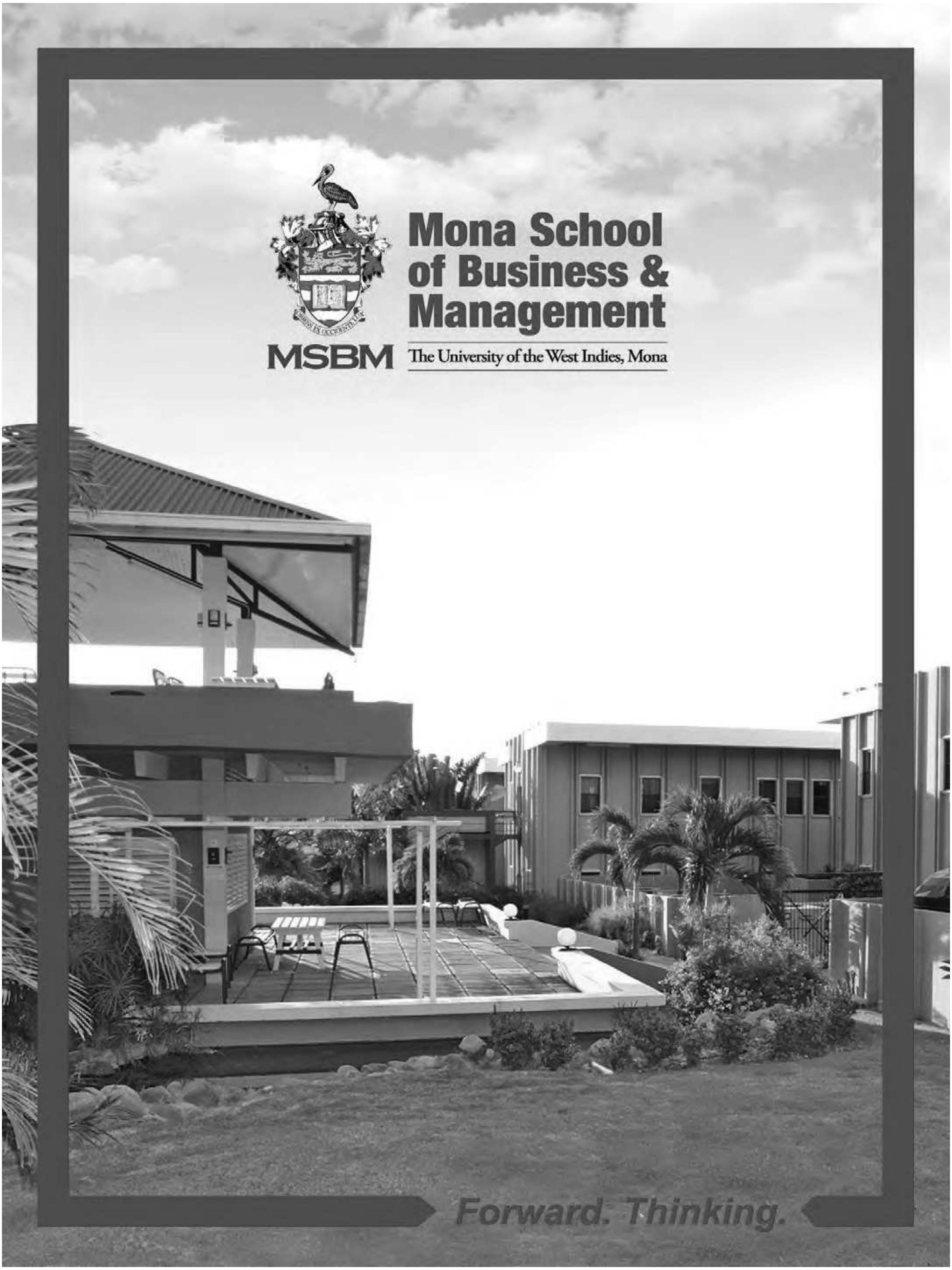
www.msbmreview.biz

MSBM Business REVIEW

A Publication of the Mona School of Business and Management.

Vol. 3 Issue 3: Jan-Feb 2016

Fly Jamaica Airways
Welcome to
BUSINESS CLASS
...So much more than leg room!
BOOK NOW
1-855-WE FLY JA (933-5952)
Jamaica: (876) 619-3595
Guyana: (592) 222-0227
USA: (718) 641-1199
Canada: (905) 676-1991
Email: res@fly-jamaica.com
or contact any authorized Fly Jamaica Airways travel agent
We Know What Our First Class Service Means To You. Visit us at www.fly-jamaica.com


Mona School of Business & Management
MSBM
The University of the West Indies, Mona
Forward. Thinking.

MSBM Business REVIEW

Publisher:
Densil Williams

Editor:
Claude Robinson

Contributing Editors:
Annie Paul
Dennise Williams

Editorial Assistant:
Althea Walker

Design and Layout:
Chris Samuels

Advisory Board:
Sir Kenneth Hall, Chairman
Gary Allen
Ryland Campbell
Audrey Chin
Evan Duggan
Hopeton Dunn
Canute James
Maurice McNaughton
Angela Patterson
Annie Paul
Dennise Williams
Cedric Wilson

Editorial Office:
Mona School of Business & Management
University of the West Indies
Mona

e-mail: msbreview@uwimona.edu.jm

Telephone: (876) 977-2666 / 4649

Website: www.msbreview.biz

Advertising and Marketing:
Judith Richardson
Judith.richardson@uwimona.edu.jm

Advertising rates can be obtained from the marketing department of MSBM Business Review.

ISSN 0799-2793

From the Publisher

Welcome to the January 2016 issue of **MSBM Business Review**. This issue focuses on an important and growing area of research which has application in business and everyday life, Big Data. It is said that the use of big data was responsible for Germany lifting the World Cup in 2014 in Brazil. Analysts showed how the German team used big data to better understand their opponents and then devise strategies to outplay them in order to advance to win the most prestigious sporting competition, the FIFA World Cup. Chief Executive Officers (CEOs) and everyone in business also recognize the value of using data to drive decision making and as such, are spending a lot of time trying to build their data store and use it to gain a competitive advantage in the market place. This issue of MSBM Business Review provides some of the most insightful commentaries on the role of Big Data in driving competitive advantage at the level of the firm and also, industry sector. It draws on the expert knowledge of MSBM faculty and associates who are researching and writing in the area.

In the cover story article, Maurice McNaughton spent some time unravelling the meaning of the concept of Big Data. He noted that: Big Data refers to a collection of data-sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications. Sameer Verma suggests some practical ways to examine the concept. These include the nature of data that are collected – its size and complexity; the target population we are trying to represent; and the technologies that support it.

Other writers such as Rao-Graham, Lloyd and Cowell looked at the possible benefits that organisations can derive from the use of Big Data. Rao-Graham argues that SMEs have an opportunity to combine agility with their natural flexibility as a distinctive competitive advantage that typically eludes larger organizations. Similarly, Cowell and McNaughton in looking at The Role of Analytics in Building the High Performance Workforce, opine that, to truly realize the value potential of workplace digitization, HR leadership must commit to building the analytics capabilities within the HR function that leverage their own internal domain expertise and the understanding of their specific business context.

Further, Lloyd from a practitioner perspective, provides strong insights as to how Big Data is being used in his organisation and how other firms can benefit from that experience "to truly create a customer-centric experience… Make it easy for customers to talk to you and don't forget to talk back. Let them tell you what they want; and use that data to give them the best value they've ever had." Also, Mansingh, looking at how Big Data is used in the financial sector made an important observation as to how it can help to enhance the firm's knowledge of its customers. She concluded in her piece that: "Customer analytics has the potential to enable personalised interaction with customers as a basis for increasing sales and customer value for a financial institution."

In his contribution on the policy implications of this new phenomenon of Big Data, Abdullahi Abdulkadri makes the case for Caribbean countries to make greater use of Big Data for law enforcement, tourism, health, agriculture, transportation, and the economy.

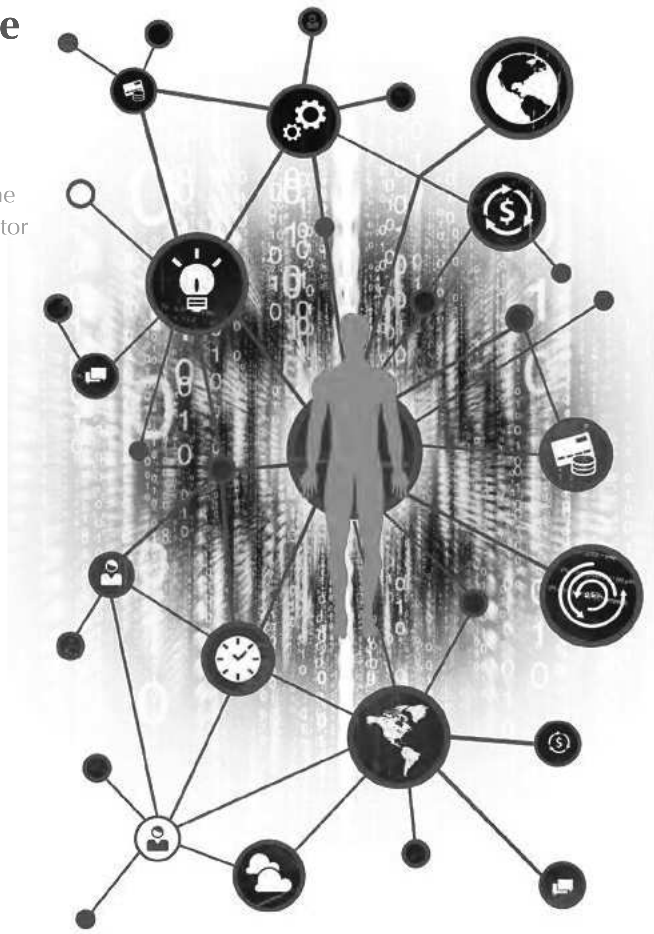
In addition to the thorough analyses presented on Big Data, other contributions in this issue look at topical issues such as the proposed merger of Gleaner Company and the RJR Group, current status of the IMF agreement and the energy outlook for 2016.

This issue of MSBM is not only insightful but provides critical information on issues that are crucial to Jamaica's development. The information can be used by policy-makers at the firm level and also at the level of the macro-economy. I have no doubt that readers will find value in the information presented.

***Densil A. Williams** is Executive Director, Mona School of Business and Management*

COVER STORY

Big Data for better business decision, coherent public policy and sustainable development



Special Feature

CONTENTS

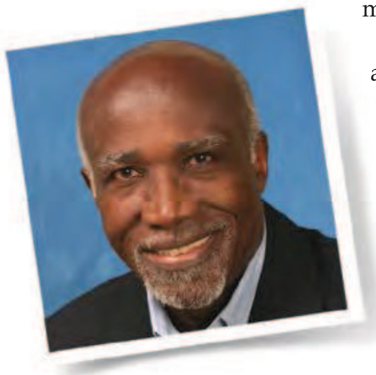
From the Editor

This issue of **MSBM Business Review** is appearing in January as the country gets back to work after the Christmas and New Year holidays, which may have been affected by some degree of uncertainty about the date of the next general election.

After months of signals from the leadership of the governing People's National Party (PNP) that the election would have been held before the end of 2015, Prime Minister Portia Simpson Miller announced late November that this would not happen. Under the constitution, the Prime Minister, who has the sole constitutional authority to set the election date, has until the first quarter of 2017 to call the next general election; so there is no legal requirement for an earlier poll. It's about political calculation.

But as the ruling party and the Opposition Jamaica Labour Party (JLP) continued campaigning well into December the smart money was betting that Jamaicans will be asked to go to the polls in the first quarter of 2016 to decide whether to renew the mandate of the Simpson Miller administration or recall Andrew Holness and the JLP who were voted out in December 2011.

One reason for expecting the vote early next year is that under the four year agreement between the Jamaican government and the International Monetary Fund (IMF) the government is committed to undertake politically risky reforms of the public sector starting in 2016. Among other things, the reforms include cuts in the overall public sector wage bill and a requirement that public sector workers start contributing to their pensions.Government seem to want a fresh mandate to provide the political base for undertaking the risky reforms.



The reforms are part of a large package of policy adjustments that the administration has been implementing to stabilize the economy and change the high debt low growth trajectory of the past four decades. So far, the administration has successfully passed nine consecutive IMF tests; reduced the debt-to-GDP ratio; tamed inflation; and strengthened the foreign reserves. But these stabilizing achievements have come at a price of reduced public investment and anaemic economic growth.

In this context one of our contributors, trade union educator Danny Roberts argues that IMF policies have "not been associated with any improvements in the critical areas of economic growth, productivity improvements or job creation, which leaves us with little choice but to seek a review of the programme." He further laments what he calls "the financialisation of the Jamaican economy" arguing that this has shifted emphasis from the real sectors and thereby playing a contributory role to the lack of growth. So, to a considerable extent, voters are being asked to choose the party and leadership which they think can best protect the gains from the sacrifices from stabilisation so far while generating more growth and jobs.

Interestingly, the influential Private Sector Organisation of Jamaica (PSOJ) and other private and non-governmental groups have been pressing both sides to commit to maintain the fiscal responsibility course the government is on. Leaders on both sides say they'll do exactly that. Whether the narrative will change in the struggle for electoral advantage is to be seen.

In addition to analysis of the IMF agreement this issue revisits the perennial concern about energy prices as a major input in production. Energy contributor Dashan Hendricks outlines some of the benefits to the Jamaican economy arising from lower oil prices over the past year or so.

The issue also contains a detailed analysis of the historic announcement that the island's two largest and oldest media companies, The Gleaner Company Ltd. and Radio Jamaica Limited, would merge their media assets and operations to form a super media entity to respond to changes in communication technology andenable "better capital management which ultimately benefits customers and shareholders." The analyses by former TVJ general manager, Kay Osborne, and MSBM contributing editor, Annie Paul, make compelling reading. Enjoy!

Claude Robinson
Editor


BIG DATA
for better business decision, coherent public policy and sustainable development
Maurice McNaughton | Lila Rao-Graham | Peter Lloyd | Noel Cowell | Gunjan Mansingh

The term "Big Data" is no longer confined to the foreign vernacular of scientists, technologists and geeks. Business and technology executives in public and private enterprise need to appreciate what it is, understand the opportunities and implications for their organisations, and plan to make use of this incredibly valuable man-made resource. In the words of the Independent Expert Advisory Group on a Data Revolution for Sustainable Development, it is the lifeblood of decision-making and the raw material for accountability. High-quality data providing the right information on the right things at the right time is essential for designing, monitoring and evaluating effective policies.

THE EMERGENCE OF BIG DATA

for better business decision, coherent public policy and sustainable development

THE EMERGENCE OF BIG DATA ECONOMIC GAME CHANGE?

The term "Big Data" is no longer confined to the foreign vernacular of scientists, technologists and geeks. It has now become part of mainstream media and popular culture, pervading the spectrum from McKinsey global studies to Dilbert commentaries (See http://bigdata-madesimple.com/dilberts-20-funniest-cartoons-on-big-data/) and Hollywood features like Moneyball with Brad Pitt. The Gartner "*Hype Cycle for Emerging Technologies*" tracks emerging technologies with particularly high levels of hype, or the potential for significant impact.

Maurice McNaughton

The hype cycle progresses from the emergence of the innovation, through a "peak of inflated expectations", disillusionment, enlightenment, and finally matures at a "plateau of productivity". While Big Data was considered to have just passed the hype peak in 2014, its absence from the 2015 edition is either a glaring oversight by Gartner analysts, or a conviction that Big Data is already delivering on the hype, and is here to stay. Evidence suggests the latter. However its recency gives rise to varied misconceptions about what Big Data really is, and the implications for Business. In this introduction to the cover story, we provide a brief overview of the nature and phenomenal growth of Big Data. The remaining articles in this special edition provide excellent cross-cutting coverage of varied applications of Big Data and Analytics in business.

> Big Data generally refers to "a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications".

THE NATURE OF BIG DATA

Big Data generally refers to "a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications" (Wikipedia). More specifically, big data can be considered in terms of several key attributes, namely, volume, velocity, variety, veracity and vastness.

