



# Fintech Innovation Round Table

25 October 2018

The Leela, Mumbai

BRINGING INTELLIGENCE TO YOUR GREAT BUSINESS

Quadratyx is an intellectual property based Deep Analytics & Artificial Intelligence company, that offers innovative Big Data Analytics services and solutions





Dear friend,

I am delighted to welcome you to this very special Quadratyx Fintech Innovation Round Table. I believe it is highly significant for all of us in more ways than one.

There is a silent business revolution underway in Colombia. A beautiful country with amazing people that was in the news for wrong reasons 10-15 years ago is now completely rediscovering itself. Whatever be the metric - infrastructure investments, availability of capable workforce, business-friendly political climate, thirst to be world-class in systems and processes, speed of technology adoption – Colombia fares excellently today. It is important for leading businesses in India to understand this revolution. Who else can make us understand this better than Grupo Bolivar senior leadership, who as a team have centuries of deep experience in Colombian and South American business.

The Indian financial industry, and segments that substantially impact it like Agriculture & Import-Export, have been aggressively reinventing themselves in the past few years, and technology is playing a major role in this transformation. In terms of scale, technical sophistication or complexity, financial solutions being innovated in India are second to none in the world. Learning about these innovations, directly from the leaders at the forefront of this revolution, can be hugely beneficial for our South American friends.

This is a strictly invitation-only event. We have lined up a series of excellent talks exclusively for you today, in an informal and intimate format that is designed to catalyse deeper interactions. Details of all speakers and their talks are included in these proceedings.

Two common threads running through both sides of the table today are Quadratyx and Big Data Innovation Hub (BDIH). Over the years, we have strived to build and deploy at scale fintech innovations, in areas like Artificial Intelligence, Big Data, Cognitive Automation, Chatbots, etc., both in India and South America. We have been working directly and deeply with many people in this room, continually learning, evolving and deploying new ingredients of success, such as GDPR, high-end DevOps, applied R&D and sustainable workforce empowerment. These proceedings are designed to give you a taste for some key Quadratyx solutions and innovations.

With a great big thanks to each person that made today's Innovation Round Table happen, let me wish you all a very insightful learning experience and deeply meaningful interactions this morning.

In pursuit of excellence,

Dr. Sreerama K. Murthy  
CEO & Chief Data Scientist [www.quadratyx.com](http://www.quadratyx.com)



# Fintech Innovation Roundtable

**The Leela, Mumbai  
25th October, 2018**

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|---------------|--|
| 08:00 – 08:10 | <b>Welcome</b><br>Dr. Sudha P Iyer, Director, Quadratyx  |
| 08:10 – 08:40 | <b>Artificial Intelligence – Multiple disruptors under one name</b><br>Dr. Sreerama Murthy,<br>CEO & Chief Data Scientist, Quadratyx                                       |
| 08:40 – 09:10 | <b>Advanced Analytics Journey of a Large Private Bank</b><br>Mr. Balaji Narayanamurthy,<br>Executive Vice President, Axis Bank   |
| 09:10 – 09:40 | <b>Automation in Indian Customs</b><br>Mr. Shrawan Kumar,<br>Additional Director General,<br>Directorate of Revenue Intelligence, Mumbai zone                              |
| 09:40 – 10:10 | <b>Transcending prevalent educational systems to create globally attractive AI professionals at scale</b><br>Dr. Dakshinamurthy Kolluru,<br>President & Co-Founder, INSOFE |
| 10:10 – 10:30 | Networking break – High Tea  |
| 10:30 – 11:00 | <b>The changing face of Indian financial business with the India Stack</b><br>Mr. S. Swaminathan, CEO, Hansa Cequity   |
| 11:00 – 11:30 | <b>Indian agriculture is undergoing a silent technological revolution</b><br>Dr. Rahul Mirchandani, MD & CEO, Aries Agro   |
| 11:30 – 12:00 | <b>Insights into UIDAI – the world’s largest financial inclusion initiative</b><br>Mr. Govindraj Ethiraj,<br>Founder, IndiaSpend.com, FactChecker.in                       |
| 12:00 – 12:15 | Discussion & Closing Remarks   |

# QUADRATYX

## THE POWER OF INSIGHT

Quadratic Insights Pvt. Ltd. ([www.Quadratyx.com](http://www.Quadratyx.com)) is an innovation-driven organisation that has achieved rapid success in Machine Learning, Artificial Intelligence, and Big Data. Quadratyx services include designing & setting up customized big data infrastructures for large enterprises, building sophisticated predictive analytics models, designing solutions with advanced AI and Cognitive Automation technologies, extracting insights from all types of unstructured data, corporate training in big data analytics and developing e-learning modules on these topics.

