

Nice S.p.a. | Oderzo | Italy  
May 2016, 20th



# Big Data Day



# Big Data Day

When Science, Society, Technology and Business face change

It was not long ago that Wired published an article of C. Anderson: “*The end of theory: the data deluge makes the scientific method obsolete*”. This was about the fact that with the start of an algorithmic era, there remain only limited opportunities for theories to mature and evolve. Is therefore Big Data determining the end of theory? If true, then the question becomes: what criteria must be satisfied by data-driven hypotheses in order to govern the new thinking behind knowledge and development? A major challenge is managing Big Data that pervasively appear in every domain involving human decisions and actions. In fact, the underlying generating mechanisms are simply ideas, fascinating and complex, but just ideas. And their origin can involve domains ranging from pure science or innovative technology to all types of transformative socio-economic processes.

The newborn concept of *Metropolitan City*, referred of course to Venice too, appears as a perfect context to re-evaluate such cross-contaminating domains in which Big Data take place. The expected impacts from next generation data analyses and visualizations include re-organization of the territory in terms of services, re-definition of market values, emergence of new indicators to be correlated with quality of life, consideration of social-oriented versus individual-oriented human systems dynamics.

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The *Big Data Day* aims to bring the focus of large interconnected communities on ideas embracing Big Data and centered on topics such as Smart Cities, Data Analytics, Visualization, Social, Internet, etc. These are the factors paving the way for research on innovation and 'global fluency', the latter indicating skills and characteristics in support of effective and appropriate interactions in a variety of cultural contexts (Bennett, 2011). Let us face the challenge, and make the *Big Data Day* a formidable opportunity to identify salient aspects of the ongoing global changes, clarifying their characteristics and assessing their effects.

The meeting is covering both business and scientific aspects of Big Data. Therefore, our target audience spans from students and researchers in industry and academics, to startupper and practitioners.

**09.30 Welcome Coffee**

**10.00 OPENING**



**Carlo Bagnoli**

Associate Professor in  
Strategy Innovation  
University Ca' Foscari



**Anna Bertoldero**

Communication Manager  
Marketing & Corporate  
Nice S.p.a.



**Enrico Capobianco**

Lead Scientist  
Center for Computational Science  
University of Miami



**Renato Marchi**

Chief Information Officer  
PAM Group

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## 10.15 SMART ANALYTICS WITHIN LOGISTICS – A CASE STUDY



### Günter Koch

Senior Manager Big Data & Analytics CSC,  
Frankfurt Am Main Area, Germany

### SUMMARY

*By use of Industry Data Science, Machine Learning at Enterprise Scale and IoT related concepts real time predictions for transport processes are being generated that are far beyond current precision levels, that are based on much simpler Big Data approaches. The approach chosen is a hybrid model of sensor based real-time and historic data. It allows further enhancements by gradually including many additional data sources. The throughput realized on Hadoop based products in the cloud allows today around 100 predictions a second and could be scaled up further easily.*

### BIOSKETCH

*Coming from a background as an experimental nuclear physicist who has worked at research labs in Germany and overseas, Dr. Guenter Koch has worked in many IT roles for CSC Germany, including technical and managerial assignments at global level. With the surge of the Big Data & Analytics domain, Guenter has directed his attention and activities to solution and product development while being responsible for the Central Region BD&A organisation – this allows the combination of data analysis experience from the academic background with the commercial IT management skills gained later in the career*

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## 10.45 CUSTOMER ENGAGEMENT: HOW TO BUILD PERSONAL CONNECTIONS WITH YOUR CUSTOMERS LEVERAGING DATA ANALYTICS



**Marco Moschini**

Consumer Insight & Analytics Lead Manager and Data Science Coordinator  
PAM group

### SUMMARY

*Pam Panorama operates more than 140 multi-format stores, including supermarkets and hypermarkets, located in Northern and Central Italy. To engage its customer base more effectively, the Company has started an exciting journey using big data insights to elevate the Customer experience. Thanks to a tight integration between data scientists and IT engineers, a Data Lake platform has been recently set up to host the Corporate CRM, allowing to centralize, enrich and drive data to specific purpose systems, like the Loyalty Enterprise solution. The data is managed by a team of data scientists, who segment the entire customer base into 3 different models: shopping habits, price sensitivity and lifestyle. Building a holistic vision of its customer, Pam Panorama is able to streamline its marketing approach and harness the full potential of personalization with the use of an automated targeting engine. Delivering on-time and relevant communications and discounts to its customers helps the Company to uplift sales and increase customer satisfaction.*