Volume: Incredibly large volumes of data are being generated each day, hour, minute from a variety of sources, including mobile data, eCommerce transactions, social media traffic, and web clickstreams. "The amount of data produced by mankind from the beginning of time up until 2003 was 5 billion gigabytes. The same amount was created in every two days in 2011, and in every ten minutes in 2013". A huge driver of this exponential increase in data intensity is the so-called Internet-of-Things, whereby the Internet originally designed primarily for human communications and information consumption, has evolved into a giant, ubiquitous network connecting a whole range of "things" from household appliances, cars, sensors, all with unique IP addresses and all generating data at a rapid rate. Thus size matters with big data, but size isn't everything. What really distinguishes Big Data from previous large datasets, are the other "V's": velocity, variety, veracity and vastness.

Velocity: With the increasingly digital nature of human, social and business interaction, combined with the data from internet-connected "things", a lot of big data is being generated in real-time. In some cases, data is created at such a rate and intensity that instead of being stored and processed, it requires continuous data analysis over streaming data. Traditional batch processing data management systems struggle to deal with this kind of velocity.

Variety: The degree of diversity and complexity of big data arises from the multiple sources of data from inside and outside the organization such as social media tweets, Facebook likes, mobile and video content, which dwarfs the traditionally highly structured relational (tabular) data. As an illustration, Facebook reported in 2012, that it was processing 2.5 billion pieces of content (links, comments, etc.), 2.7 billion 'Like' actions and 300 million photo uploads each day.

Veracity: Businesses have traditionally struggled with data quality issues arising from manual data collection methods, lack of currency and incompleteness of data that lead to persistent low confidence and trust by executive decision-makers. The increasingly digital nature of business interactions results in robust, real-time data that is much better representation of the "truth".

Vastness: Big Data tends to be exhaustive in scope, capturing the entire target population rather than a subset. Traditional business analysis techniques seek to derive insights from carefully sampled data, (e.g., about customer opinions) using statistical techniques to generalize to the population within margins of confidence. Big Data analytics uses the entire population of customer behavior to discover data driven insights.

BIG DATA MYTHS

Now that we understand the nature of big data, we can readily address some common myths and misconceptions.

Big Data Requires Super Computers? Science and business have had to contend with "large data sets" before. While obviously not on the scale of today's big data revolution, super computers have been employed for some time to do the number crunching of large datasets. Although today's big data challenges traditional data management systems and technologies; it does not require super computers. Sameer Verma's illuminating article on big data technologies explains how open source platforms such as Hadoop use distributed computing on many standard computers to perform big data analytics.

Big Data Is No Place For Small Business? Many small businesses have missed out on advanced information technologies such as data warehousing, business intelligence and knowledge management, due to limited financial resources and technical expertise. Will the potential operational efficiency improvements, customer intimacy, and competitive benefits associated with big data also elude them? ▸▸

Lila Rao-Graham's article tells us why big data analytics is important for SMEs and how managers should go about applying it in their businesses.

Big Data Is exclusively for Technologists and Geeks? Big Data has transcended the technology hype to become a strategic imperative for many businesses in order to remain relevant to their customers and competitive in their markets. In an increasingly dynamic business environment, where interactions with customers, suppliers and competitors are being generated in real-time through digital channels, the ability of firms to sense and respond readily to channel patterns, customer sentiment, and pricing dynamics can be significantly enhanced through Big Data Analytics. The articles by Peter Lloyd and Gunjan Mansingh provide tangible illustrations of the business value propositions for Telecommunications and Banking, two sectors that are among the earliest adopters of Big Data Analytics.

Big Data Will Automate Decision-Making And Replace Knowledge Workers? Machine learning algorithms derived from big data analytics are being increasingly used to automatically mine and detect patterns and apply predictive models about fraud detection, pricing strategy and product recommendation. Does this mean that the human knowledge worker is at risk of obsolescence? Perhaps not. In the latest 2015 Hype Cycle report, Gartner defines digital humanism as "the notion that people are the central focus in the manifestation of digital businesses and digital workplaces." Noel Cowell's insightful article challenges Human Resource practitioners and leaders to step up to the strategic opportunities that Big Data presents for building high performance work systems.

Big Data For Business, Open Data For Governments? In recent years, Open Data (digital data that is made available with the technical and legal characteristics that allow it to be freely used, reused, and redistributed by anyone, anytime, anywhere) has commanded almost as much media play as Big Data. There is a tendency to associate Open Data with Government-led initiatives and Big Data with business enterprise. Abdullahi Abdulkadri discusses in his article, the imperative for Caribbean national statistic offices, such as STATIN, to embrace Big Data as an integral component of Official Statistics. For instance, the quality and currency of data produced by the traditional, prohibitively expensive Census data collection exercise undertaken once every 10 or 15-years can be augmented by utilizing big data sources.

CONCLUSION

The world of the artificial (man-made institutions, artifacts and their interactions) is not getting any smaller. The rate at which data is being generated from human social and commercial interactions is growing exponentially and is now being measured in Exabytes (10^{18} bytes) and Zettabytes (10^{21} bytes). Big Data is here to stay.

Business and technology executives in public and private enterprise need to appreciate what it is, understand the opportunities and implications for their organizations, and plan to make use of this incredibly valuable man-made resource. The remaining articles in this Special Issue provide an excellent start towards enlightenment. ■

Maurice McNaughton is director of the Centre of Excellence for IT Innovation, Mona School of Business and Managemet, UWI Mona.

BIG DATA FOR SMALL BUSINESS

A PRACTICAL APPROACH

"Business Intelligence (BI) has become a strategic initiative and is now recognized by business and technology leaders as instrumental in driving business effectiveness and innovation" *http://www.gartner.com/newsroom/id/500680*. Companies that have been successful in BI implementations have seen their investments in BI generate increases in revenue and produce cost savings equivalent to 100% return on investment (ROI).

Lila Rao-Graham

Many organisational BI initiatives struggle through a myriad of technology platforms, reporting tools and localized data sources that not only fail to deliver consistent information that can drive value-added and timely executives decision-making, but also expose the business to weakness in terms of data security, data access, data quality, and data scalability. In particular, the Small and Medium Size Enterprises (SMEs) that typify indigenous Caribbean organisations are often challenged by the complexity and resource requirements of traditional BI solutions. The design and implementing of the classical data warehouse architecture has proven to be technically and financially daunting for the average small business.

The emergence of Big Data in recent years, fuelled by the dramatically increased volume, variety and velocity of data being generated from sources such as eCommerce, social media, mobile phones and smart devices, has amplified the complexity and demands on Business Intelligence systems. The sheer volume of the datasets in this Big Data world, is increasingly beyond the capacity of traditional BI software tools to capture, store, manage and analyse.

Does this mean that the potential operational efficiency improvements, customer intimacy, and competitive benefits associated with business intelligence and big data analytics have become even more inaccessible to small businesses that are limited by resource and expertise constraints? Fortunately the availability of a rapidly maturing range of open source technology platforms such as Hadoop and MongoDB and Cloud computing services such as Cloudera (http://www.cloudera.com/) have made Big Data Analytics accessible and affordable to even the smallest organisations. Small business innovators can now access and use the most advanced Big Data technologies for a modest monthly expense, to give themselves a fighting chance in the increasingly global competitive landscape, where Sangster's Bookstore in Kingston, Jamaica must contend with the Amazons and Googles of the world.

However access to the technology is only the first step but is not sufficient to harness the benefits of big data and business intelligence. SMEs need a systematic yet practical approach that allows them to rapidly assess baseline capabilities and discover value-adding opportunities for charting their own customized roadmap towards realizing the strategic benefits of business intelligence.

PROPOSED APPROACH

Through recent qualitative research and experimentation, we have developed a systematic, agile approach to BI implementation that is applicable to forward thinking SMEs, enabling them to evaluate the strategic potential of Business Intelligence for their organisations. This approach (see **Figure 1**) consists of four main steps and has as its output one or more high-impact proof-of-concept analytics applications, and a strategic BI roadmap:

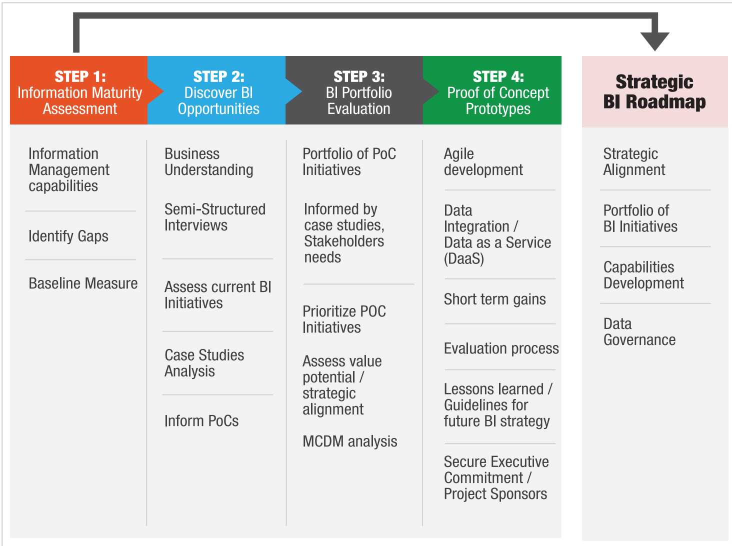


Figure 1 - Agile Approach for Strategic Business Intelligence

STEPS 1 & 2: INFORMATION MATURITY ASSESSMENT / BI OPPORTUNITY DISCOVERY

Many organisations make significant investments in vendor-specified BI tools without realizing any meaningful returns on these investments. This is often due to gaps in the information maturity (or readiness) of the business that inhibits the ability to effectively deploy and exploit BI tools and technologies. SME business leaders can ill afford the waste of already scarce financial and human resources on such adventures Therefore, the foundation steps in this prescribed approach involves Information Maturity Assessment and BI Opportunity Discovery. The IM Assessment is based on a ▸▸

SMEs need a systematic yet practical approach that allows them to rapidly assess baseline capabilities and discover value-adding opportunities.

customized instrument that enables SMEs to baseline and benchmark their Information Management capabilities as the setting within which BI initiatives are conceptualized, developed and deployed, in order to deliver real business value to the organisation.

This maturity assessment examines six domains: *People/Organisation, Policy, Technology, Compliance, Measurement and Process/Practice*, in order to provide a business-wide assessment of the BI readiness of the organisation.

Although the IM assessment was designed to be typically self-administered for larger organisations, most SMEs are unlikely to have specialists in the various domains that the tool measures and therefore require external facilitation. The assessment is therefore conducted in parallel with semi-structured interviewing of the key business stakeholders as part of the Step 2 - *BI Opportunity Discovery.*

Step 2 provides a thorough understanding of the nature of the organisation's business, assessing any existing BI or data-driven initiatives. The information garnered at this stage is used to inform a set of BI Proof of Concepts (PoCs). As SMEs will likely have more generalist knowledge than specialist expertise, the ability of the facilitator (interviewer) to integrate the understanding of the business context with knowledge of industry-relevant, best-practice BI case studies and expertise in a broad range of BI application possibilities, is key to discovering the high-impact BI opportunities for the SME. The information garnered from these combined steps one and two, is used to develop a portfolio of BI Proof of Concepts Initiatives (PoCs).

> SMEs have an opportunity to combine agility with their natural flexibility as a distinctive competitive advantage that typically eludes larger organisations confined by more formal structures and bureaucracy.

STEP 3:
BI PORTFOLIO EVALUATION

Once this portfolio of initiatives is created, given the likelihood of limited resources, there is a need to prioritize these initiatives by assessing the value impact of each. It may be the case that some of the PoCs are essential pre-requisites to overall BI effectiveness, but most will be discretionary based on business context and priority ranking. To maximize the engagement and buy-in of the SME business stakeholders in the overall BI initiative, a workshop is usually conducted to disseminate the findings from the IM assessment and stakeholder interviews, discuss the value opportunities, and employ group decision-making techniques to reach consensus on the subset of BI POC initiatives to be implemented for the organisation.

STEP 4:
PROOF OF CONCEPT PROTOTYPES

The selected PoC prototypes are developed, based on the available resources and appetite of the business. The ability to rapidly mobilize and deploy analytics PoC initiatives requires a flexible platform for connecting to heterogeneous, non-conventional sources of data to experiment, prototype, evaluate the various initiatives and better control the scope, cost, and timeline of their implementation/evaluation. This approach is quite different from the design-intensive classical Data Warehouse Architecture and several available open source platforms provide the requisite flexibility and enabling functionality such as "Data Virtualization" and "Data as a Service".

The PoC prototypes provide a practical demonstration of the value opportunities of BI for the business and the requisite time and resources required to realize these gains. Once the business decision-makers sign-off on the demonstrated outcomes, the working prototypes then require moderate incremental development effort for the accelerated deployment of high-impact production BI applications.

STRATEGIC BUSINESS INTELLIGENCE ROADMAP

In addition to the POC prototypes, this prescribed approach provides the business decision-makers with a strategic BI roadmap with a full portfolio of initiatives customized for the business, and designed in such a way, that the organisation can plan execution incrementally and in the correct sequence, based on it's own capacity for change, without overcommitting financial or human resources.

LESSONS LEARNED

Based on our evaluation of this prescribed approach to Agile BI, in different organisational contexts in Jamaica, we believe the following factors are critical to the success of strategic BI for SMEs:

1. The Information Maturity Assessment is a key foundational step for understanding the business context, discovering high-impact

BI opportunities and mitigating the risk of misallocated initiatives and resources.

2. The use of rapid prototypes to demonstrate the business value of BI, is essential for SME business owners concerned about investing limited resources in BI initiatives without a good understanding of the value it can provide and the effort that will be required.
3. The use of Open Source software provides the benefits of reduced lead-time, cost, time-to-value and, importantly, increased opportunity for experimentation. These are important attributes for SMEs for whom agility, flexibility and a willingness to experiment are assets in competing with larger more bureaucratic organisations.
4. It is important to identify a high-level champion within the organisation to provide business context and facilitate executive stakeholder engagement.
5. Data quality is critical to BI success. Therefore, a formal data quality process must be a part of the BI roadmap.

CONCLUSION

We have referred to this approach as Agile, because if offers a flexible, participatory and iterative approach that allows small business managers to experiment with short term gains and evaluate the longer-term strategic opportunity for BI. However, there is another aspect of Agility to be considered. For SMEs to survive and compete globally with larger, more well-resourced organisations, then *Business Agility*- “the capacity of firms to sense and respond readily to a dynamic environment”- is an essential capability. SMEs have an opportunity to combine agility with their natural flexibility as a distinctive competitive advantage that typically eludes larger organisations confined by more formal structures and bureaucracy. Recent history is replete with evidence of smaller, more agile organisations that have leveraged Business Analytics to outcompete and overtake larger incumbents. Notable examples include: Netflix vs Blockbuster and Amazon vs Barnes & Noble

Organisations seeking to deploy Enterprise level BI, need an effective means of assessing the current state and maturity of their information management practices and to identify and address critical gaps that could present barriers and inhibit the desired returns on, and success of BI Investments. The prescribed methodology provides an approach that is amenable to, though not limited to SMEs.■

Lila Rao-Graham is Deputy Executive Director, Mona School of Business and Management

THE EMERGENCE OF BIG DATA

for better business decision, coherent public policy and sustainable development

BIGGER DATA
BETTER BUSINESS

When you consider the vast number of internet-connected devices currently recording and transmitting data in today's connected society, it shouldn't be too astonishing to know that we actually generate roughly 2.5 quintillion bytes of data each day. But in a world governed by smartphones, GPS, intelligent thermostats and seemingly 'independent' appliances that can practically do anything from Google searches and e-commerce to by-the-second social network updates, data drives our every move today. This is fast becoming Jamaica's everyday reality too, with over 80% of the smartphones used by Jamaicans actively using mobile data.

Peter Lloyd

While many persons may be intimidated by the sheer enormity of the data currently traversing the World Wide Web, many businesses are already busy finding ways to leverage this jackpot called, Big Data, a phenomenon that has already started to revolutionise the way marketing is done.

Imagine…we now live in a world where online news apps like Loop can aggregate the stories that would be of interest to you based on your reading history, and Netflix remembers all your favourite movies, knocking your socks off with spot-on recommendations each time you sit down for movie night. Not to mention that your favourite wine bar just sent you an email offering you an exclusive 20% off your favourite bottle of white wine, while subtly reminding you that they haven't seen you in a while. Next thing you know, you find yourself at the wine bar taking up your exclusive offer because you start feeling like a valued customer again.

