Analytics and Open Data in the Government Sector: Brazil and the U.S.

A joint symposium between FGV and Rutgers University
Friday June 3, 2016 10 AM – 1 PM

Governments everywhere at all levels are charged with the responsibility of providing services for the public good, often with limited financial resources. Basically in the business of spending money, municipalities need to provide assurance to their citizen taxpayers that these public funds are being spent effectively and efficiently. In the private sector, efficiency and effectiveness can be measured by profits – such profit measurement is missing in the government sector. As a result, governments have long been the focus of fraud schemes internally and from constituents or other external parties. Fraud is a high risk area for the government sector and is a huge component of most government audit plans.

Data analytics and open data are powerful tools that can help governments audit for and reduce fraud, waste, and abuse of funds. Big Data and data analytics have been used extensively with great success in the private sector, and are just now being leveraged in the government sector. This symposium explores how governments can embrace data analytics internally for audit efficiency and effectiveness and externally for reporting transparency and understandability. This symposium illustrates the potential for government data analytics and open data in the countries of Brazil and the U.S.

In this forum we explore how data analytics may help governments identify patterns and trends and useful information, particularly that which would not otherwise be identifiable by manually examining the data. A variety of analytical methods will be explored. Additionally, many municipalities are publishing open data of all types online, without providing guidelines for analysis. We present ENHANCE, an online automated recommender system that runs the appropriate analytics for the search task and which assists constituents with their "armchair audits" of the government. Furthermore, this increased availability of open government data has highlighted its disparate reporting standards – which are being addressed by governments of both counties and the successes and challenges of these initiatives are reviewed here.

Agenda:

Time	Presentation Topic	Presenter
10h00 - 10h40	Data Analytics for the	Prof. Dr. Miklos A. Vasarheli

	Government Sector	
10h40 – 11h15	SPED project update	Dr. Clovis Belpute Peres
11h15 - 11h50	Duplicates Case Study	Profa. Andrea Rozario
11h50 - 12h25	ENHANCE recommender system	Prof. Dr. Hussein Issa
12h25 – 1h00	Digital Reporting standards for Brazilian and U.S. governments	Profa. Deniz Appelbaum

Presenters:

Dr. Miklos A. Vasarhelyi - 36th WCARS Chair

KPMG Distinguished Professor of Accounting Information Systems
Rutgers Business School

Dr. Miklos A. Miklos A. Vasarhelyi Vasarhely is KPMG Professor of Accounting Information Systems, Graduate School of Management, Rutgers University, and a technology consultant, E-Commerce Solutions Group AT & T Laboratories. He has his BS degree from the State University of Guanabara (Economics) and the Catholic University of Rio de Janeiro (Electrical Engineering) an MBA from the Massachusetts Institute of Technology and his Ph.D. in Management from the University of California, Los Angeles (Management Systems Information). Current research interests of Prof. Vasarhelyi dealing with the area of monitoring, auditing / continuous control, business agents and electronic commerce. He has taught accounting topics and system programs for both graduate and executive in the U.S., Europe and South America consulted on accounting matters and information to the government and big business in the U.S., Europe and Brazil. He has received research grants from the FASB, the Touche Ross Foundation, the Peat, Marwick and Mitchell Foundation, the American Accounting Association, Accounting Education Change Commission, the Institute of Internal Auditors, Ernst & Young, and others. Prof. Vasarhelyi is the director of the Rutgers Accounting Research Center also Laboratory Continuous Auditing and Reporting (Carlab) (http://raw.rutgers.edu/Miklos)

Dr. Clovis Peres

Senior Auditor
Recieta Federal

Dr. Clovis Peres is a senior auditor at Receita Federal, the Brazilian Tax Administration office. At Receita, he heads the division that supervises the Public Bookkeeping System (SPED), being responsible for the collection and the processing of more than 80% of all corporate tax data in the country. He has graduated in Business, Accounting and has attended Law School. His first degree, however, is physics, a field in which he has also pursued a Masters and a PhD degree. His professional and academic interests currently lie in the fields of big data, electronic auditing, tax compliance and public policy.

Profa. Andrea Rozario

PhD Candidate in Accounting Information Systems
Rutgers Business School

Andrea Rozario is a PhD Student in Accounting Information Systems at Rutgers, the State University of New Jersey, USA. She is a licensed CPA and has worked for one of the "Big Four", as well as a large healthcare company. Her research areas include Audit Analytics, Continuous Auditing and Governmental Accounting. Business and governmental entities generate and capture a substantial amount of data every day. Moreover, they analyze this collected data to make better informed decisions. Consequently, it is important to ensure the quality of such data before it is incorporated in the analyses that can support decision making. One of the issues that can negatively impact the quality of the data is the existence of duplicate records. Unfortunately, there is a shortage of studies in the governmental accounting literature that address the problem of duplicate records. Given the recent increased emphasis on the transparency and accountability of government funds, this study examines the problem of duplicate payments and proposes a framework to prioritize duplicate records and identify the more suspicious cases based on a cumulative risk score.

Prof. Dr. Hussein Issa

Professor of Accounting Information Systems
Rutgers Business School

Hussein Issa received his PhD in Accounting Information Systems from Rutgers University. His research areas include the identification and prioritization of exceptions (which was the topic of his dissertation "Exceptional Exceptions"), expert systems, XBRL, governmental accounting,

continuous auditing and continuous control monitoring, and data analysis. He teaches Advanced Design and Development of Information System (MAccy in Governmental Accounting), Information Technology in the Digital Era (Professional Accounting MBA), Introduction to Financial Accounting (Undergraduate). He also co-teaches AIS Research (PhD course).

Profa. Deniz Appelbaum

PhD Candidate in Accounting Information Systems

Rutgers Business School

Deniz Appelbaum is a PhD Candidate of Accounting Information Systems at Rutgers, the State University of New Jersey, USA. She has written and presented papers on fraud detection systems, belief networks, CA/CM in the nonprofit area, and on Big Data. Her current research focus and dissertation work is on the implementation of machine-readable reporting language in the Federal and local governments in the U.S. In both the U.S. and in Brazil, the recent emphasis on greater governmental data transparency reflects the growing social demand for financial and efficiency accountability by the federal and local governments to their citizens and other stakeholders. In both countries, municipalities large and small are racing to create online data portals where citizens can access information of all types. In the U.S., the federal government is undertaking a four year long integration of XBRL as the reporting language of choice (DATA Act). This digital reporting language will also be used by recipients of federal grants for filing spending reports. In Brazil, the federal government is also implementing XBRL at the federal and state levels under a universal mandate. XBRL has been demonstrated in many environments to improve data transparency. She will compare these two country's initiatives for transparent reporting and observe the best practices in Brazil that are appropriate for the U.S. She will then examine the possibility of modeling and extending this XBRL integration in the U.S. from the federal level, to Single Audit reports, and finally to the local entity level. She intends to examine the overlap between the single audit elements and those found in the taxonomy developed by the OMB and US treasury. By extending this taxonomy, it would be possible to generate such reports using the same data sources, thus reducing the burden of redundant and disaggregate reporting. She hopes to also contribute to the stream of existing research that demonstrates the global nature of government practices, where successful approaches in one country can be inspirational adoptions in another.