### BIOSKETCH

*Marco is currently the Customer Analytics Lead of Pam Panorama. With support of a team of data scientists he is responsible to engage with senior executives, category and account managers, consulting and educating around data driven customer strategy related initiatives, explaining methodologies/approaches, benefits of analysis and present results with recommendations. With his team, Marco proactively analyzes customer data to produce and communicate data driven insights, reports and models on specific matters relevant to customer acquisition, cross sell/up sell and retention objectives. Marco recently co-founded a startup. 9 minutes, a mobile app that aims to solve the shopping dilemma, helping people in store to receive friends suggestion during the act of purchase.*

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## 11.15 NETWORK SCIENCE TO RULE BIG DATA COMPLEXITY



**Lorenzo Verna**  
CEO,  
Tykli

### SUMMARY

*In an economic system based on data, we consider data as a valuable asset useful to improve competitive advantages. In the digital era, where the amount of available digital information is growing and growing, it is important to extend the previous concept considering any data, regardless its source or format, as a digital fragment of the organization's identity. Tykli has implemented a unique technology based on that vision/approach which let data fragments to be represented in a graph data model. This model enables any bit of information to find its place in an automatically organized structure and to contribute with its load of information to the global knowledge of the system you analyze. By applying complex network analysis algorithms, it is possible to come up with an order of data which then represents a valuable, accessible and actionable map of the source identity.*

### BIOSKETCH

*Lorenzo (MSc in Computer Science) is currently cofounder and CEO at Tykli, an innovative startup company focused on the R&D of high performance cloud based network analysis engine. He has 15 years of experience in Software industry and strong background in knowledge modeling, semantic technologies and network science.*

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## 11.45 DATA STRATEGY, ENABLING THE DATA-GUIDED ENTERPRISE



**Mark Brand**

Retail Analytics Director  
Thoughtworks

### SUMMARY

*Big Data can uncover hidden knowledge, but typical analytics projects can turn into expensive, time-consuming technology efforts in search of problems to solve. By selecting the tools and techniques which will best handle the data for specific goals, timeframes and architectures, we can deliver business value early and often. This allows us to build platforms over time, not all up front, and to align the application of sophisticated statistical techniques to the extraction of clearly actionable knowledge and insights. Our lean learning approach measures the value of gains at each step, in small iterations and allows use of the results to improve the process or change course to a more fruitful direction. The benefits of this agile approach are mainly: i) Realise the value from data much faster than other methods; ii) Save money by avoiding the waste inherent in building a platform before answer in crucial business questions; iii) Free teams to pivot when unexpected insights emerge.*

### BIOSKETCH

*Mark focuses on data strategies, monetization and improved analytics practices, and also customer journey improvement and innovation. Aiming to help owners, boards and general partners start effective whole-enterprise digital transformation, realizing early value.*

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**12.30 Lunch break**

**15.00 BIG DATA FOR PUBLIC HEALTH: AN OPPORTUNITY OR HYPE?**



## **Patty Kotskova**

Principal Research Associate for e-health at the Dept of Computer Science  
University College London

### **SUMMARY**

*Health threats and natural disasters are frequent, varied, potentially catastrophic in magnitude and transcend borders. Emergencies such as the recent SARS and Ebola outbreaks or the Haiti earthquake, have taken thousands of lives and cost the global economy billions. Big data brought a dramatic shift: Web 2.0 technologies and real-time Big data streamed and shared from social media, mobile phones and wearable/tracking devices have dramatically reshaped the traditional surveillance landscape and created an epistemic shift. These big data streams could improve early warning systems, be analyzed for threats detection to assist public health experts with rapid risk assessment and response (medi+board project). Assessing public sentiments about vaccines and using social media as a risk communication channel has demonstrated a great potential. However, the actual implementation at real world epidemic intelligence systems is still lagging behind technological achievements. What is needed is an integrated solution for risk assessment and rapid response underpinned by frontline healthcare professionals training, as the recent Ebola outbreak demonstrated. Data sharing is another major challenge: population level surveillance data sharing could enable faster and better coordinated response during emergencies while opening new frontiers for data-driven research in public health. However, enabling access, interoperability and privacy protection remains a challenge - never has so much data about so many citizens been held by so few with little policy and legal oversight, such as the case of IT, MedTech and mobile industries. We need a radical shift in regulation of data usage - giving control back to users generating the data, endorsing rapid sharing among PH agencies during emergencies while addressing business implications.*