CATCH-PHRASES FROM THE 21ST CENTURY

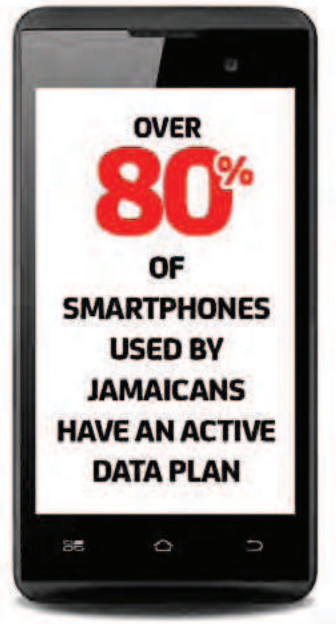
To date, Big Data remains a slightly hazy term which many had prematurely dismissed as just another short-lived twenty-first century catch-phrase. But for the modern, data-hungry marketers, salespersons and business strategists, Big Data represents a treasure trove of opportunities for businesses looking to grow and outshine their competitors with un-matched value propositions and service – all customised to suit each individual customer.

Unlike the easily defined data sets used by researchers in the past, Big Data consists of huge volumes of unstructured and often qualitative data collected from a myriad of networks and Internet-connected devices each day. This is largely due to the Internet of Everything concept, which enables just about anything (from a toaster to a teddy bear) to communicate with the Internet via a unique IP address. Still, when compared to traditional data sets, Big Data is incredibly complex and requires multiple levels of analysis to extract the full value of the information.

> Big Data represents a treasure trove of opportunities for businesses looking to grow and outshine their competitors with un-matched value propositions and service – all customised to suit each individual customer.

BREAKING BIG DATA INTO 'BITE-SIZED' BITS

Big Data might be big indeed, but it's certainly no novelty. In fact, Big Data has actually been around for quite some time now. The misfortune, however, is that while many recognise the potential benefits to be gleaned from Big Data, a large majority still lack the resources and tools required to manipulate it and convert the intelligence they extract into business advantage. What's worse, the inability to do this can be rather detrimental for businesses in today's fast-paced and highly-globalised economy, where competition just happens to be name of the game.



Recognising that this is the new order for marketing and business survival, Big Data has shot to the top of the totem pole, with companies now seeing the value in reallocating and creating dedicated resources to make the most of it. In fact, its ability to help companies develop highly-targeted sales and marketing strategies, make quicker and more informed business decisions, optimise efficiency and increase competitive advantage has now made Big Data one of the most important strategic assets to a business.

According to an October 2012 Harvard Business Review article by Dominic Barton and David Court entitled, **Making Advanced Analytics Work For You—A practical guide to capitalising on big data**, in order for businesses to achieve these benefits, they must be able to identify, combine and manage several data sources, develop the capacity to build analytics models for predicting and optimising outcomes and integrate these into the organisation's operations and decision-making process.

A RABBIT IN THE MARKETER'S TOP HAT

Arvind Santhi's book, **Engaging Customers Using Big Data**, said it the best: 'Marketers now have access to an excruciatingly detailed understanding of shopping behaviour.' All Santhi means is that marketers no longer have to rely solely on the small samples used in traditional research methods. As customers become more and more exposed, marketers can now take advantage of detailed data sets which clearly define and even predict a customer's shopping behaviour, habits and inclinations.

In Jamaica for example, Digicel has made significant investments in ▸▸

building out the fastest 4G network island-wide. Now more and more customers have access to the Internet and consumer demands therefore continue to evolve. Coupled with the local explosion of social media and the immense popularity of sites like Facebook, Instagram, Twitter, SnapChat and Loop, customers want services that are individualised based on their likes, preferences and usage.

GRABBING BIG DATA BY THE HORNS

Social networks have become one of the most bona fide sources of Big Data, as it can provide insights on customer habits and behaviour, satisfaction, needs and wants while helping to create customer loyalty. Customers want someone to talk back to them in real-time and respond to their individual needs instead of taking a broad-brush approach. For many large companies like Digicel, this kind of approach can only help to humanise your brand. Following the launch of Digicel's FIT data plans, which gives subscribers free access to Facebook, Instagram and Twitter, the company took feedback from its social media customers and added popular messaging platform, WhatsApp to the mix. This, of course, made customers see that their feedback was valued and made them feel like the company really did create these plans with them in mind.

For SMEs on the other hand, social media can be the wind beneath their wings. By engaging customers on social media on a more intimate level, they can build trust and good rapport with their customers and gain another level of qualitative feedback that customers may not be so inclined to just give to a larger company. So they must use this to their advantage.

MARKETING TO MICRO-MARKETS

The big business version of such intimate marketing comes from the development of micro-markets, which can essentially be hundreds or even thousands of mini market segments defined by very specific criteria. Compared to traditional sales strategy, micro-marketing pulls on data from a wider variety of sources that are continuously updated and resources are allocated to each micro-market segment based on the availability of opportunities instead of previous sales performance.

This helps companies optimise their marketing strategy and become more efficient with their resources simply by leveraging Big Data to target the right people, in the right place at the right time. This can also provide a huge revenue boost for companies as well if they are able to focus more of their marketing spend on the high value customers that will give them a return on investment.

A PRIMARY ECONOMIC FUEL

The truth is Big Data has become one of the primary fuels for today's economy. Businesses have had to learn to play smarter, not harder in a world that is constantly changing. Big data provides businesses with the flexibility to respond to sudden changes, the agility to change course but not fall off track and the power to stay miles ahead of the competition by making acute business decisions based on cold, hard facts instead of practiced intuition. All businesses need to do now is ensure that they grab big data by the horns if they plan to stay on top of their game.

The long and short of it, however, is that in order to truly create a customer-centric experience, you must know as much as you can about them. So, make it easy for customers to talk to you and don't forget to talk back. Let them tell you what they want, and use that data to give them the best value they've ever had. ■

__Peter Lloyd__ is Marketing Director, Digicel Jamaica


Elevate
your success
Your Business.
Your Opportunities.
When you start your own business, it becomes an extension of you. You create it, develop it and you earn your success.
We offer customized tools, insights and solutions to address your unique financial business needs and help you aim higher.
Learn more today.
Talk to a Scotiabank Specialist
at 1-888-4-SCOTIA
or learn more online at
www.jamaica.scotiabank.com.
ScotiabankGroupJM
ScotiabankJM
Scotiabank®
Discover what's possible

THE EMERGENCE OF BIG DATA

for better business decision, coherent public policy and sustainable development

THE ROLE OF ANALYTICS
IN BUILDING THE HIGH PERFORMANCE WORKFORCE

The emergence of the concept of "big data" has revolutionised many aspects of business including human resource management. The human resource management branch of what is generally called business analytics, is "workforce analytics", "human resource analytics" or more recently "talent analytics." As in other areas of business, the primary driver of HR analytics has been the increasingly digital nature of the workplace reflected in the use of various forms of technology. This has vastly simplified the process of capturing larger volumes of increasingly reliable data about work behaviours and the factors that influence these behaviours.

Noel M. Cowell & Maurice McNaughton

Human Resource Management has long had a tradition and well-deserved reputation for making decisions on the basis of sentiment and gut feeling. Efforts to measure work date back at least to Frederick Taylor's time and motion studies beginning in the late 19th century. When it comes to data-driven decision-making, however, human resource management has tended to lag behind other areas, such as finance and marketing. The dramatic shift towards strategic human resource management over the last 30-odd years has been in large measure an effort to address that gap. A substantial part of the work in the field of Strategic Human Resource Management has focused on the creation of what are called high performance work systems. Since the 1980s, this term has been used to describe a bundle of synergistically aligned human resource management practices, specifically designed to advance the strategic goals of the organisation and particularly to permit the achievement of sustained competitive advantage. In modern organisations this calls for carefully co-ordinated strategies for talent management, compensation, organisational learning and the management of the culture and climate of the organisation to promote employee engagement.

BIG DATA AND HR ANALYTICS

There has been a dramatic increase in the volume and variety of data generated across the human resource lifecycle as a result of increasing digitization in the workplace (see fig 1.). These data assets represent a huge potential source of value for the profession and the increasing availability of powerful user-friendly software has opened the way for greater reliance on the "evidence-based" decision-making that enables high performance work systems. Recruitment analysis, for example, taps into a variety of internal and external data sources from LinkedIN profiles, social media channels, applicant tracking systems and labour market data to optimize the talent matching process. Modern integrated HRIS/Payroll systems digitize many of the interactions between employees and the organization that are generated from time, absence and payroll data, to survey, social and collaboration/workgroup data. Mobile phone and vehicle tracking systems allow organizations to schedule, monitor and optimize employee and vehicle assets, especially for mobile workforces. Performance management and learning management systems enable the integrated planning, tracking and analysis of employee development and performance management programmes to optimize workforce productivity and enhance the leadership pipeline.

RECRUITMENT	WORKFORCE MANAGEMENT	WORKFORCE PERFORMANCE	WORKFORCE DEVELOPMENT
Applicant Tracking / Recruiting System	HRIS / Payroll Systems - workforce demographics	Performance Management System / KPIs	Social Media / Engagement Surveys
LinkedIn	Workforce planning / scheduling systems	Compensation System (Benchmark, Salary, benefits, bonus data)	Learning Management System (training)
Social Media (Facebook, Twitter)	Mobile phone location data		Succession planning / talent pool data
Labour Market / Competency Data	Fleet Management / Tracking System		Exit Interview data

Figure 1. Big Data sources in the Digitized workplace

Open source technologies and cloud computing have made workplace digitization increasingly accessible to both large and small businesses. However, it is not sufficient to rely on IT to produce the report, build dashboards or conduct analyses on demand. Research (Deloitte/Bersin (2013) High-Impact Talent Analytics: Building a World-Class HR Measurement and Analytics Function) shows that the majority of organizations are still only at the early stages of HR Analytics maturity, focussed (at best) on operational reporting for measurement of efficiency and compliance (Pease, Boyce, & Fitz-enz, 2012).

HUMAN RESOURCE ANALYTICS IN THE CARIBBEAN

Recent work carried out by researchers from the Mona School of Business & Management suggests that there is a high degree of appreciation, among major Caribbean human resource leaders, of the need for measurement in HR. Not surprisingly however, companies are at different stages in terms of their adoption of human resource information systems and other technologies that would facilitate the capture and use of workforce data for optimising human performance. Many HR leaders appear to be concerned primarily to justify their "seat at the table" and even the top HR leaders continue to rely on the anecdotal evidence to affirm their value to the business. At best, they are focused on metrics rather than analytics. ▸▸

Mobile phone and vehicle tracking systems allow organizations to schedule, monitor and optimize employee and vehicle assets, especially for mobile workforces.

There are many reasons for this. One is that some HR leaders simply lack the appropriate strategic mind-set. Some, who came to their professions at a time when the imperative was to maintain industrial peace by managing the relationship with the trade union and taking care of worker welfare issues, have mastered the narrative of strategic human resource management but are yet to adjust to the practice.

The other constraint is size. Conglomerates like Massy, Ansa McAl or Grace Kennedy and Company, are not only small by global standards but are divided into much smaller business units. These individual companies often join the larger conglomerate through a process of inorganic growth and bring their own culture and management systems. Historically, enterprise management systems (including those that support human resource management) have been scaled for larger more integrated global corporations. As such they were expensive to acquire and upgrade, and inflexible to the needs of small regional businesses.

The emergence of cloud-computing and the increased maturity and acceptance of open-source solutions, promise to change this situation. Cloud technologies eliminate the need for small companies to invest in expensive infrastructure that requires upgrade every few years, while open source software provides the opportunity for affordable access to customised or purpose-built solutions to suit their specific needs.

The recent MSBM research on Caribbean organisations suggest that major Caribbean companies are only just beginning to explore the use of human resource management systems that are integrated with their larger enterprise management technologies. To truly realize the value potential of workplace digitization, HR leadership must commit to building the analytics capabilities within the HR function that leverages their own internal domain expertise and the understanding of their specific business context. This may require significant investment in finding or developing the right skills sets, integrating the organisation's systems and data, resolving data quality issues and building effective toolsets. It requires, most importantly, HR leadership with a strategic mind-set, sufficient understanding of the business and sufficient stature to negotiate a role and position for HR technologies in the overall enterprise management architecture.

THE FUTURE OF HR ANALYTICS IN THE CARIBBEAN

HR management and professionals in some progressive Caribbean organisations are awakening to these possibilities. Accordingly, they have been moving slowly from occasional or anecdotal evidence of performance, to embrace human resource analytics.

An example of how open-source technology has helped to advance the culture of evidence-based decision making comes from a major financial institution based in Jamaica. In a recent upgrade of their performance appraisal system, the company began by harmonising the appraisal period of all employees to match the financial year. This enabled the organisation to connect key result indicators (KRIs) for each job to overall business goals in a cohesive and consistent way. Secondly, it allowed a closer examination of how individual performance was affecting the performance of the business at various levels. The organisation was therefore able to match major organisational outcomes to individual performance, reward where warranted and take corrective measures where necessary.

To truly realize the value potential of workplace digitization, HR leadership must commit to building the analytics capabilities within the HR function that leverages their own internal domain expertise and the understanding of their specific business context.

For example, it became much easier to measure supervisory effectiveness in the appraisal process. According to the Deputy General Manager, Human Resource "if a supervisor has appraised 20 people and all of his appraisals fall within a 3% range we want to talk to him" with a view to improving his rating skills. Targets can be allocated to revenue generating areas such as retail banking and corporate banking. These targets are aligned to the size and the complexity of the branch. Branch Managers know the target for the branch and both the manager and the team member reporting to that manager have access to performance indicators. This means that in the event of a shortfall, both the human resource department and the head of the business unit can immediately identify the source and take corrective action.

Technology is also beginning to re-define organisational learning in the Caribbean. Learning management systems allow for training on-demand and mitigate traditional distance and travel logistics barriers. The company to which we referred earlier has migrated the majority of its corporate learning interventions to technology-driven learning management systems based on open-source platforms. Aside from being operationally cost-effective, this approach allows employees to work on their own time and at their own pace. Learning outcomes can be easily monitored by the human resource department and, reward and promotion can be linked to learning. Simultaneously the organisation is able to maintain comprehensive data on the skills and competencies of employees, making it easier to determine who can be deployed to job openings as they arise. As Caribbean companies expand and begin to function across borders, the ability to make these kinds of decisions becomes particularly crucial.

CONCLUSION

More than 30 years after the emergence of strategic human resource management, the field continues to be plagued by the Rodney Dangerfield problem; they "don't get no respect." However, bolstered by the emergence of the "big data" phenomenon and the increasing application and sophistication of HR Analytics, strategic human resource management is poised to demonstrate a tangible impact on the business bottom line. This advance has been helped significantly by the emergence of cloud computing, and the new possibilities ushered in by the growing use of open source technologies. Caribbean businesses are beginning to embrace these technologies as a means of creating high performance work systems. Maximizing the impact of human resources on business performance will require strategic HR leadership, supported by multi-disciplinary teams that combine HR generalists and data scientists to harness the potential of big data and HR analytics. ■

Noel M. Cowell is a Senior Lecturer in Employment Relations and Human Resource Management at the Mona School of Business and Management, UWI, Mona

Maurice McNaughton is director of the Centre of Excellence for IT Innovation, Mona School of Business and Managemet, UWI Mona

THE EMERGENCE OF BIG DATA

for better business decision, coherent public policy and sustainable development

CUSTOMER ANALYTICS

IN THE FINANCIAL SECTOR

Customer analytics has the potential to enable personalised interaction with customers as a basis for increasing sales and customer value for a financial institution. The knowledge that organisations can derive from their analytics efforts is dependent on the data that is considered in the analysis and how it is prepared for analysis.

Gunjan Mansingh

Increasingly more organisations are recognising the need for business analytics to harness knowledge about their customers that is hidden in their large data assets. The strategic benefits that analytics can bring to organisations are numerous and its value increasingly apparent to business and technology leaders.

The questions that data rich organisations should be faced with are not whether they are doing analytics but rather how "real time" they are doing it. The imperative for more agile and responsive analytics is driven by a number of factors including:

- *The increasingly volatile business environment (e.g. globalization, accelerated product life cycles, demanding customers, competitive environment);*
- *Organisational big data that has been collected and stored but is vastly underutilized for analysis, and;*
- *The availability of new technologies (e.g. cloud computing, map reduce, online analytical processing-OLAP, and predictive analytics) that support business intelligence.*

Analytics is considered to be the key component of Business Intelligence (BI), as the techniques and tools associated with analytics are the same as those for BI. These techniques rely on the integration of data collection, data extraction, and analytical tools to extract information and/or knowledge from data to assist decision makers in organizations. With the large amounts of data being collected about customers and the advances in technologies that support BI, increasingly these techniques and tools are being used to deliver knowledge about the customers to decision-makers.

