companies are short to mid-term targets, end-user services have huge potential in the long term.