Quadratyx has established itself as a valued provider across many sectors, like Banking & Financial services, Retail, Manufacturing, Energy, and Government. Quadratyx has provided services to major institutions and companies such as the State Bank of India, Bank of Baroda, HDFC Bank, Axis Bank, Tata Steel, National Payments Corporation of India, CIBIL, Microsoft, Maruti Suzuki, Micromax, DR. Reddy's Labs, Edelweiss, Novartis, Mahindra Home Finance, and Chola MS General Insurance. Quadratyx serves dozens of customers in UK, USA, South America, and the Middle East.

Quadratyx has a strong presence across two continents. The growing realization in South America, particularly in Colombia, that Big Data & AI will be vital to staying competitive and even staying afloat, has enabled Quadratyx to establish long term, cross-continental partnerships. Quadratyx believes that Colombia's geographic location offers a unique advantage. There is a substantial dearth

of AI and Data Science professionals in the United States and in Canada; Colombia's large and bright youth segment can be trained and leveraged for this incredible opportunity. Quadratyx is engaged, through its Colombian counterpart Big Data Innovation Hub, in creating a capable local work force, establishing a globally integrated delivery process, and in rapidly rolling out locally useful AI solutions.

While Quadratyx as a company came into existence in 2014, to directly address the expanding space of AI solutions & empowerment, teams led by Dr Sreerama Murthy and Dr. Sudha have helped a gamut of businesses in applying AI to their practices for over 18 years. Infused with an ambience of human warmth, motivation, inspiration, and excellence, Quadratyx has become the breeding ground for budding leaders. Successful employees at Quadratyx are characterized by passion for their field of work, uncompromising desire to excel, humility and respect for all others in the team. The company believes that "a small band of hard-working, well-intentioned, fearless people can transform the world". The CEO magazine deemed Quadratyx, the best place to work for in the AI segment (2018).

Quadratyx is a rare young company that is well-invested in R&D, University collaborations, international publications, and patents. The Quadratyx R&D team designs and builds vertical-specific, cloud-based advanced AI products and technology accelerators. Quadratyx actively strives to be a thought leader and a formidable IP-centric solutions leader in the AI & ML space. The company

continually strives to outperform itself as an innovation based deep analytics company that offers Big Data Analytics products and solutions. Quadratyx has received the AI Company of the year award (2016), Silicon India.

The company believes that to optimally leverage India's strengths in Mathematics, English and solutions-oriented work-culture, Indian AI Solutions companies ought to have an integrated training competence that enables rapid ramping-up of capable human resources. Quadratyx has offered custom-designed corporate training programs in South America, Singapore, USA, Middle East, and India. Quadratyx has worked closely with the prestigious International School of Engineering (INSOFE) since its inception, in helping offer Carnegie Mellon University certified classroom programs in AI & Big Data Analytics. The Chief Data Scientist of Quadratyx, Dr. Sreerama K. Murthy, has been recognized among the 10 most prominent analytics academicians in India.

Quadratyx is a vibrant member of the Flat World Group, which has a presence in 5 continents and 3,300 employees. Our biggest strength is the 9,000 customers that Flat World has served globally over the last 16 years, with impeccable delivery processes and a "whatever it takes" attitude to exceed customer expectations. We take pride in the fact that most of our customers rely on us for years with repeat engagements. Flat World and Quadratyx are working hard together to rapidly leverage our synergistic strengths to be a significant global player in the AI era.