### **BIOSKETCH**

*Patty is the Principal Research Associate for ehealth at the Department of Computer Science, UCL and the Chair of the 2nd Festival for Digital Health. She was appointed Fellow at ISI Foundation, a consultant at WHO, ECDC and Foundation Merieux. Patty serves at ECDC Knowledge Management Working Group and the NHS National Knowledge Service TB Pilot project. As a Reader and the Head of City eHealth Research Centre (CeRC) at City University, London, she built up CeRC into a thriving multidisciplinary research centre receiving a number of prizes: BCS and Computing: UK IT Industry Awards 2012 – finalist, EHI 2012 Prize – finalist. Patty established an interdisciplinary international Digital Health conference and has been driving digital health at UCL through the 1st UCL Festival Digital Health. Regular speaker at prestigious institutions and conferences, Patty published over 100 peer-reviewed papers, book chapters and is the Chief Editor of Frontiers Digital Health journal. Her research was extensively covered by international media (Medi1TV, BBC, AFP, etc).*

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## 15.30 MODERN IMAGING & HEALTH SECTOR TRANSFORMATIONS



### Marco Dominietto

Medical Physicist  
Biomaterials Science Center  
University of Basel

### SUMMARY

*Medical images techniques as Magnetic Resonance Imaging, Computer Tomography, Ultra-Sound imaging and Positron Emission Tomography are commonly used in everyday clinic to detect and follow-up tumors. Nowadays, they give the clinicians the possibility to acquire high-resolution images of the anatomical region together with information on its physiological behavior in a non-invasive manner. If on one hand the development of imaging techniques has reached almost the plateau of the growing curve, on the other hand the tools to automatically analyze images, extract features and classify the disease are in a quite primitive state. Nowadays we are in a kind of paradox, where we have lot of information, but we are not able to integrate them. A parallel can be made considering pictures of the same object from different point of view. Each image shows a detail of the object, but only their integration defines the picture of it. Similarly, only the integration of all the information arising from different techniques can represent the status of a tumor. The development of tools able to integrate in-vivo imaging data, genetic information from DNA analysis, patient behavior, etc., will be one of the frontiers of the oncological research in the next years. The possibility to detect common group of features, called digital biomarkers, that determine the tumor behavior for each patient, will definitely open the path to a real personalization of the treatment. At the moment, no company has put on the market such kind of products for a couple of reasons: first, all the investment have been traditionally done in the hardware development. Second, the technology for big data analysis was quite expensive in the past decades for a single hospital. Finally, "software tools" were difficult to sell to old generation of clinicians. Nowadays, in the era of Internet and networks the scenario has drastically changed. More and more scientific studies demonstrate the need of data integration, new generations of clinicians are open to this kind of innovation, big data are easier to manage and the global price for this kind of research is significantly smaller than hardware development.*

### BIOSKETCH

*Marco Dominietto (Ph.D Biomedical Engineering) is a medical physicist at the Biomaterials Science Center of the University of Basel (CH). His research focuses on tumor development and image analysis both in mouse models and human beings, artificial muscle development and energy harvesting from human body to power implantable medical devices. Among other sites, he worked at ETHZ (Zurich, Switzerland), CERN (Geneva, Switzerland), and University Hospital of Novara (Italy).*

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## 16.00 BIG DATA AND SMART CITIES



### Enrico Capobianco

Lead Scientist  
Center for Computational Science  
University of Miami

### SUMMARY

*In what sense is a city smart? There are established entities defining this rich area of cross-disciplinary studies, and they refer to social, technical, economic and political factors that keep evolving, thus offering opportunities for constant refinement of the concept of smart city. The emerging properties are mostly contextual, and affect urban data types and their capacity to form complex information systems. A well-known problem in computational analysis is the integration of the generated data. The heterogeneity and diversity of smart city data sources suggest that a system's approach could be ideal to assemble drivers of multiple forces and dynamics, suggesting adaptive solutions too. However, the nature of such systems is quite unpredictable and chaotic, as many factors and variables underlie the system's drivers of smart city contexts through the various interlinked Big Data and networks.*

### BIOSKETCH

*Doctorate in Statistics, currently Lead Scientist at the Center for Computational Science of the University of Miami (US), and associate with the Institute of Clinical Physiology of the National Research Council in Italy (Pisa, Milan and Siena). Postdoc in computational science at UC Berkeley, Stanford Un. (US) and Niels Bohr Inst. and DTU (DK). Research fellow at CWI Amsterdam (NL) and at Boston Un. (US), among other sites. Recipient of CAS (China) and CAPES FIOCRUZ (Brazil) professorships in 2010-12, and visiting scientist of IHES (France) in 2010. He has a vast international research experience in Cancer Genomics, Systems Medicine, Network Science, and Big Data.*

**16.30 Panel: questions & answers session regarding all presentations**

**17.00 Concluding remarks and follow-up announcements**

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## Scientific Committee

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Frontiers in Digital Humanities

<http://journal.frontiersin.org/journal/digital-humanities>

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