With the banking industry, for example, moving away from managing products towards managing customers, customer analytics allows organisations to determine customer preferences at an individual level. It focuses on ensuring that organisations are practising customer engagement at all stages of the customer life cycle through customer acquisition, customer development and customer retention.

Financial institutions have been at the forefront of analytics adoption and numerous applications of analytics exist in a sector that accumulates an enormous amount of customer transactional, demographic and relational data. In the Caribbean region there are still many opportunities for the local financial sector to exploit their data assets. This article highlights some of these opportunities.

ANALYTICS AND KNOWLEDGE DISCOVERY

Analytics enables organisations to make business decisions that are based on data rather than "guesswork" and intuition. Organisations analyse their historical and current data to determine the likelihood of future events using data mining and other predictive analytics techniques. When organisations focus on "Why did it happen" they use OLAP to provide summarized, multi-dimensional and consolidated views of data; and when their focus is on "What might happen" they use data mining techniques and tools for predictive modelling.

The process of analytics is best managed as a repeatable rather than an ad-hoc activity within an organization. Knowledge discovery via data analytics is a multi-phased approach that involves more than just the application of data analytics techniques. It prescribes a set of activities and tasks that must be performed during the knowledge discovery journey and identifies the various dependencies between and across the different phases, it consists of the following steps: Problem Formulation, Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation, and Deployment.

Of the many phases, the business understanding phase is considered to be the most important as it guides the subsequent phases in performing analytics. However, data preparation is the most time intensive and most of efforts of analytics is spent on this phase. For analytics efforts to be successful, data preparation should not be trivialized or under-resourced, and relies heavily on domain knowledge and the ability of the BI analyst to identify the key data assets and derive the appropriate composite and aggregate variables with predictive power.

APPLICATIONS IN THE FINANCIAL SECTOR

To understand existing and prospective customers, various analytical techniques have been applied to customer data in the financial sector. The objective of these techniques is to find the "knowledge nuggets" in the form of patterns, correlations and associations that are hidden in the data. These nuggets enable data rich organisations to do the following:

- Develop risk profiles of customers (e.g. high risk borrower, either for loans or credit cards).
- Detect fraudulent transactions.
- Build profiles and preferences of customer segments and their purchasing behaviour.
- Determine the products that can "cross-sell" (i.e. the products that can be bundled and sold to customers). ▸▸

> Analytics enables organisations to make business decisions that are based on data rather than "guesswork" and intuition.

- Identify customers to "up sell" to (i.e. buy a higher value product of what they currently have).
- Identify a customer likely to churn by identifying the types of transactions that are typically done before leaving.
- Understand customers' opinions on products and services.

Credit risk modelling and marketing are typical applications of customer analytics. Organisations in the Caribbean may be doing such modelling but to ensure that they are getting full benefits from their customer data they can improve the existing practices by following a systematic knowledge discovery approach, to ensure that they are using the right techniques and data. Figure 1 shows the silos of data that may exist for a customer in different locations within the organisation.

Figure 1: Customer Centric view of data assets

> Offering new customers credit cards, extending existing customers lines of credit, and approving loans can be risky decisions for banks, whose fundamental intermediation business model depends on how well they manage risk.

CREDIT RISK MODELLING

Risk management is a critical function in the financial sector as managers need to know the credit worthiness of their customers. Offering new customers credit cards, extending existing customers lines of credit, and approving loans can be risky decisions for banks, whose fundamental intermediation business model depends on how well they manage risk. Predictive modelling can be used to reduce the risk associated with these decisions by determining those customers who are likely to default by building profiles of high-risk borrowers. This will allow a bank to score the customer and decide whether a person is a good candidate for a loan or a credit card, or if there is a high risk of default. By being able to identify the customers likely to default, the bank is in a better position to reduce risk.

The traditional data sources that are used in credit risk modelling may be inaccurate, outdated or incomplete (e.g. income, occupation). Faced with such data quality challenges, traditional lending business models such as consumer finance and microcredit typically rely on a conservative risk modelling approach and high interest rates to compensate for the high risk of default. There are untapped non-traditional sources of data that offer new opportunities to build more discerning risk models to determine customers' ability to repay and willingness to pay.

For example, a customer's ability and propensity to pay back can be assessed using proxy variables derived from utility bills and point of sale (POS) data. The point of sale data from retailers also provides insight into the spending patterns of customers.

Recent financial sector studies, demonstrate that customer demographics, banking transactional data and POS customer data for credit card customers can be used to build profiles to identify those customer who are likely to default and those who are not. Integrating data from these varied sources helped identify additional variables which served as proxy for a customer's earning and spending capacity. Predictive modelling techniques in risk analysis were used to develop behavioural profiles of the profitable credit card customers and risk profiles for all customers. These profiles assisted in determining the credit worthiness of a customer. Understanding such customer behaviour can result in better credit risk models and enable organisations to make data-driven decisions.

MARKETING

Sales and marketing departments of financial services can use analytics to analyse customer data to derive the likelihood of purchase of a particular product. With the shift from product-centric to customer-centric, the customer data that exists in product silos needs to be integrated and analysed. For example, in figure 1 the data for a customer across each product silo will be integrated to create one master customer record. This allows institutions to gain better customer insights and to develop profiles of customer preferences across the range of products and services. By offering only those products and services that customers really want, banks can make substantial savings on targeted promotions and offerings that would otherwise be unprofitable.

Banks can also "cross-sell" or "up-sell" by identifying additional products or services a particular type of customer may be interested in. The more products and services a bank can provide for its customers, the greater the retention likelihood ("stickiness") and customer lifetime value. Customer attrition can also be addressed by identifying the transactions typically done by customers who are likely to leave. Thus, analytics can help the financial entity in not only retaining their existing customers but also to gain new customers. In a competitive environment, customers have many options with regard to where they can do their business; therefore, customer acquisition and retention are very important concerns of a marketing department.

CONCLUSION

Customer analytics has the potential to enable personalised interaction with customers as a basis for increasing sales and customer value for a financial institution. The knowledge that organisations can derive from their analytics efforts is dependent on the data that is considered in the analysis and how it is prepared for analysis. Often the focus is on what analytical techniques and tools should be used and not enough on the data that should be used and in what form. For analytics to be successful it is imperative that businesses follow a structured Knowledge Discovery via Data Analytics approach and use a multidisciplinary team of business leaders, business analysts, data analysts and BI analysts. This will ensure that the right business problems are solved using the right analytical techniques and tools, and the appropriate data assets. ■

__Gunjan Mansingh__ is a Lecturer and Undergraduate Coordinator at the Department of Computing, UWI, Mona

SHAKE-UP IN THE JAMAICAN MEDIA LANDSCAPE

with the RJR acquisition of the Gleaner

Claude Robinson | Kay Osborne | Annie Paul

The coming together of Jamaica's oldest and largest media companies will change the media landscape for decades to come. The nature and scope of the change will emerge with time but it is certain that its consequences will be far-reaching for shareholders, media workers and content creators, audiences, consumer advertising and the interaction between political leaders and citizens.

Shake-up in the Jamaican media landscape with the RJR ACQUISITION OF THE GLEANER

SETTING THE MERGER/ACQUISITION IN CONTEXT

Contextually, the proposed merger between the Gleaner Company and Radio Jamaica Limited can be seen as part of a global trend in response to the new information and communication technologies (ICTs) that have destroyed the traditional media business model. Under the old business model traditiona,l or so-called legacy media (print and broadcast) used hard-to-replicate infrastructure to create news and entertainment products for large audiences that appeal to advertisers—the bigger the audience the more a firm could charge for advertising. Now there is a scramble among a growing number of players and emerging digital platforms for survivability and relevance.

Claude Robinson

As the country celebrated the 53rd anniversary of political independence, Jamaica's two largest and most venerable media companies shook the national media landscape with a thoroughly unexpected announcement on August 5, 2015: They were joining forces to become one giant media company.

The transaction will be achieved through an acquisition of the media subsidiary of The Gleaner Company Ltd. by Radio Jamaica Limited. After the transaction, the acquired media operations will be consolidated with those of Radio Jamaica Limited and marketed under a new group name reflective of the rich legacies of both operations. Shareholders of The Gleaner Co Ltd. will hold 50% of the consolidated entity with existing shareholders in RJR holding the remaining 50%.

According to an analysis on the companies' website, "The current global and local economic environments make the coming together necessary as both companies operating separately would have had to invest considerably in building out platforms and services in order to become full service multimedia entities. The combination allows for better capital management which ultimately benefits customers and shareholders."

To take effect, the deal will have to overcome a number of regulatory hurdles, including the scrutiny of the Broadcasting Commission, the Jamaica Stock Exchange and the Financial Services Commission as well as final approval by shareholders and the courts. Most of these were cleared by early January 2016.

Naturally, the announcement by RJR chairman Lester Spaulding and Gleaner chairman Oliver Clarke generated considerable debate because of its breath taking capacity to influence political, social and business communication. As part of that debate, the Mona School of Business and Management of The University of the West Indies hosted a forum in its Public Advocacy Series on September 10, 2015. The focus was on the implications for the media business in Jamaica.

Lecturer in finance at the MSBM, Dr Twila-Mae Logan, traced the recent share-price appreciation of both companies, noting that they have more than doubled since January with a post-announcement spike and subsequent correction. She said if the scheme of arrangement went through, shareholders should continue to benefit with even better prospects for Gleaner shareholders who retain ownership of stocks in the proposed new company1834 Limited that will be listed separately from the merged entity

"This looks real good for the shareholders at this point in time. The rest now is how management takes advantage …of the synergies that can be derived from using each other's assets to really not disappoint shareholders," Dr Logan said.

This edition of MSBM Business Review reflects some of the discussion and issues raised at the forum. Two contributions, Kay Osborne's analysis of implications for advertising and smaller media companies and Annie Paul's discussion of the likely impact on consumer choice, have been lightly edited and reproduced.

> Now, new digital technologies have exponentially increased the number of media channels and platforms available to consumers and advertisers...

NEW TECHNOLOGIES DESTROYING THE OLD BUSINESS MODEL

Contextually, the merger is part of a global trend in response to the new information and communication technologies (ICTs) that have destroyed the traditional media business model. Under the old business model traditional media companies (print and broadcast) used hard-to-replicate infrastructure to create news and entertainment products for large audiences that appeal to advertisers—the bigger the audience the more a firm could charge for advertising.

Now, new digital technologies have exponentially increased the number of media channels and platforms available to consumers and advertisers. And they have enabled convergence of formerly separate industries blurring the lines between telecommunications, media, information technology, and consumer electronics.

The new ICTs have also altered the way the people formerly known as the audience access and use information and entertainment products. They are no longer at the behest of big, formal media. Anyone with a smart device with an internet connection is a potential journalist and entertainment content creator.

As a result, traditional media can no longer count on large loyal audiences of readers and listeners/viewers. Some experts believe that the daily newspaper as we know it will disappear soon. Others believe that some consumers will always prefer the printed version (of newspapers or books), hence announcements of the death of newspapers, to misquote Mark Twain, are greatly exaggerated. What's not in dispute is that the future is digital.

Some of these global trends are reflected in Jamaica. Pollster Don Anderson, drawing from polls conducted by his firm, Market Research Services Limited over several decades, painted a scenario of shifting media consumption habits, highlighted most dramatically by decline in radio audiences. The estimated total radio sets are down from 2.1 million 14 years ago to about 1.4 million today. Newspaper readership is also down while the Internet audience is growing. ▸▸

Table 1

Potential Media Market ('000) 2005 - 2014

	2005	2009	2012	2014
Radio	1610	1409	1305	1293
Free to Air (FTA) TV	1737	1585	1585	1530
International Cable	839	617	541	667
Local Cable	127	81	62	61
Newspaper	1869	1491	1404	1359
Internet		1035	1381	1676

Source: All-Media Servey 2015, MRSL

WHY ARE THE COMPANIES MERGING NOW?

Managing director of the RJR Communications Group and prospective CEO of the merged entity, Gary Allen, speaking at the forum, rationalised the deal in the context of a dynamic, rapidly changing media landscape, “It is good for a strong, Jamaican-owned media to be here to survive and expand and export the content that we speak about in our creative industries.”

He spoke to most of the issues detailed on the websites of both RJR and the Gleaner explaining of the timing, rationale and expectations of the proposed deal and why they think it’s good for shareholders, the media industry and consumers of media products.

One concern raised at the forum was the likely impact of the merger on employment in the sector. Allen gave no assurances that in the search for efficiencies there would be no layoffs. “We are going to assess those people who are trainable (or) re-trainable, have aptitude in areas that we’re looking to extend the business, and those persons we will continue with so that we can minimise the level of cuts that one would do in this operation. You have to think about doing it smartly. You don’t have a lot of money just to pay redundancies then find another set of money to hire skills that you had at one point that you sent home with a cheque and now you want them to come back.”

Expectation is that going forward media revenues will increasingly be “dominated by digital revenue streams as media platforms converge. ”Hence they have to adapt quickly, create a big enough resource base to survive and grow “to preserve shareholder value and job.” RJR and Gleaner directors and managers believe that, “If as the leading media entities we miss this digital phase, the information and communications sector in the country will be retarded for a long time.”

Of course, digital innovations allow traditional companies to compete on the new platforms and transcend geographical and time boundaries; the key issue is how to monetise the new business.

Pew Research data for the United States showed that in 2014, spending on digital advertising as a whole continued to grow. However, “The main benefactors of digital ad spending continue to be social media and technology companies. Google still holds about a third of total digital (38%) and mobile (37%) ad revenue….”

IMPLICATIONS FOR INDUSTRY AND CONSUMERS

From a public interest perspective some of the questions that have surfaced since the announcement include implications for smaller media companies and whether it will stifle competition in the marketplace of ideas and the shaping of public opinion.

Gleaner and RJR executives argue that concerns about competition are misplaced because of the diversity of the media landscape. “In an industry with 3 daily newspapers, 30 radio stations, 3 free to air television stations and a multitude of local and foreign cable channels and companies we do not consider this deal monopolistic. Further, the shareholding of the combined entity will be divided among 10,000 persons with no one shareholder owning greater than 10% of the outstanding shares of the company, which further limits any monopolistic or single agenda possibilities.”

We are going to assess those people who are trainable (or) re-trainable, have aptitude in areas that we’re looking to extend the business, and those persons we will continue with so that we can minimise the level of cuts that one would do in this operation.

Admittedly, there will be scores of other media entities at play in Jamaica and the market should remain competitive. But part of the threat of consolidation is that two currently respected and independent sources of news and opinion could be morphed into one.

RJR and the Gleaner have two of the largest newsrooms in the country with the independence and resources to ferret out stories. Also, as we head into another election it is noteworthy that they are the only media houses financing separate public opinion polls to test popular opinion. That kind of differentiation should continue. So while the merger makes business and technological sense it must be managed in a way that does not reduce the number of voices in the market place for ideas or opportunities for the practice of old fashion journalism based on verification rather than villification. ■

***Claude Robinson** is editor of MSMB Business Review and Associate Teaching Fellow at MSBM*

Shake-up in the Jamaican media landscape with the RJR ACQUISITION OF THE GLEANER

IMPLICATIONS FOR THE MEDIA ADVERTISING MARKET

My expectation is that RJR/Gleaner will rationalize radio for profitability, and will explore new audience and revenue growth strategies with digital components. Naturally, the combined reach and impact effect of all brands will be exploited through group discounts and deals. However, in the long run such tactics are self-defeating as they inevitably devalue all associated brands. A more enduring approach is to develop innovative, integrating media content strategies that competitors can't replicate, at least in the short to medium term.

Kay Osborne

Discussion of the implications for media advertising from the pending merger of Jamaica's two largest, and arguably most influential, media companies should be contextualised in the broader economy in which the media industry operates.