## WELCOME

Dr. Sudha has two MS degrees in Molecular Biology and Genetics and a PhD in Health Education. After spending 13 years in the US studying and working in institutions like The Johns Hopkins University and Sinai Hospital, she returned to India to be a serial technopreneur for the last 19 years. She has been a pioneer in blended e-learning, training and skilling in India. Sudha's latest venture is Quadratyx, a Big Data, AI and Automation company, which she co-founded in 2014.

As a member of the Governing Council of Young Indians, (Yi, CII), Dr. Sudha served as the National Chair for Youth Affairs for two and a half years. She conceptualized and rolled out the Yi Bridge program, working with students in schools and colleges in the country. She was also the

Yi National Chair for IT, Health and Rural Initiatives. As head of Rural Initiatives, she rolled out a career counseling program for rural students.

Dr. Sudha is a Fellow of the Inaugural Class of Aspen India's Leadership Initiative and a trained moderator for Ananta Aspen. She is a co-moderator for the prestigious ASEAN India Leadership Fellowship. Dr. Sudha has trained several leaders from across the world in values-based leadership and globalization in the last 10 years. She has been practicing yoga and meditation for over 15 years. She is interested in alternate forms of health care and is a certified acupressure therapist. She is fluent in seven languages.



**Dr. Sudha Iyer ,**  
Director & Co-Founder,  
Quadratic Insights Pvt. Ltd.



# MULTIPLE TECHNOLOGY REVOLUTIONS UNDER ONE NAME – ARTIFICIAL INTELLIGENCE

**Dr. Sreerama KV Murthy,**  
CEO & Chief Data Scientist,  
Quadratic Insights Pvt. Ltd.

## Abstract

In the 30 years of my journey in AI, I have seen it taking different forms and embracing different objectives.

Imitating human intelligence, or, more generally, the intelligence of living things, was where “Artificial Intelligence (AI)” started. This goal is fascinating not only because it helps us understand ourselves better, but also because some aspects of biological intelligence appear so much more sophisticated, so far away from what current hardware and software can do. As data and computation became more cheaply available, “Intelligence Augmentation (IA)” applications superseded conventional AI applications. These take forms like search systems, language translation, and question-answering systems. Some of the most practical machine learning and predictive tools we see in business today fall in this category of IA.

The third category of disruption is emerging, which can be called “Intelligent Infrastructures (II)”. These bring together sensor-based continuous data collection, operational optimization, and real-time intelligent interventions.

What we are today loosely referring to under the single head of AI is actually a combination of AI, IA and II defined above.

It is important to clearly understand these categories of disruption, to know the limitations of each of these solutions, to demystify the “magic” that AI can and cannot do for your organizations. I will strive to illustrate these disruption categories with multiple real-world examples, especially from the financial domain.

## About the Speaker

Dr. Sreerama KV Murthy received a PhD, in Data Mining, and Machine Learning in 1995 from the prestigious Johns Hopkins University. Prior to that, Dr. Murthy completed a Master’s thesis in Next Generation Expert Systems from IIT-Madras Computer Science.

Automatically building mega-catalogs from Hubble Space Telescope images was Dr. Murthy’s PhD, thesis. The software he designed is used till date in scores of countries. His paper on the topic continues to be a top-cited paper in the area of Decision Trees and Machine Learning.

In the past 25 years, Dr. Murthy worked for world-class research labs such as Siemens Corporate Research - Princeton, IBM Research - Delhi; and National Center for Software Technology

(now CDAC, Mumbai). He also has been instrumental in setting up three startup companies that drove innovation in AI & data mining in the areas of vocational skilling, healthcare, and supply chain management.

Dr. Murthy currently is the CEO of Quadratyx, a company that offers custom solutions, corporate training and consulting services in AI, Big Data, Machine Learning, Cognitive Automation, Text & Image Mining, and Predictive Analytics.

Dr. Murthy has 8 issued US patents, over a dozen patent-pending innovations, and scores of international publications, all in the area of AI and Data Science. His team has done seminal work in learning analytics. Dr. Murthy has been a Principal Advisor & Mentor for the International School of Engineering since its inception. Dr. Murthy is a sought after CXO-Mentor, and advises multiple Governmental and policy bodies in matters related to AI and Big Data. He is one of India’s 10 most prominent analytics academicians and big data rock stars.

