

cost-effective social media methods. Every bank should consider upgrading their customer communication management systems to something like what is offered by Genesys as presented at <http://www.genesyslab.com/products/contact-center/overview.aspx>

6. Establish a social media command center: An effective way to demonstrate the benefits of social media is to create a social media command center. It is a whole room dedicated to social media; full of large screens, lots of charts, graphs and verbatim comments, monitoring what's being said about your brand, your competitors and your industry. It becomes a social media insight center, training venue, work place and symbolic representation of an innovative company. It will create an amazing response from staff, directors and customers. The launch video of the social media command center at NAB could serve as an example <http://www.youtube.com/watch?v=1BOKmUDBTR8> where we used the impressive Radian6 supplied by Salesforce.com for social media analytics and insights software.
7. Use social media internally: It's important that social media flourishes amongst your staff. So many banks have a multitude of communication options, most of which are inflexible and unidirectional. The new social media functionality and usability for

enterprises is compelling. It creates more effective and relevant networks within your bank, so that information, suggestions and advice can be more easily communicated. It provides greater opportunity for discussion and debate amongst staff, as well as offering greater flexibility for "at home" or "remote office workers". Yammer, which could be checked out at <https://www.yammer.com/product/> is one of the options for getting your staff connected, solving problems and sharing helpful tips.

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Data Management in the IoT era

By Dr. Riad Hartani, Paddy Ramanathan

The Internet of Things (IoT) by definition encompasses multiple markets, technologies, and disciplines. Here, we look at the changing data processing dynamics driven by the IoT evolution across industry verticals. We analyze its impact on the overall data management value chain, including requirements for cloud migration, big data environments and leveraging of data science models for creation of value added services!

IoT in Context – Five layer functional model

Devices: Sensors, identifiers and gateways are used to collect and convey information. They are designed to meet the application use case requirements. They can range from simple identifiers providing specific information on the object to more complex devices that have the ability to measure (sensors) and process data (gateways). A variety of IoT devices have emerged in various business verticals, with the utility/energy businesses leading the way, followed by devices in the health, transportation, home and finance eco-systems.

Connectivity: Devices can be connected to the network directly or indirectly through other devices (mesh) or a gateway. Connectivity can be through copper wires, OFCs or through a number of wireless mechanisms. These include the traditional 2.5G/3G/4G networks, various local area solutions (e.g. zigbee, wifi) and low power wide area solutions (e.g. weightless protocols) among others.

Applications: They define the device and include all requisite functions



including the hardware and software architecture. IoT Application Stores are emerging for specific industry verticals, with the health wearable devices being a recent example.

Platforms: Devices and connectivity require a platform to provide a service. Platforms are used to provision devices, manage and control them. They are used for billing and fraud detection.

Services: They primarily refer to the IoT service to the end-customer. The service provider leverages all the downstream elements in this value chain: platforms, applications, connectivity and devices. For example: automated automotive diagnostics, medical geriatrics and remote power consumption optimization.

The Data Management Perspective

With the proliferation of IoTs, the demand to scale up, to support the high volume and velocity of data and the type of analytics required including real time analytics, will grow.

The desired goal is to create a solid architecture that is able to provide these optimal functionalities and overlay Data Science applications on it. Highlighted are facets of such architecture:

a. An accelerated and targeted migration to Cloud Models

The existing information infrastructure and analytics engines, used within business verticals aiming at leveraging IoT eco-systems, suffer from a variety of challenges:

- The increasing tie up between the virtualization and IaaS/PaaS environments makes the virtualization strategies very dependent on an optimal cloud migration strategy
- Understanding the still evolving toolsets for monitoring cloud services and diagnostics of distributed software applications and computing processes

b. An accelerated leverage of Big Data processing models

As businesses integrate different components of the IoT eco-system, they need to redesign their IT frameworks, processes and solutions:

- **Data Storage and Warehousing:** The primary requirement is for efficient and real time large-scale data capture. The architecture shall converge on an optimal data warehousing model in terms of cost/performance
- **Optimization of Data Architecture Availability and Reliability:** Frameworks such as Hadoop would form the basis of availability and reliability. Data policies for archiving and querying will ensure the required reliability and disaster recovery
- **Data Management Performance and Scalability:** Cloud based deployments will ensure scalability of the IT and backend architecture. Appropriate big data architecture will provide for

linear scalability and performance

- **Real Time Analytics:** Real-time data processing has to accommodate high velocity data streams and process data in near real time for alerts and analysis. Real time processing systems, using appropriate frameworks will allow for horizontal scaling, large-scale events processing, reliable data management and dynamic events handling

c. A strategic Leverage of Data Sciences for Intelligent Analytics

At the core of the Data Science framework sits the intelligent data analysis component, which leverages an extensive set of machine learning and data modeling techniques. Deep learning and additions to Random Forest and Gradient Boosted decision trees to practical industry problems are some of them. They complement the existing set of machine learning and data mining algorithms. The intelligent data analysis and logic based reasoning techniques have made the big leap from being a research area for a select few applications, to a set of tools, accessible in various shapes and forms to various industry verticals.

IoT intersects with Data – Illustrative Use Cases

Different verticals are witness to aggressive insertion and leverage of IoT components, including mobile Internet, financial applications, healthcare, and online advertising. The focus has been on applying data sciences to large-scale IoT generated datasets.