For several decades the economy has been enfeebled by low growth, high public debt that restricts public spending, high rates of poverty, and high unemployment and underemployment restricting consumer spending on goods and services usually advertised in the media. These restricting parameters frame the economic environment in which more than 30 media players scramble to earn a sliver of an advertising pie the growth of which is constrained by the issues in the broader economy. Conventional wisdom is that this relatively small advertising pie cannot sustain the overcrowded playing field, which includes entities with business models that are not financially viable.

THE NEW PARADIGM

Into this milieu steps the merged entity which will own a range of media properties with unmatched reach and impact and a capacity to be a greater competitor for advertising dollars than when they operate as separate entities. The media properties of the merged entity include: free to air television broadcaster, TVJ, three cable TV channels, five FM radio stations, the Gleaner and Star newspapers, online media assets, including social media products, and Over-The-Top Technology services. TVJ is the prized jewel in the crown with 72.5 % free to air TV market share in a media industry marked by declining print and radio audiences, unviable radio fragmentation, low returns on digital investments, and relatively low cable TV market shares and revenues, at least for now.

Among the RJR and Gleaner executives' immediate challenges is to prove the merger's financial justification to shareholders by demonstrating both improvements in advertising revenues and cost-containment benefits from synergies that are expected from the transaction. One short run hurdle is to finance the cost of broadcast switchover from analogue to digital and high definition (HD) production and transmission, consistent with new global standards. This cost is reported to be in the region of J$700-million.

NEW RIVALS FOR ADVERTISING DOLLARS

Another challenge, and indeed a justification for the deal, is that the new entity will have the human, technical and financial capacity to ensure that a publicly listed Jamaican media company remains a major player in a landscape which is constantly being shaped and re-shaped by technological innovation and the free movement of global finance capital. In this sense, the future is not only being affected by the behaviours of traditional media players but more so by new rivals that have entered the media advertising business in Jamaica and the rest of the Caribbean.

Taking advantage of technological innovations that have seen a removal of the traditional lines separating the telecommunications, media, consumer electronics and entertainment industries, Digicel and Cable and Wireless, in keeping with global trends, are rapidly changing their business models by new offerings to consumers. The breakup of the old Cable and Wireless telecommunications monopoly in 2000 paved the way for new entrants in mobile telephony with the privately owned and controlled Irish-based Digicel, emerging as the dominant player helping to propel Jamaica's cell phone penetration rate to 110% which is among the highest in the world.

Among the RJR and Gleaner executives' immediate challenges is to prove the merger's financial justification to shareholders by demonstrating both improvements in advertising revenues and cost-containment benefits from synergies that are expected from the transaction.

Now the telecoms are aggressively moving beyond a revenue model based on 'talk'. The ubiquitous mobile devices (aka smart phones) provide both C&W and Digicel with a potent tool to divert audiences and advertising revenues from traditional media companies. Telecoms companies are motivated to seek new revenue streams because their technological infrastructure makes the business case compelling and because they're losing revenues from 'talk' to technological innovations providing cheaper ways for people to stay in touch. For example text messaging revenues in the old cell phone business are losing out to free messaging apps, the portal of choice for smart mobile device users.

Smartphones are primed for advertising and sales innovations, such as, 5 and 10 seconds video ads that compete with TV's 30 second offering, and standalone apps such as one-click, "buy-button-features" for consumers to make direct purchases from various sites, fulfilling growing demand for convenience shopping. These innovative features, combined with internet and smart phones' strong and growing usage, lay the foundation for a shift in the media advertising business and in e-commerce growth.

How soon and at what rate will the use of such innovations unfold in Jamaica are unknown. But we know that current lifestyles in Jamaica ▸▸

include mobile devices being almost always turned on with many consumers actively engaged with their devices during every conceivable activity. Therefore, we can deduce that consumption of media through mobile devices will only grow.

Which leads to the inescapable question: What is to stop the telecommunications companies from developing standalone, branded News and Current Affairs apps that deliver scheduled newscasts and instantly deliver consequential, breaking stories, and, by the way, also deliver

> Smartphones are primed for advertising and sales innovations, such as, 5 and 10 seconds video ads that compete with TV's 30 second offering

advertisements? Consider the implications for traditional media companies whose core business is the delivery of consequential news and whose lifeblood is advertising revenues.

Meanwhile, both telecommunications companies have already acquired a range of television assets in Jamaica and other Caribbean markets. Digicel's extensive media portfolio includes regional cable channel Digicel Sportsmax, cable distributor Telstar, content aggregator Loop (which already delivers news, entertainment, and sports), and various cable and internet service providers. Earlier this year, Digicel announced plans to build out an island-wide digital cable network within three years. These acquisitions and plans make a declarative statement that Digicel is a serious media advertising business contender.

Rival Cable and Wireless recently acquired Columbus Communications' assets, including Flow brand assets, for US $3-billion. Cable and Wireless, through Flow, delivers hundreds of foreign television channels and all local channels to Flow's 650,000 viewers in Jamaica alone. Cable and Wireless also delivers content and advertising through its LIME-style TV channel, and has acquired other media assets, including television-over-broadband channels, mobile TV in Jamaica and digital TV in the Eastern Caribbean.

Broadcast regulations allow only a limited range of advertising on foreign cable channels, constraining revenue from this source for Cable and Wireless (Flow) and other cable operators. However, anecdotal evidence points to regular violations of the regulation without consequence. Going forward, one can expect more lobbying by cable operators for changes in the regulations that would allow more advertising on foreign cable channels. Successful lobbying on this score could harm free-to-air TV revenue.

MAXIMISING POTENTIAL FROM THE MERGER

Given these and other recent developments, such as, newcomer, Business Access TV, Mellow FM's TV plans, and the Observer repositioning its Saturday paper, raise the question: How will the merged RJR/Gleaner entity and all other media players secure reasonable shares of the advertising pie? Time will tell.

My expectation is that RJR/Gleaner will rationalize radio for profitability, and will explore new audience and revenue growth strategies with digital components. Naturally, the combined reach and impact effect of all brands will be exploited through group discounts and deals. However, in the long run such tactics are self-defeating as they inevitably devalue all associated brands. A more enduring approach is to develop innovative, integrating media content strategies that competitors can't replicate, at least in the short to medium term.

A meaningful advertising trend that has emerged in the USA and elsewhere is for media planning and online planning to be connected. With this strategy, successful brands integrate social, mobile and web presences with traditional media, having brand and social media managers proactively collaborate on integrated brand and social marketing approaches to maximize results.

> My expectation is that RJR/Gleaner will rationalize radio for profitability, and will explore new audience and revenue growth strategies with digital components

With the growing importance of mobile and social media, TV advertising becomes more important not less important. TV advertising becomes the lynchpin upon which successful campaigns are built. Television is a reach and impact vehicle that maximizes investment returns that compound when complemented by other media and by measurable social media campaigns for most brands. This is why Television Jamaica with its substantial free to air market share is of immense current and future value to the merged RJR/Gleaner entity.

This is also why the combined RJR/Gleaner technological infrastructure, which includes a solid television backbone, is among the merger's main competitive advantages for use in maximizing the synergistic effect of integrated advertising sales with both traditional media and social marketing components. The real challenge for RJR/Gleaner is to combine these capabilities with customer engagement and service innovations while retaining TVJ viewers and growing other audiences, taking into account the telecoms companies' considerable technological and marketing capabilities.

EXPECTED REACTION FROM MEDIA COMPETITORS

A few observations on the remaining media landscape: Financial viability is essential to survive in the evolving media environment. Most if not all smaller media players are undercapitalized and the cost of injecting adequate capitalization at this stage carries considerable risk given the high cost of money and the changed competitive landscape. Some media players owe substantial unpayable tax liabilities; others, in all likelihood, simply avoid such liabilities. Too many have undifferentiated and unsustainable audience and revenue strategies; most are likely unprofitable.

Going forward, smaller companies likely will adopt survival and growth strategies that leverage core competencies. The Observer will likely leverage its event management experience to earn needed revenues, though it must be stated that event staging costs are often prohibitive. CVM could become a target for entities seeking to acquire a TV station to fit with their other media properties. Of course, we don't know if the principal owner, Mr. Michael Lee Chin is in a selling state of mind.

IRIE and Zip FM's radio likely will benefit from integrated digital components to further build relationships with listeners and to grow revenues though digital infrastructure cost is constraining. Other media players likely will ferret out niches with differentiated, value-added components delivered directly and through multi-screens while luring sponsors with repeat exposures. Weaker players will not survive.

My final comment is this: Given Jamaica's constraining economic conditions, all media entities would be well advised to pursue hard currency earnings through unexplored opportunities for innovation and experimentation with offerings that appeal to audiences outside Jamaica who are interested in sectors in which Jamaica has earned a favourable global reputation. ■

***Kay M. Osborne,** a former general manager of TVJ, is a management and communication consultant*

Shake-up in the Jamaican media landscape with the RJR ACQUISITION OF THE GLEANER

IMPLICATIONS FOR AUDIENCES

On August 5, 2015, the RJR Group (comprising the country's oldest and biggest broadcast media) and the Gleaner Group (featuring Jamaica's oldest, most venerable print media and news house) announced a proposal to merge the two entities. This generated much debate and discussion in the public sphere about what exactly this entailed for the media landscape and whether the new entity might represent a monopolistic threat to other less centralized, less well-established media houses. Would the range of options for freedom of expression be narrowed resulting in a dilution of Jamaica's democratic tradition itself? Would the proposed merger not put some employees out of work in the ensuing rationalization and consolidation of positions, to avoid duplication of functions and functionaries?

Annie Paul

The alarm and caution expressed by many may be overblown. In the first place what is proposed isn't the merger of two businesses offering the same services. It is the merger of two entities representing the oldest legacy media in the country, the country's first and most dominant newspaper and its first and largest broadcasting service. Legacy media is just another more popular term for traditional media and we use that term as a counterpart to new media, the new technologies of the 21st century that have forced a global paradigm shift in the way news is produced and consumed.

So there is no loss of choice there. In fact what I think we need to realize is that this merger has been forced by the entry of new players into the field who are offering consumers more, not less choice.

The new entity, which for convenience I refer to as the Gleanajer, is still going to produce a newspaper and will continue to provide TV and radio services. So there is no loss of choice there. In fact what I think we need to realize is that this merger has been forced by the entry of new players into the field who are offering consumers more, not less choice.

THE EXPANDING MEDIA MENU

Earlier in the year Lime, formerly Cable and Wireless, acquired Columbus Communications, owner of Flow, one of the country's largest cable and internet providers. This merger will offer RJR's Television Jamaica (TVJ) stiff competition. Other cable and communications providers Digicel, Sportsmax and Telstar are also merging and they will also offer a range of new options, especially in the arena of sports.

But beyond Sports the new entities are also moving into the news industry. Digicel's Loop is a mobile app news platform that is already giving the Gleaner a run for its money in the provision of news; they claim downloads of their news stories outdo Gleaner news downloads by a ratio of 5 to 1. Even if this is an exaggerated claim it shows you how rapidly the media landscape in Jamaica is changing.

There is also Greenfield Media Productions, owned by Grace Kennedy, a joint venture which has just bought the media rights to all Inter Secondary Schools' Sporting Association (ISSA) events for the next 15 years. While the Grace Kennedy group of companies has been a long-time supporter of sports at the secondary level spending around US$1 million a year sponsoring Boys and Girls Athletics Championship (Champs) alone - the joint venture with ISSA marks the food and financial conglomerate's entry into media, through its investment arm, GK Capital.

DISRUPTION

So, far from occupying the choice position of a monopoly, our legacy media are running scared from the nimble and disruptive new business models discussed earlier and we should welcome their merger as a sample of the radical strategies they will need to adopt to stay alive. Disruption as it is called is very much part of the 21st century. The new business models generally disrupt from below, attracting clienteles that the legacy media either weren't servicing at all or were servicing inadequately.

It's useful to get a better sense of what disruption and disruptive models mean in this context:

[A] "disruptive product addresses a market that previously couldn't be served — a new-market disruption — or it offers a simpler, cheaper or more convenient alternative to an existing product — a low-end disruption. An incumbent in the market finds it almost impossible to respond to a disruptive product. In a new-market disruption, the unserved customers are unserved precisely because serving them would be unprofitable given the incumbent's business model. In a low-end disruption, the customers lost typically are unprofitable for the incumbents, so the big companies are happy to lose them". (What "Disrupt" Really Means, http://techcrunch.com/2013/02/16/the-truth-about-disruption/)

Incumbents ignore new disruptors at their peril. But to wheel and come again is not easy for behemoth-like business entities used to dominating the landscape and generally calling the shots.

Incumbents ignore new disruptors at their peril. But to wheel and come again is not easy for behemoth-like business entities used to dominating the landscape and generally calling the shots. How do ▸▸

you shift from being the crème de la crème of legacy media, with audiences you can take for granted, to nimble new media platforms that respond to the whims and fancies of the consumer?

Methods of news consumption and production have changed radically, reshuffled by the interactivity principle of social media. Legacy media are used to dealing with passive consumers who take whatever is dished out without being able to contribute or interact with the content. Now they have to respond to younger, savvier customers who are used to talking back, commenting, trolling what they don't like and demanding what they do like. Feedback is instantaneous and can't be ignored without damage to the bottom line.

DISSEMINATING KNOWLEDGE, NOT FLUFF

According to the cofounder, and editor-in-chief of the Texas Tribune Evan Smith "The future of news is personalized. The future of news is digitized. The future of news is the consumer controls the conversation, not the provider."

The new changes mean drastically redesigning the roles of news providers. The template developed by Smith and his team for the Tribune offer a very good template for the newly constituted Gleaner RJR entity:

"We describe ourselves as a news organization but we're really much more than that. We report the news, but we also build community around common interests. We go into big cities and small towns with elected officials, pull together hundreds of people, have a conversation about water, transportation, all that stuff. We're creating more discussion, conversation—civil, important, bipartisan, non-partisan around issues. To say that we're reporting the news is, to borrow an old phrase, true but not accurate. Because it's not all we're doing, it doesn't tell the full story. We're providing information, knowledge to people in various formats, to give them things to think about, talk about with their neighbours, around the dinner table, the gym locker room, the watercooler at the office. We want people to know, here is the state of public education, higher education, immigration, healthcare, down the list. With that knowledge you decide what needs to be done."

In a recent Q and A the Gleanajer made statements that suggest that it may be on the right track.

"The aim of the merged company is to use the combined strengths of each company's respective credible and award-winning journalism and other content to better inform, educate and entertain the Jamaican public on things relative to Jamaicans everywhere. The opportunities resulting from this coming together are many; however, we are excited at the prospect of expanding advertising options and packages for our clients as well leveraging our content for wider distribution on established and new platforms."

My advice to the Gleanajer is that it should focus less on expanding advertising options and packages and more on developing compelling news and information products that the public will buy into. That should be their primary focus for once they develop high quality products that consumers want and can't get elsewhere the advertisers will follow. The new entity should also ensure that competent digital natives are part of decision and policy-making at the highest levels of the organization. As a wit observed, 'The future ain't what it used to be' and there is simply no future without the integral involvement of those born and bred amid new media. ■

My advice to the Gleanajer is that it should focus less on expanding advertising options and packages and more on developing compelling news and information products that the public will buy into.

Annie Paul is Head, Publications Section, SALISES, UWI. She blogs at Active Voice (anniepaul.net) and is on Twitter @anniepaul.

THE ALL-NEW 2015 NISSAN

X-TRAIL

No more compromises! Combining smart urban design and off-roader toughness, the new Nissan X-trail is both dynamic and elegant. From its sculpted lines to streamlined curves, it is designed to adventure in style and get the most from every journey. **Ready or not, the X-Trail is here to take you on an adventure!**

FIDELITY MOTORS
5-18 Hanover Street, Kingston TEL: 948.5409 / 5459 FAX: 967.0375 www.nissanjamaica.com

#NISSANJAMAICA

POLICY ANALYSIS

BIG DATA IN THE POST-2015 DEVELOPMENT AGENDA

POLICY IMPLICATIONS FOR OFFICIAL STATISTICS

In September 2015, world leaders adopted a new set of global Sustainable Development Goals (SDGs) as part of a transformative agenda for humanity and the planet. The 2030 Agenda for Sustainable Development represents a plan of action for people, planet and prosperity. It consists of 17 goals which will succeed the Millennium Development Goals (MDGs) on 1 January 2016 and is expected to drive global development efforts in the post-2015 era.