# ADVANCED ANALYTICS JOURNEY OF A LARGE PRIVATE BANK

## Abstract

Advanced analytics journey of Axis Bank - Driving a culture of data-driven decision making across a large enterprise



**Mr. Balaji Narayanamurthy,**  
Executive Vice President,  
Axis Bank

## About the Speaker

Balaji Narayanamurthy is Executive Vice President and Head of Business Intelligence Unit at Axis Bank. He joined Axis in 2010 to set up the analytics practice for the bank. He has over more than 15 years of experience in the analytics and AI domain in banking.

Prior to Axis Bank, Mr. Balaji worked with Barclaycard, in the US as a Group Director in their credit cards business before returning to India.

Mr. Balaji worked at various roles in the U.S. credit card business of Capital One as a Senior Business Manager. He started his career as a management associate at Citibank India in their transaction banking group.

Mr. Balaji holds a Bachelor's degree in Electronics and Communication Engineering from IIT Chennai and has a Post Graduate Diploma in Management from IIM Lucknow

## Axis Bank

Axis Bank is the third largest private sector bank in India. The Bank offers the entire spectrum of financial services to customer segments covering Large and Mid-Corporates, MSME, Agriculture and Retail Businesses.

With its 3,779 domestic branches (including extension counters) and 12,834 ATMs across the country as on 30th June 2018, the network of Axis Bank spreads across 2,211 cities and towns, enabling the Bank to reach out to a large cross-section of customers with an array of products and services. The Bank also has ten overseas offices with branches at Singapore, Hong Kong, Dubai (at the DIFC), Shanghai and Colombo; representative offices at Dubai, Abu Dhabi, Dhaka and Sharjah and an overseas subsidiary at London, UK.

Axis Bank is one of the first new generation private sector banks to have begun operations in 1994. The Bank was promoted in 1993, jointly by Specified Undertaking of Unit Trust of India (SUUTI) (then known as Unit Trust of India), Life Insurance Corporation of India (LIC), General Insurance Corporation of India

(GIC), National Insurance Company Ltd., The New India Assurance Company Ltd., The Oriental Insurance Company Ltd., and United India Insurance Company Ltd. The shareholding of Unit Trust of India was subsequently transferred to SUUTI, an entity established in 2003.

With a balance sheet size of ₹ 6,91,330 crores as on 31st March 2018, Axis Bank has achieved consistent growth and with a 5 year CAGR (2012-13 to 2017-18) of 15% in Total Assets, 12% in Total Deposits, 17% in Total Advances.



# AUTOMATION IN INDIAN CUSTOMS

**Mr. Shrawan Kumar,**  
Additional Director General  
Directorate of Revenue Intelligence, Mumbai zone



## Abstract

Indian tax departments, particularly Customs, have attempted to automate most of the processes so as to reduce human interface and bring transparency. The whole effort is directed towards promoting ease of doing business, bringing level playing field, and ensuring rule of law through automation and digitization.

This talk would provide insights into platforms such as the Customs platform ICES (Indian Customs EDI System) used by trade for filing Import & Export declarations and clearance of goods by Customs, recent efforts to bring partner government agencies on a single platform SWIFT (Single Window Interface for Facilitating Trade), a system developed to assess risk for interventions RMS (Risk Management System), passenger profiling for advance warning of Passengers of Interest through APIS (Advanced Passenger Information system), and a tool ISS (Intelligent Support System) for generating intelligence.

## About the Speaker

Mr. Shrawan Kumar currently serves as the Additional Director General at the Directorate of Revenue Intelligence, Mumbai zone. He has worked previously as the Additional Director, Directorate

of GST Intelligence, Ahmedabad, Additional Director General, Directorate of Vigilance, Chennai, Commissioner of Customs, Mumbai. His expertise include Intelligence & Investigation work, GST, Prevention of Environmental Crimes, Wildlife Protection, Intellectual Property Rights

Mr. Shrawan Kumar has represented India in innumerable seminars, conferences and workshops on IPRs in Los Angeles, USA; on Post Clearance Audit in Japan; on Border Enforcement of IPRs in South Korea; on sharing of Intelligence in China; on Customs Valuation in Brussels.