Financial Services: IoT in financial services is set to reduce the cost of monitoring asset-based lending especially machinery/equipment loans and inventory based financing. With a proper understanding between the lender and lendee, IoT can monitor the functional characteristics of the equipment or provide tracking of inventory. This reduces the cost of monitoring and also the overall risk and enables advance warnings vis-a-vis cash flow that may lead to defaults. Loan recipients could be incentivized with lower rates to facilitate use of IoT sensors. This is similar to how IoT facilitates the efficient management of personal auto loans. IoT can also provide valuable information on driving performance that insurance companies can use to provide discounts.

Industrial Internet: Data generated by wind turbines, jet engines, and MRI machines, holds greater potential business value on a



NEWSBYTES from Africa & The Middle East

- South Africa-based Standard Bank has signed for Fundtech's Global CashPlus liquidity management solution, initially for a local implementation but with the intention to expand the system to as many as 19 countries. The project will coincide with the bank's long-running SAP core system deployment. Extract from IBS Journal News of October 8, 2014
- IMF forecasts show, the UAE economy is set to grow 4.3 percent this year, while Saudi Arabia should expand 4.6 percent. The UAE is benefiting from gains in tourism, retail sales, trade and real estate. Saudi Arabian banks have been bolstered by state development spending. Lenders in the region have also booked

rising fee income from a pickup in mergers and acquisitions and share sales. Extract from the article 'Middle East Banks Emirates NBD to NCB Post Profit Gains' in Bloomberg News of Oct 22, 2014

- A Malaysian subsidiary of South African insurer Sanlam is selling its general insurance business to a unit of Toronto-listed Fairfax Financial Holdings to comply with local law. — Malaysia stipulates that investors cannot operate under more than one life or general insurance license, unless the second is a sharia-compliant Takaful permit. Sanlam already has a general insurance business in the country through its shareholding in Pacific & Orient. Extract from Reuters Johannesburg, December 2, 2014

size-adjusted basis than other types of Big Data associated with social web and consumer internet. The typical use cases are to collect equipment performance data as part of Asset Performance Management (APM). Such data can be organized in the cloud and analyzed to predict breakdowns. Industrial companies can boost productivity by up to 30% through IoT and Big Data based analytics to monitor and manage their assets. A recent example is a Pilot done by Thames Water Utilities Limited in the UK that has deployed smart meters and sensors on its operational assets (pipes, treatment facilities) and developed analytics to predict critical situations such as leaks and adverse weather events. The Water Utility expects to save on scheduled repairs and overall maintenance costs.

Health Care: The greatest potential for IoT is probably in this area. From remote tracking of patients to prediction of serious complications there are numerous applications of IoT supported by Big Data analytics. Asthmapolis has a sensor that snaps on to an asthma inhaler that users can voluntarily opt for to track when and where they

use their inhalers. The data collected is analyzed and presented back to the asthma patients through a mobile app to better understand triggers like pollen counts. The benefit potential is huge with early studies reducing the number of uncontrolled asthma cases by about 50%.

Conclusions

The IoT era has had various false starts, vis-a-vis mass adoption and progression to mainstream applications. The convergence of various trends, innovation in low power and low cost device technologies, scalable network connectivity as well as mainstream cloud and big data processing models, have opened a new window for the emergence of IoT based value added services. We believe that moving forward leveraging data sciences models to enable advanced IoT data analytics will provide the appropriate framework for creation of new services of strategic importance and become a major component of business competitiveness.

Riad Hartani, dual homed in San Francisco and Hong Kong, is a founder of Xona Partners, a venture, focused on investments in fixed and mobile networks. Having previously headed technology functions at Wichorus, Anagran and Caspian (acquired by Tellabs, Saisei and Sable Networks respectively), he has also held senior positions at Nortel and the Canadian Research Labs in Canada, Hitachi Labs in Japan and the French National Research Labs.

A founding member of various startups and advisories in the US, Europe, Asia and the Middle East, Riad's academic track is studded with two engineering degrees, a doctorate in artificial intelligence from the University of Paris, doctoral, post doctoral fellowships from UC Berkeley and an Executive business education from Stanford. He is a writer and a popular speaker and panelist at international events and a lecturer at various universities around the world.

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An Electrical Engineer from the Indian Institute of Technology Kharagpur, with a passion for improving K12 education through technology his current focus lies in leveraging information as a strategic asset.



NEWSBYTES Technology & Markets

- The Australian Payments Clearing Association's (APCA) plan to introduce a new real-time payments infrastructure (NPP) – has finally reached the definitive stage. Fiserv and SWIFT have now officially bagged the twelve-year contract, which is estimated to be worth around AU\$1 billion. Extract from 'IBS Intelligence' December 2, 2014
- As the industry announces cloud-based mobile payment solutions, UL, (a global independent safety science company), launches a test environment (the Collis Host Test Tool) to support the correct implementation of tokenization technology. As with cardholder account data, exchanging messages to generate transactions with

tokens requires correct communication between the issuers, the acquirers and the payment schemes. Extract from Finextra, December 4, 2014

- Responsive email design uses CSS (3) media queries to render 2-3 different layouts that will auto-adjust depending on the size of the screen the email is being read on. In addition, elements such as images, text, colors and buttons can be hidden, changed or reordered based on "class" instructions. While responsive design requires 2-3 different layouts (desktop, tablet or phone), and extensive coding, it only results in one HTML file. Extract from Post Up - Responsive vs. Scalable Design