Abdullahi Abdulkadri

The architects of the SDGs took into consideration lessons learned by national governments, international agencies and civil society in the implementation and monitoring of the MDGs in crafting the new goals. Of note among these is the paucity of data for measuring progress towards the achievement of the MDGs. The poor quality of available data and the lack of timeliness in generating and disseminating data and statistics have also been noted as major hindrances to the attainment of sustainable development. As the Independent Expert Advisory Group on a Data Revolution for Sustainable Development stated in its report to the United Nations Secretary-General (A World That Counts, November 2014, p.2):

"Data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible."

Since the release of that report, the call for a Data Revolution for Sustainable Development has gained momentum. An essential element of this revolution is Big Data; data that are generated in large volume and with great velocity, variety and veracity. In recent times, Big Data has been promoted as a viable alternative or complement to traditionally-sourced official data. This is within the context of rapid advancements in Information and Communications Technology (ICT) that has enabled the production of a great variety of digitally generated information in high volumes as well as in real time. This has led to an explosion in the volume of data available in the world today compared to a decade ago. Meanwhile, critical decisions about development programmes and projects are delayed because of lack of data. Worse still, decisions are routinely made with no evidence-base for such decisions that will have repercussions not just for the current generation but for the generations to come.

A world awash with information but with very little data available to inform sustainable development efforts is paradoxical. Every tweet sent, every Facebook posting made, every scanner transaction conducted at the supermarket, and every Google search carried out creates potentially useful record for developmental purposes. That is not to mention voice and text traffic on cellular networks as well as Global Positioning System applications on mobile devices. These are all sources of Big Data and the private sector, some industries better than others, has capitalized on the Big Data that consumers generate to drive business value. The time is now ripe for these same data that we generate just by going about our daily activities to be used in transforming our world; to eradicate poverty, to end hunger, and to ensure healthy lives, just to mention a few.

> Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible.

POTENTIAL TO TRANSFORM OUR WORLD

Big Data has a huge potential to meaningfully transform our world. If SMS could help inform health officials of the possibility of an epidemic long before official statistics are available, would there be an argument against its use? If tweets about fear of job loss is a good predictor of future unemployment, why must we wait for a year or more to know how many people were unemployed? If GPS data can help track displaced residents after a disaster, will there be a popular support for it? These are some of the apparent benefits of Big Data when harnessed by the government. However, the current environment in which National Statistical Systems (NSS) operate does not facilitate this and for the NSS in the region to take full advantage of the Data Revolution for Sustainable Development, they must embrace Big Data and develop a strategy to incorporate Big Data in official statistics.

> Many Caribbean countries today boast a mobile service subscription rate in excess of 100% but the data generated from mobile devices are largely untapped for the public good

Many Caribbean countries today boast a mobile service subscription rate in excess of 100% but the data generated from mobile devices are largely untapped for the public good, except in cases of law enforcement, even though such Big Data could be useful in many facets of the public sector. Tourism, health, agriculture, transportation, and the economy are examples of sectors that can benefit from Big Data. Big Data is especially desirable because it is more cost-effective and timelier. ▸▸

However, Big Data has its challenges. Chief among these is the concern about violation of privacy from government's use of private data. Others pertain to issues of technology, access to Big Data, methodology of and expertise in data analytics. These are all well-founded concerns for the National Statistical Offices (NSOs) in the Caribbean. Nonetheless, these concerns should not constitute unsurmountable obstacles to the exploitation of Big Data for developmental purposes.

> If Big Data from search engine results would allow us to predict the unemployment rate months or years before official statistics are produced, policy interventions could be put in place in a more timely fashion

Tackling the Big Data challenges will require, first and foremost, an ideological shift within the NSS to be open to Big Data. This would be facilitated by amending the Statistical Act of many countries to recognise Big Data as a legitimate source of official statistics. A few countries are already embracing open governance and open data platforms which could aid a Big Data initiative. Developing expertise in data analytics is also crucial for any successful Big Data initiative. Big Data is highly unstructured as opposed to data for official statistics that are very structured. A different skill set is required to make meaningful interpretation of Big Data. More so, official statistics are generated with adequate provisions made for representativeness of the data. Therefore, before Big Data can be incorporated in official statistics, benchmarking studies need to be conducted to calibrate Big Data to survey and administrative data collected from traditional sources. All of these will require manpower and financial investment but there is no better time than now to make these investments.

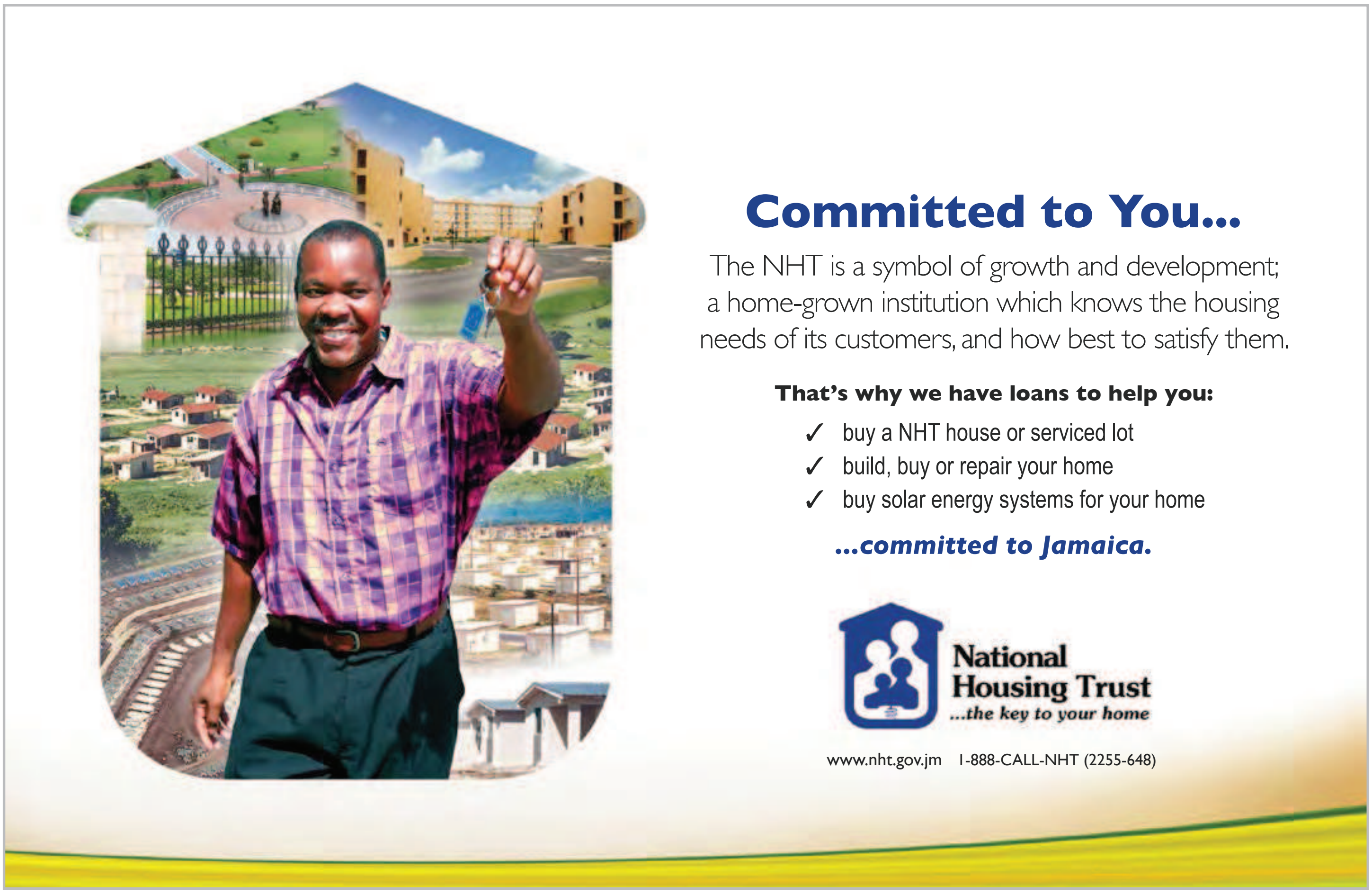
EMBRACE BIG DATA FOR SUSTAINABLE DEVELOPMENT

In comparison to the MDGs that had 8 goals and 21 targets, the SDGs consist of 17 goals and 169 targets. Given that the Caribbean region did not perform particularly well in monitoring and reporting on the MDGs and considering the fact that the SDGs will pose even a greater challenge as the demand for data will be greater, Big Data provides an attractive option for tapping into the enormous amount of data that are generated daily but unused while at the same time we complain of lack of data to inform decisions. The Caribbean region needs to embrace the Data Revolution for Sustainable Development and put policies in place to facilitate the use of Big Data in official capacities.

Unemployment data is one of the critical macroeconomic parameters that are routinely reported by only a few countries and some with long lags. How will we then pursue the goal of promoting full and productive employment and decent work for all if we are not certain how many people need work or the information is only made available after these person had emigrated? If Big Data from search engine results would allow us to predict the unemployment rate months or years before official statistics are produced, policy interventions could be put in place in a more timely fashion.

Similar analogies could be made for the use of Big Data from SMS in furthering the goal of ensuring healthy lives and promoting well-being for all ages or from GPS data in realising the goal to make cities and human settlements inclusive, safe, resilient and sustainable. The 2030 Agenda is upon us and the Data Revolution for Sustainable Development is already underway. Now is the time to get on board and the region should put policy measures in place to facilitate the use of Big Data in official statistics. ■

***Abdullahi Abdulkadri** is Professor of Applied Economics in the Department of Economics, UWI, Mona*


Committed to You...
The NHT is a symbol of growth and development; a home-grown institution which knows the housing needs of its customers, and how best to satisfy them.
That's why we have loans to help you:
✓ buy a NHT house or serviced lot
✓ build, buy or repair your home
✓ buy solar energy systems for your home
...committed to Jamaica.
National Housing Trust
...the key to your home
www.nht.gov.jm 1-888-CALL-NHT (2255-648)


INSURE YOUR CAR WITH US TODAY AND BE AUTOMATICALLY ENTERED INTO OUR
GK INSURANCE
ULTIMATE EXPERIENCE PROMOTION
TRIP FOR 2 TO RIO DE JANEIRO, BRAZIL
4 NIGHT STAY FOR 2 AT THE HYATT ZIVA ROSE HALL
TRIP FOR 2 TO ATLANTIS, BAHAMAS
5 DAY TRIP FOR A FAMILY OF 4 TO DISNEY WORLD INCLUDING STAY AT A DISNEY RESORT
4 NIGHT STAY FOR 2 AT SANDALS WHITEHOUSE
CARIBBEAN CRUISE FOR 2
Entry Requirements: Must purchase a new motor insurance policy or renew your existing motor policy between December 1, 2015 and June 30, 2016 via www.gkgonline.com, any of our 6 branches, your Broker or Agent.
*CONDITIONS APPLY
Please visit www.gkgeneral.com for full rules.
Authorized under section 58(3) of the Betting, Gaming & Lotteries Act.
GK GENERAL INSURANCE COMPANY LIMITED
VALUE Rewards
1-888-429-5454 www.gkgeneral.com @GKGIC @GKGICja /GKGICJA
6 branches - New Kingston, Sovereign, Downtown, Portmore, Mandeville and Montego Bay
Caribbean Airlines

ECONOMY & FINANCE

FINANCIALISATION OF ECONOMY UNDER IMF REFORMS

UNDERMINING ECONOMIC GROWTH

Any analysis of the Jamaican economy would highlight a number of interesting paradoxes which would underscore the complexity of its social and economic configuration. The structural nature of the economy exposed the country to the brunt of the global depression in 2008, with the slowdown in economic activities in Europe and particularly the United States having a significant impact on economic activities in the country. In 2008 countries throughout the region began to experience drastic decline in growth rates; Jamaica suffered dramatically with tourism arrivals falling, affecting our foreign exchange earnings, and capital flow declined resulting in decline in the country's Net International Reserves.

Danny Roberts

By 2008-2009 the country's debt to GDP ratio stood at 126.7 percent, the unemployment rate was measured at 10.1 percent in January 2008, inflation stood at 16.8 percent, an estimated 12.3 percent of the population was living below the poverty line, the public sector wage bill stood at 11 ¾ percent of GDP, and the economy declined by 0.7 percent in 2008 and 4.4 percent in 2009 In fact, the country recorded an average growth rate of about 2.0 percent in three of the ten five-year period since Independence in 1962, according to Professor Alvin Wint in a 2013 Jamaica Observer article. But even despite what would amount to anaemic growth, there were periods during the 1990s of significant reduction in the poverty rates.

The serious impact on the Jamaica economy arising from the ongoing global economic and financial crisis prompted the Government of Jamaica, in a letter dated January 15, 2010 to the then Managing Director of the IMF, Dominque Strauss-Kahn, to indicate that "the high debt levels and limited access to financing have left us [Jamaica] no other option…" but to seek financial support from the Fund in order "to restore macroeconomic stability and create conditions for strong and sustained growth…" so as to enable the country to benefit from the recovery in the global economy.

Jamaica's previous relationship with the IMF ended in 1992, at a time when the country begun witnessing the acceleration of the process of structural adjustment of the economy, the liberalisation of the financial sector, market based instruments of monetary management and the freeing up of the financial market. The economy barely grew during this period, recording a 2.0 percent growth in 1993 followed by three consecutive years of negative growth from 1996 to 1998, with the goods and export services as a share of GDP declining by almost 30 percent.

THE PROCESS OF FINANCIALISATION

The significant role both the financial and capital markets played in the regulation of the economy over the last 20 years, has led to a process of financialisation. This process has been described as one in which the increasing roles of financial institutions and the financial market have had a remarkable influence on the operations of domestic and global economies. Generally it is said that financialisation results in the transfer of income from the real sector to the financial sector and increases income inequality and wage stagnation. Tomaskovic-Devey, (Institute for New Economic Thinking, June 2015) argued that recent research in the US found that increased financialisation can harm economic growth in developed economies, and that the real losers from this trend are the workers through reduced wages, and lower employment, and the economy through lower capital investment and falling tax revenues. And Levy-Orlik (2015) observed that "Latin American countries modernised their financial sector at the expense of restructuring their productive sector to activate their export sector and depended on external demands…" including a reliance on foreign capital inflows.

Here in Jamaica the impact of the financialisation of the economy is evident in the disproportionate income derived from the financial market as a percentage of GDP. While manufacturing, for example, has shown a decline, with their share of value added as a percentage of GDP (constant prices) moving from around 12.7 percent in 1996 to 8.4 percent in 2014, the financial sector has been growing. Since the 1990s the sector has grown tremendously, with a growth rate of 11.5 percent over the last decade and posting of increased revenues year after year. Despite this the Jamaican economy experienced negligible growth.

> Generally it is said that financialisation results in the transfer of income from the real sector to the financial sector and increases income inequality and wage stagnation.

Some critical labour market indicators to spur growth—for example, productivity, wage levels and employment – have performed poorly. Productivity levels remain dismally low while wages have remained largely stagnant, and in some cases have declined. The average weekly earnings for persons in large establishments increased by 10.8 percent between 2010 and 2013, while the accumulated rate of inflation for the period December 2009 to December 2013 was 40.1 percent, representing a significant decline in real wages. Unemployment has fluctuated between 12 percent and 16 percent over the last decade. According to Statin, the unemployment rate in April 2015 was 13.2 percent, representing a significant decline from the 16.3 percent recorded in April 2013.

The poor regulation and management of the financial sector led to the financial crisis of 1995-96, where the economy absorbed debt amounting to 44 percent of GDP in an effort to bail out the sector and protect depositors. Most of the country's debt is now held by local creditors at interest rates higher than that of foreign creditors resulting in the country's domestic interest payments being much higher than foreign payments (COHA, 2006).

NEGATIVE IMPACT ON THE REAL ECONOMY

The move from the 'real' to the 'fictitious' economy through financialisation has generally shown an increase in the profit share of the economy to the capital market financial system, rather than trade and production with long term consequences for sustainable growth, ▸▸

(Martin, Rafferty and Bryan, 2008). This 'gravitational shift' - described as such by Freeman (2010) - from industrial to financial capital has fitted into the IMF's policy of neoliberal globalisation. Garfield Edwards, in a Jamaica Observer article dated June 11, 2013 lamented the fact that the IMF Agreement places no emphasis on manufacturing as one of the areas of economic growth. He noted that "the omission of the manufacturing sector from our primary growth strategy is unbelievable, given the contribution being made by this industry to our economy."