Mr. Shrawan Kumar has been instrumental in detecting many landmark cases of evasion of duties of Customs, Service Tax, & Excise; apprehending several narcotics gangs and illegal drug syndicates and registering several cases of money laundering & wildlife crimes. Mr Shrawan kumar is also the recipient of Presidential Award for exceptionally meritorious services on the occasion of Republic Day, 2010.

## Directorate of Revenue Intelligence, Central Board of Indirect Taxes and Customs

The Directorate of Revenue Intelligence (DRI) is an Indian intelligence agency. It is India's chief anti-smuggling intelligence, investigations, and operations agency. DRI works to prevent the proliferation of black money, commercial frauds, and trade-based money laundering.

The Directorate is run by officers from the Central Board of Indirect Taxes and Customs (CBIC) who are posted in its various Zonal Units as well as in Indian embassies abroad as part of the Customs Overseas Intelligence Network. It is headed by a Director General of the rank of Special Secretary to the Government of India.

The Mumbai zone, generates approximately \$8.5 Billion per annum, 32% of the total national revenue collected from customs duties (Statistical Yearbook India 2017).

# TRANSCENDING PREVALENT EDUCATIONAL SYSTEMS TO CREATE GLOBALLY ATTRACTIVE AI PROFESSIONALS AT SCALE

## Abstract

Most organizations are keen to start the AI/ML journey and are committing budgets. But, as the technology hit us fast, most are unclear about how to adopt. In this talk, we will present several roles within an organization and their role in making the AI journey of the organization a success. We will then discuss the prerequisite skills (that must be built) for each of those roles and education models that can be pursued by the organizations to achieve that. We will try to establish that AI today is not to be treated as a technology but, as a powerful method of solving problems. So, like mathematics and general management, it should be studied differently by different roles.



**Dr. Dakshinamurthy Kolluru,**  
President & Co-Founder,  
INSOFE

## About the Speaker

Dr. Dakshinamurthy V. Kolluru serves as President at INSOFE Education Pvt. Ltd. Dr. Murthy has 15 years of work experience after Ph.D. in diverse organizations ranging from Defense Research to web startup and mid-size IT services companies. Over the past few years, Dr. Murthy has been actively teaching Data Analytics to working professionals with a wide range of experience and from diverse industries. He has also been consulting on Data Science projects with companies ranging from Fortune 25 to Startups. In addition, he has been conducting workshops on Analytics both in the USA and India for executives ranging from senior management to mid-level managers to hands-on implementers. During his years of experience as a scientist and entrepreneur, Dr. Murthy has

applied his strengths in logical thinking, math and science to solving industrial and societal problems, designing solutions from fundamentals, identifying, training and motivating high-quality individuals, and to articulating the findings in a lucid manner to all the stakeholders. He has applied these skills in such diverse areas as data analytics, Web 2.0 software development, mathematical modeling of capital markets, e-learning programs for rural students, intercontinental ballistic missile design, etc.

## INSOFE

International School of Engineering (INSOFE) is an Applied Engineering school with an area of focus in Data science/Big data analytics. It is located in Hyderabad in the state of Telangana, India, and Bengaluru in the state of

Karnataka. It opened in 2011. The program is delivered through classroom only sessions and is suitable for students and working professionals. Second, to none, they have a formidable combination of strong industry experience, significant research background, and commendable academic achievement. Thus, making it a pioneer in applied engineering. No wonder that INSOFEans have written books in Big Data and filed international patents. The American IT Magazine CIO.com listed INSOFE's Big data Certification among '19 Big Data Certifications that will Pay off'. The list includes similar certifications from Stanford & Columbia Universities. INSOFE is the only Indian big data certification to feature in the elite list of World's top big data certifications, published by CIO.com on 25<sup>th</sup> October 2017.

# THE CHANGING FACE OF INDIAN FINANCIAL BUSINESS WITH THE INDIA STACK

## About the Speaker


S.Swaminathan is the Chief Executive Officer of Hansa Customer Equity, a leading customermarketing firm based out of India. It is today one of India's leading customer marketing firm swhich brings together the power of data, analytics, marketing, technology and digital to enable data-driven marketing in enterprises.