As much as financialisation is less likely to achieve growth than say, manufacturing, and the Agreement emphasises the former rather than the latter, the current IMF Agreement has a growth strategy component which notes that the government is "committed to implementing a growth strategy built on time-bound fiscal consolidation and structural reforms." These, it is argued, will "reduce impediments to growth…" and facilitate opportunities for strategic investments. But the fiscal consolidation and structural benchmarks, which both the Government and the IMF say are on track after three years, are certainly not aiding the strategic objectives of the four-year programme to achieve significant GDP growth, increased productivity and improved per capita income.

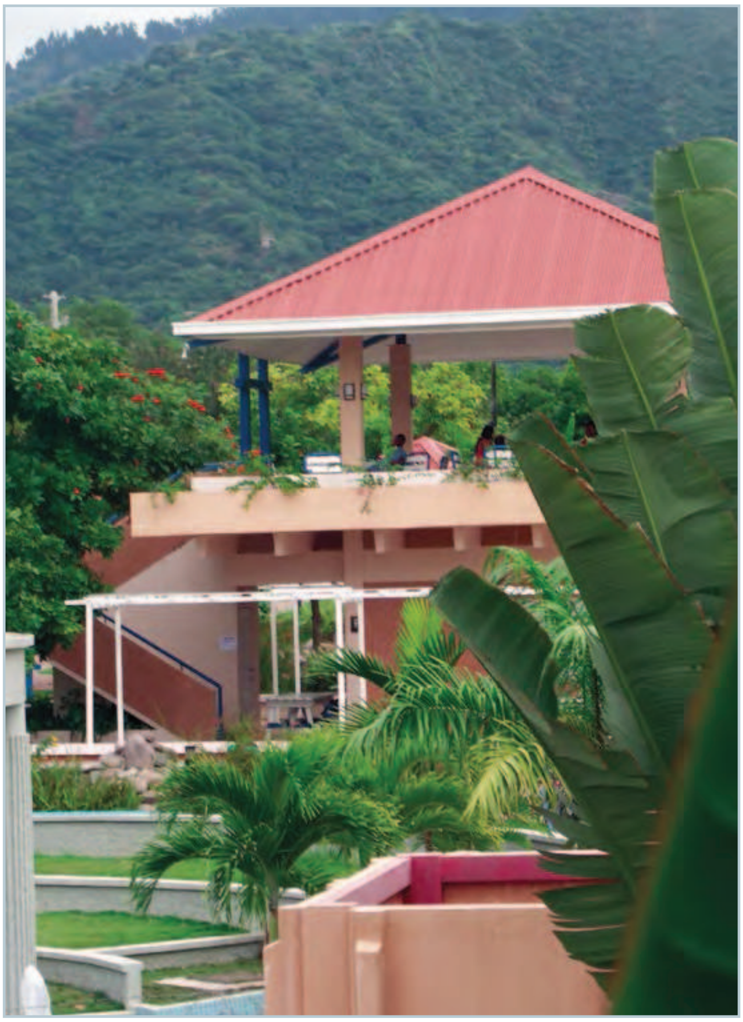
The truth is the IMF's role in growth and poverty reduction over the years has been shown to be wanting. Graham Bird in a 2004 paper on 'Growth, Poverty and the IMF', concluded that while there are counter factual problems in assessing the impact of the IMF's programmes on growth and poverty, the consensus is that "they apparently have little significant impact on inflation and seem to have a negative impact on investment and economic growth," although they tend to have a positive impact on balance of payments. He concluded that this negative impact on growth is bad news for poverty.

The Global Issues website criticized the Structural Adjustment Policies of the Fund as fixed to ensuring debt repayment and economic restructuring in a way that "requires poor countries to reduce spending on things like health, education and development, while debt repayment and other economic policies have been made the priority." In effect, "the IMF and the World Bank have demanded that poor nations lower the standard of living of their people."

> The IMF's policies have not been associated with any improvements in the critical areas of economic growth, productivity improvements or job creation, which leaves us with little choice but to seek a review of the programme

The financialisation of the Jamaican economy has certainly shifted emphasis from the real sectors, and has to be seen as playing a contributory role to the lack of growth. The IMF's policies have not been associated with any improvements in the critical areas of economic growth, productivity improvements or job creation, which leaves us with little choice but to seek a review of the programme. ■

__Danny Roberts__, is the Head of the Hugh Lawson Shearer Trade Union Education Institute at the Consortium for Social Development and Research, Open Campus, UWI, Mona




DISCOVER
the key to your wealth here.
DREAM
IDEA
PLAN
ACTION
SUCCESS
FIRST CLASS
ACCOUNT
Earn more with a safe, attractive First Class Account!
Let's start the conversation on how to save for success.
Jamaica National
BUILDING SOCIETY
WE'LL HELP YOU FIND A WAY!
1-888-GET-JNBS www.jnbs.com
1-888-438-5627

ECONOMY & FINANCE

JAMAICAN ECONOMY BENEFITTING FROM LOWER OIL PRICES

Decline in oil prices for longer than expected have, by and large, positively impacted the Jamaican economy: Financial disclosures for several companies at the end September quarter highlight the benefits of lower electricity prices to their operations; some poultry producers have announced price reductions for their protein products; transportation costs have fallen; and inflation has held steady at 1.8 percent for the 12 months to the end of September. How and when the oil market will re-balance? Is this a new low normal?

Dashan Hendricks

The price of oil hasn't played to expectations in 2015. At this time, last year, the forecast was for oil to fall below $50 per barrel, before rising to around $60 by the middle of this year and then stabilising around that price. That hasn't happened.

The price of oil, near $120 a barrel in June last year, collapsed to lows of around $40 a barrel in September largely due to weak demand, a strong dollar and booming U.S. oil production, according to the International Energy Agency (IEA). Also, OPEC's reluctance to cut output has been seen as a key reason behind the fall. At the end of October 2015, that price had declined to $46.14, a 13.4 percent drop from the start of the year.

So what happened? Why has the price of oil not lived up to expectation? The answer varies but still comes down to classic demand and supply conditions. Oil supply at 96.6 million barrels a day in September, was 1mn to 2mn barrels a day above demand. Amid that glut, global demand growth is expected to slow from its five-year high of 1.8 mn barrels a day in 2015 to 1.2 mn barrels a day in 2016 – closer towards its long-term trend as previous price support is likely to wane, the IEA Oil Market Report for October informed subscribers as recent downgrades to the macroeconomic outlook filter through.

The International Monetary Fund (IMF) forecast at the start of the year was that global growth would reach 3.8 percent. However throughout the year, that forecast was revised several times and in October in the latest World Economic Outlook (WEO), the expectation was that the global economy would expand 3.1 percent this year, thus affecting everything including the demand for oil.

Usually, OPEC would have restrained production to prop up prices. This time, the cartel led by Saudi Arabia, did not lead a cut in production to maintain oil prices because doing so in the past, led to lost market share as others simply pumped more oil to fill the gap. It has so far failed to accede to calls from Venezuela and the UAE for production cuts to be coordinated with other producers such as Russia to ensure there is no cheating.

Decline in oil prices for longer than expected, have prompted a broad debate over how and when the oil market will re-balance. Is this a new low normal? The October 2015 World Economic Outlook (WEO) published by the International Monetary Fund (IMF) forecast that oil prices through 2020 will remain below the levels projected a few months ago." Analysts at U.S. bank Goldman Sachs forecast that prices will remain low before reaching the range of $70 to $80 per barrel in 2020.

> Decline in oil prices for longer than expected, have prompted a broad debate over how and when the oil market will re-balance. Is this a new low normal?

On the other hand consultants PIRA Energy Group expects oil to hit $70 a barrel by the end of 2016 and to trade at $75 a barrel the following year. PIRA was among the first oil markets analyst to accurately forecast the decline in oil prices in 2015 even if it was deeper than they had anticipated.

The impact of lower oil prices on the global economy has been mixed. Forecasts that a $10 drop in oil prices leads to a 0.5% increase in global activity have largely not materialised. As the IMF points out "while lower oil prices have supported demand in importers, other shocks have partly offset the effects and so far prevented a broad-based pickup in activity..." Those shocks include greater contraction in oil sector investments and weaker demand in the United States and Japan.

IMPACT ON THE JAMAICAN ECONOMY

In Jamaica, lower oil prices have clearly been a benefit. On the balance of payments side, the fuel bill which in the first seven months of 2014 was U.S. $1,253mn fell to U.S. $758.2mn, a 39.5 percent decline. For this year, I had forecast the bill to decline by U.S. $300mn to U.S.$700mn in 2015 compared to 2014. So far, up to the end of July, the bill has declined by U.S. $495mn.

> Locally, we should see the same average price for oil based products such as electricity and petrol, as we have seen so far this year.

Electricity prices, which depend largely on oil prices, declined by about 21 percent in that same period. At the pump, prices declined by 10 percent despite an increase in the tax on fuel. "Locally, clearly we benefitted from that (lower oil prices) in terms of the import bill, which was passed on in electricity prices. In the petroleum sector, we have not seen an equivalent drop" said Chris Zacca, a member of the government's Electricity Sector Enterprise Team (ESET), a body set up in Jamaica in 2014 to procure new electricity generating capacity for the country at competitive prices.

Looking ahead, Zacca said his best guess is that prices in 2016 "will fluctuate around where it is now. The demand side is not strong because of slow growth in China and even though U.S. shale producers are hurting, production in that country has not fallen significantly to ▸▸

make a play on global prices. Locally, we should see the same average price for oil based products such as electricity and petrol, as we have seen so far this year."

The Bank of Jamaica has largely been shy in making a definitive forecast on oil prices for next year, but acknowledged that prices in the range "$45 to $55 are unsustainable for an extended period." It has however purchased hedges for the country with a strike price of U.S. $66 to U.S. $67 per barrel for the period to the end of December 2016. This suggestsy that the BOJ believes oil will exceed those prices in that time frame; but the IMF in its latest review of the Jamaica's four year Extended Fund Facility, EFF, said "under current WEO oil price forecasts, the options are unlikely to be triggered", meaning prices are likely to remain below those levels.

The impact that will have on inflation is profound. In a country used to rapidly increasing prices, inflation has held steady at 1.8 percent for the 12 months to the end of September already. The longer term trend of the impact oil will have on inflation in Jamaica however will have to do with the change electricity generation is now undergoing with respect to changing the fuel used to produce electricity away from heavy fuel oil and diesel to natural gas and renewables. Converting the Bogue Power Plant in St James to using gas is a significant step to maintaining lower electricity prices, but with oil prices at the level it is now, the savings for consumers will not be significant. However, it and the proposed new gas fired plant at Old Harbour will bring greater stability in prices for the long term. Prices will remain stable even if the price of oil rises again. It is for this reason why Jamaica, being the first non-NAFTA country to receive U.S. gas is a great deal.

But the impact of the lowering in oil prices to the consumer has been mixed: Electricity prices which are largely influenced by the price of oil, have gone down an average 30 percent; petrol prices have dipped to 8 month lows despite the imposition of a higher tax rate on the fuel in early 2015. Without that higher tax rate, the price of petrol would be close to its lowest for the year. In any case, petrol is still down 23 percent since its peak in June last year.

What is charged for petrol at the pump is however still a source of contention. Dennis Chung, the CEO of the Private Sector Organisation of Jamaica (PSOJ) said, "[W]e do not have confidence that Petrojam is pricing in a way to pass savings to consumers (and that) has slowed down possible economic activity."

Meanwhile, Petrojam has been cutting prices more aggressively in the face of heightened competition from fuel retailers such as RUBiS and Total. Jamaica's Minister of Energy Phillip Paulwell highlighted that issue recently while praising the competition for helping consumers and promised to issue more licences to anyone with pockets deep enough to enter the petroleum importing and retailing market.

> The longer term trend of the impact oil will have on inflation in Jamaica however will have to do with the change electricity generation is now undergoing with respect to changing the fuel used to produce electricity from natural gas and renewables.

IMPACT ON FOOD AND TRANSPORTATION

At the same time, a slew of companies making financial disclosures for the end September quarter, have highlighted the benefits of lower electricity prices to their operations. Some such as poultry producers, Caribbean Broilers and Jamaica Broilers; have announced price reductions for their protein products citing the lowering of oil prices and the impact on their operational costs. Transportation costs have fallen and the fuel surcharge on airline tickets reduced or eliminated. Even the cash strapped Jamaica Urban Transit Company (JUTC) has indicated that it is reviewing its prices with a view to reducing the cost of using its service in early 2016.

On the other hand, many businesses have withheld passing off savings to consumers in the form of lower prices for their products. Businesses have instead held prices to recoup years of declining margins which at least means no price increase. The impact is shown in inflation rates which at the end of September was 1.8 percent for the previous 12 months.

Despite these, the forecast jolt lower prices should give to consumer spending has not materialised. That is largely because of a number of things including depressed disposable incomes squeezed by years of taxation and depreciation. Consumers have not decided as yet whether they should treat the reprieve as permanent.

The leadership on this issue will have to come from the central bank and its monetary policy actions. The frequency and size of cuts to its indicative rates will send a signal to the market over the direction that it expects prices to head. Lower interest rates would signal an expectation that the central bank believes that inflation will continue to hold close to current levels in the near future. It is how much of this signal transmits to intermediaries and their response to consumer demand that will help to bring the jolt the economy can get from lower oil prices. ■

***Dashan Hendricks** is the business editor of the RJR Communications Group*

TECHNOLOGY FOCUS

BIG DATA 101

DEMYSTIFYING THE ENABLING TECHNOLOGIES

Although the Big Data hype has recently invaded mainstream media and popular culture, Big Data has been on the technology radar for some time now. It's one of those terms that is hot and cool, and means different things to different people. While defining big data is in some ways minimizing its scope and scale, here are a few different ways of looking at it. One way to look at it is to examine the nature of data that are collected – its size and complexity. Another way is to look at the target population we are trying to represent. Yet another way is to look at the technologies that support it. It's not that we've not had to contend with large datasets in the past. It's also important to address the issues of validity as we extend a sample's interpretation to a population. However, all these concepts have only been made possible because we now have access to cloud computing. So, let's begin there.

Sameer Verma

In the mid-90s we would only look to a mainframe for any kind of large scale computing jobs. That changed when we got distributed computing over fast networks, whereby we could leverage several simpler computers to solve a complex job. It became the *de facto* method to employ large number of *"garden variety"* computers that would work together in a group to break down massive problems into smaller bite size chunks and solve them simultaneously. Advent of cloud computing gave this approach a boost because one did not have to own thousands of computers to crunch large data sets. Instead, one could lease the machines as and when needed.

In the mid-90s we would only look to a mainframe for any kind of large scale computing jobs. That changed when we got distributed computing over fast networks, whereby we could leverage several simpler computers to solve a complex job.

MapReduce is one technology that features heavily in this space. MapReduce is an approach to manage and process large data sets in a distributed manner. This technology is in fact two techniques combined. There is the Map part that maps the tasks onto multiple nodes (computers) for processing, and the Reduce part that subsequently crunches the data to yield descriptive statistics. Together, MapReduce allows us to manage and process large data sets. Google is credited with bulk of the early work done on MapReduce, although in its own proprietary domain. The Google search engine employs MapReduce to process xxxbytes (a very large number) of data per minute on clusters of thousands of commodity-class Linux PCs. Nutch was one of the first projects to implement MapReduce as an open source project. A fair bit of this approach then found its way into Hadoop (also open source), a project that allows for managing the data through a distributed filesystem. Hadoop is by far the most widely used MapReduce platform. With the introduction of cloud computing, those thousands of nodes needed to run MapReduce could now be leased from Amazon, HP, Microsoft or any other cloud provider. One would simply pay for the duration of running the nodes in order to crunch large data sets.

DATABASES

Now, let's switch layers to see what kind of database technologies are needed in this context. Traditional database technologies revolve around the concept of relational design with multiple tables and SQL to stitch it all together as and when needed. This works great and continues to do so for large transactional jobs such as those at banks, hospitals and universities. However, with systems such as those powering social media sites, where near-real time processing is important, we have seen a shift in the kind of data collected and analyzed. Imagine looking at a tweet from someone and clicking Like or Retweet. That kind of an activity produces a key-value pair type data where the Like or Retweet is paired with an identifier key. *So, a Retweet may look like* ***UserMeRetweet: https://twitter.com/UserMe/status/12365478912***

This is sometimes called clickstream data. This kind of data produces a single table with two columns, with several million rows. Features typically found in a relational database such as consistency, durability, etc. are usually not implemented in the database technology. Instead, these have to be managed elsewhere. Such an approach makes this kind of a database very lean, although the problems mentioned do have to be addressed elsewhere. This method is quite different from the one that employs several tables, with tens of columns and several million rows. SQL allows one to search and stitch data together. With clickstream, we are looking for aggregates, but really, there is nothing "relational" about it. So, we have different database technologies for this kind of an operation. These databases are popularly known as NoSQL databases. Several technologies exist in the field, each with different approaches to solving the problem of scale, and managing ACID compliance to some degree. MongoDB, Cassandra, CouchDB, Memcached, BigTable are to name a few.

> Increasingly, due to technological advances, we now have situations where we do in fact have access to the entire population. The need to sample randomly or otherwise has diminished

Another technology that has found its way into NoSQL databases is Javascript Object Notation (JSON) serialization. This is an ▸▸

approach to address the structure of data and placement by serializing the data. Given the heavy use of Javascript in web development, both on the client side and the server side, JSON comes as a natural fit for NoSQL databases.

> Big Data presents enormous opportunities for increased operational efficiency, greater customer intimacy and improved service delivery

STATISTICS

Switching gears from the technology, let's take a look at the basics of the data crunching itself. Recall your basic probability and statistics class back in college and you would remember the importance of random sampling, normal distribution and the validities of studies based on data samples. Increasingly, due to technological advances, we now have situations where we do in fact have access to the entire population. The need to sample randomly or otherwise has diminished. We also have the technology to crunch it all in one go, and in near-real time. This leads to a marked shift in analytics where we no longer need to take a sample and draw inferences. We can use the entire population data and be descriptive.

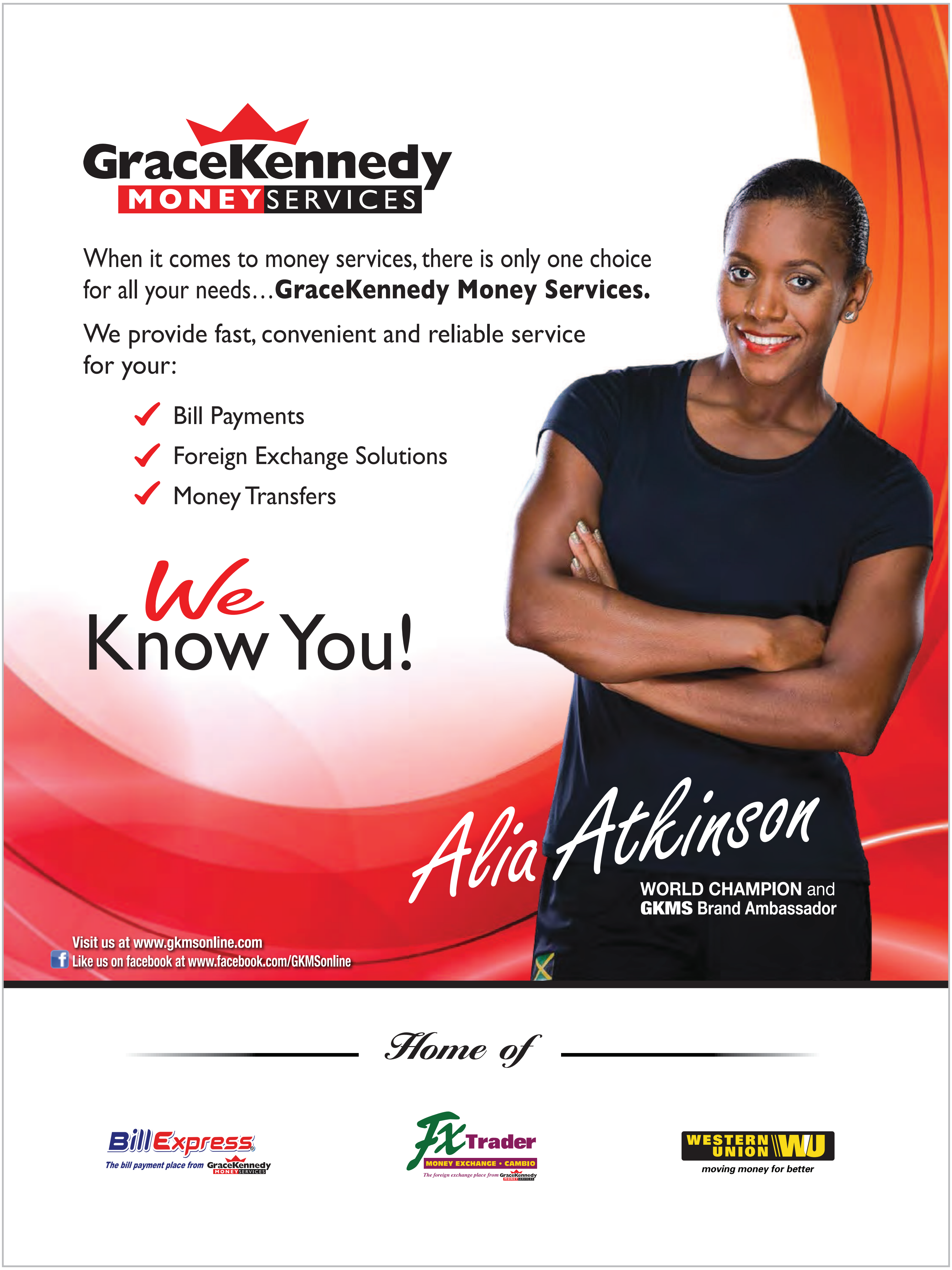
Clickstream data, particularly in social media context tends to be for the entire population. For instance, at any given point in time, Twitter has access to all its clickstream data of Likes, Retweets, Quotes, Hashtags and Follows. They have NoSQL tables on the collective sentiment of the Twitterverse. They can slice it many different ways and tell you what's trending, what's related and so on. All we need here are the descriptive statistics and not much else.

LEVERAGE

So, what does this all mean for businesses? Big Data presents enormous opportunities for increased operational efficiency, greater customer intimacy and improved service delivery. Consider for a moment, how Amazon.com determines their customer demographics and preferences. They don't need to design a representative sample and conduct a survey, they simply analyze the behavioural, attribute and transactional data from their eCommerce site to know who their customers are, what they like, and what they are likely to purchase next.

The technology is all there – the databases, the networks, the cloud – and it is very accessible and affordable even for the smallest businesses. Data can be stored and processed in more timely and meaningful ways and external data sources, such as social media are readily accessible. However, what really determines which technologies and techniques to use is still based on the nature of data and what you intend to do with it. Statistics 101 still reigns supreme. ■

Sameer Verma is *Professor of Information Systems at San Francisco State University*


GraceKennedy
MONEY SERVICES
When it comes to money services, there is only one choice for all your needs…GraceKennedy Money Services.
We provide fast, convenient and reliable service for your:
Bill Payments
Foreign Exchange Solutions
Money Transfers
We Know You!
Alia Atkinson
WORLD CHAMPION and GKMS Brand Ambassador
Visit us at www.gkmsonline.com
Like us on facebook at www.facebook.com/GKMSonline
Home of
BillExpress
The bill payment place from GraceKennedy MONEY SERVICES
FX Trader
MONEY EXCHANGE • CAMBIO
The foreign exchange place from GraceKennedy
WESTERN UNION WU
moving money for better


EASY
TAKE ON THE WORLD
Life just got easier with the
New and Improved Motor Max
No Fault Discount
Unlimited Windscreen
New Vehicle Replacement
Rental Benefit
Competitive Pricing
BCIC
An affiliate of VICTORIA MUTUAL
BCICJAMAICA
BCICJAMAICA
BCICJAMAICA
1-888-BCIC-INS (2242-467)
www.BCIConline.com

UWI
MONA CAMPUS
JAMAICA, WEST INDIES

Appointment
Patrick Hylton, CD

The Vice-Chancellor, Professor Sir Hilary Beckles, has announced the appointment of Mr Patrick Hylton Group Managing Director of National Commercial Bank Jamaica Limited (NCB), as Chairman of the Board of **Mona School of Business and Management,** UWI, Mona.

Mr Hylton was appointed Group Managing Director of National Commercial Bank Jamaica Limited (NCB), Jamaica's largest commercial bank, on December 1, 2004 and has led the organization to achieve record growth in profitability over the course of his tenure.

Since taking the helm, Patrick Hylton has effectively led the company to the achievement of local and international recognition including Best Commercial Bank, Best Banking Group and Best Investment Management Company. Under his leadership, the Bank has diversified its portfolio and expanded into regional markets with an aspiration to become the premier financial institution.

His ascent to national and international prominence began years earlier when he was appointed a leading role by the Government in the restructuring of the Jamaican financial sector during the mid-1990s. His successful completion of that undertaking culminated in the national award of the Order of Distinction, Commander Class, being bestowed on him by the Prime Minister and Governor General of Jamaica in 2002.

Complementing his strategic business acumen and an empathetic but firm leadership style, are his academic achievements as an Honours Graduate in Business Administration and as an Associate of the Chartered Institute of Bankers (ACIB) London.

He is a Past President of the Jamaica Bankers' Association and in addition to being a Director of NCB and Advantage General Insurance Company Limited, he is the Chairman of Harmonisation Limited, NCB Capital Markets Limited, NCB Global Finance and NCB Capital Markets (Barbados) Limited.

Mr. Hylton also sits on the oversight committee appointed to monitor the implementation of Jamaica's programme with the International Monetary Fund (IMF). He sits on several boards including Massy Holdings Limited a Trinidad based conglomerate and the Caribbean Information and Credit Rating Services (CariCRIS).

He is an avid reader and sports enthusiast with track and field holding a special place.

UWI
Inspiring Excellence, Producing Leaders
www.mona.uwi.edu

Mr Patrick Hylton, CD, Group Managing Director of National Commercial Bank Jamaica Limited, (NCB)

MSBM LAUNCHES FINANCE LAB

1.

2.

3.

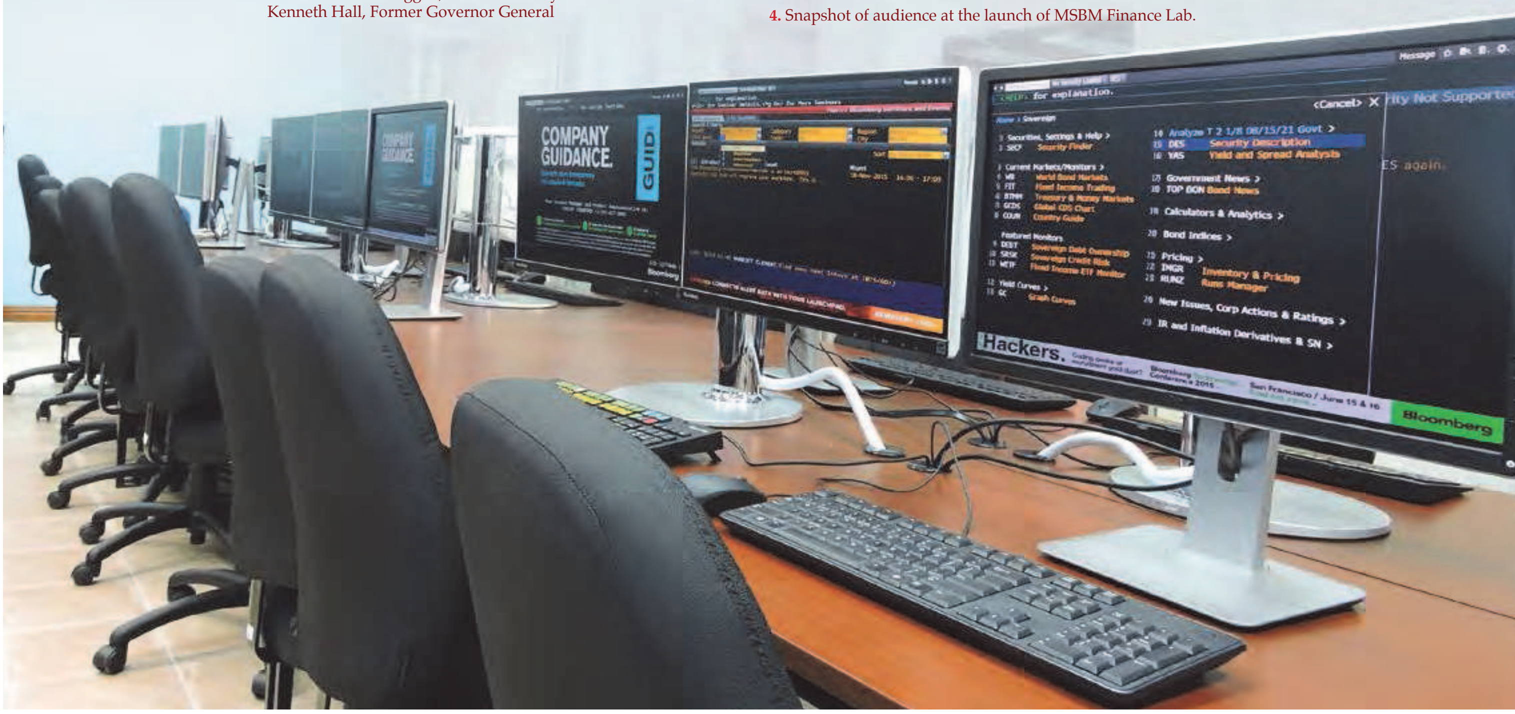
4.

1. (L-R) Patrick Hylton, Group Managing Director, NBC and MSBM Board Chairman; Dennis Cohen, Deputy Group Managing Director, NCB; Marlene Street Forrest, General Manager, Jamaica Stock Exchange; Professor Densil Williams, Executive Director, MSBM; Professor Evan Duggan, Dean – Faculty of Social Sciences and Sir Kenneth Hall, Former Governor General

2. Professor Densil Williams, Executive Director, MSBM welcomes audience at the launch of the MSBM Finance Lab on October 26, 2015.

3. Executives engage in conversation after viewing the MSBM Finance Lab.

4. Snapshot of audience at the launch of MSBM Finance Lab.



To help bridge the gap between what its students are taught in the School and complex financial data they are expected to interpret in the world of work, the Mona School of Business and Management (MSBM) has introduced stock trading as part of the course of study. The vehicle is the recently launched University Finance Lab, the first in the Caribbean region.

Executive director of MSBM, Professor Densil Williams says the university has already invested $22 million in the state-of-the-art-facility which allows access to securities trading from the top 50 global exchange virtual platforms - through its partnership with Bloomberg, and the Jamaica Stock Exchange.

"Basically what we have done is gain access to major stock markets across the world and the Bloomberg terminal which is a data warehouse that is used to look at things like bonds, stocks and commodities and all other data related to trading on the capital market," Professor Williams told an audience of financial leaders, academics and students during the launch at the MSBM North Courtyard, on the Mona Campus of the UWI.

"The lab is one of many initiatives used by MSBM to fulfil key strategic objectives of producing employable graduates; and to make the organisation an even greater contender in its international markets," he noted.

The lab will primarily focus on facilitating effective business education of MSBM students but will also cater to unenrolled individuals through a series of short courses and is being developed as a method of recouping a portion of the initial investment, according to the MSBM head. University of the West Indies (UWI) Mona Finance lab is a global virtual trading branded site that allows for live data feed from the Jamaica Stock Exchange. The Lab is expected to host roughly 30 students for each training session. While the project was financed by the university, Bloomberg has assisted the institution with a special education deal of three additional licences with each purchase.

Bloomberg currently provides over 325,000 subscribers with stock market information, including volatility, global benchmarks, credit indices, trading platform, probability of default, major indices and major market indices.

Commenting on the significance of the initiative, chief finance officer and deputy group managing director of the National Commercial Bank, Dennis Cohen said: "Bloomberg puts Jamaica and NCB on the international capital markets. It provides a showcase for our bonds, equities, corporate and our research," he reasoned. "The technology is all about being analytical, it helps to create that mind-set shift and students exposed to this tool will be exposed to the best in class financial market data analytics tools and techniques."

General Manager of the Jamaica Stock Exchange (JSE) Marlene Street-Forrest expressed gratitude for the initiative while noting that the virtual platform will assist the company in reaching its target audience. ■