Hansa-Cequity helps marketers convert data into insights, insights into interactions and interactions into memorable, distinctive customer experiences. Hansa Cequity has successfully worked with leading blue-chip clients by using the power data, analytics, customer interaction& technology platforms and agency thinking program management capabilities to deliver exceptional value and results for their clients. They manage several successful CRM andanalytics-driven marketing programs for different industry verticals like automotive, retail, financial services, media & entertainment, travel & hospitality to name a few.

Swami has over 20 years of CRM & database marketing experience. Before setting-up Hansa-Cequity, he was working with one of the world's top marketing services companies –The WPP Group. In India, he was the National head & Executive Vice President of iContract(one-to-one agency of Contract Advertising, India and a subsidiary of JWT India). He is amongst the early evangelists to lead the data-led marketing & analytics thinking in the APAC region.

Under his stewardship, iContract became a top-ranking one-to-one marketing agency both in terms of revenue growth, new business wins and awards. Under his leadership the agency won the prestigious Cannes Lions Direct Gold Award. It was the first time that India

won a Direct Lion in this category. Over the last two decades, he has had a rich experience of handling key Indian & international client relationships. He holds a bachelor's degree in engineering and a post-graduate degree in Management. He is an avid blogger and runs his own blog. He also teaches at leading management institutes and regularly writes in leading management dailies & magazines. He is also a Fellow of the Institute of Direct Marketing, London. His other interests include music – he is an accomplished percussionist himself.



**Mr.S Swaminathan,**  
CEO, Hansa Cequity

## Hansa Cequity

Hansa Cequity is today one of India's leading customer marketing firms which brings together the power of check data, analytics, marketing technology and digital to enable data driven marketing in enterprises. Hansa Cequity helps marketers convert data into insights, insights into interactions and interactions into memorable, distinctive customer experiences. Hansa Cequity has successfully worked with leading blue-chip clients by using the power data, analytics, customer interaction & technology platforms and agency thinking program management capabilities to deliver exceptional value and results for their clients. They manage several successful CRM and analytics-driven marketing programs for different industry verticals like automotive, retail, financial services, media & entertainment, travel & hospitality to name a few.

# INDIAN AGRICULTURE IS UNDERGOING A SILENT TECHNOLOGICAL REVOLUTION

## Abstract

Indian agriculture and progressive farmers have shown much openness in adopting new, cutting-edge technologies to improve their farm productivity, price discovery and improved market access. With data costs at their lowest ever and high speed internet penetration growing across India, exposure to information has opened up new horizons for Indian agriculturists.

Technology interventions on the supply side include soil testing apparatus generating massive amounts of trend data, drone based deficiency mapping and auto-sprayers, artificial intelligence based pest predictions, rapid image processing for soil and crop health diagnostics, etc. Customization of nutrition formulations & crop management recommendations are generated using specific data, rather than generalizations. Farmers now receive one-fact-a-day training, day wise/stage wise recommendations, IVR based call centres, m-coupons, digitally delivered insurance policies, etc. Customer loyalty programmes have also grown in agribusiness, creating a large data mine tracking consumption information, as a viable proxy for income data, for use by banks and lending institutions.

Price discovery also has begun using image processors for grading as per pre-set standards, live crop and area specific price information from hundreds of output markets available on the farmers' mobile phones. Information systems to assist in demand-based crop selection, more localised micro-customerization at the village, pooled input purchase platforms, nano technology, drone sprays are all fast becoming a reality in the new 'present-continuous' for India's farmers.

## About the Speaker

Dr Rahul Mirchandani has 23 years of experience as Director of Aries Agro Limited. Ranked amongst the 30 Most Innovative CEOs in India in 2014, he has pioneered several unique marketing processes and brand management tactics at Aries. These include launching India's first loyalty programme in agribusiness, India's first Agri business flash sale (earning a Limca Book of Records), insurance-based customer retention programmes for farmers, executing the first nationwide single day launch for a specialty fertilizer brand as well as several shock-and-awe brand building

programmes to sustain and grow 65 rural brands with zero mass media advertising. Many of these strategies are being documented and taught as case studies in customer relations management at leading Indian business schools. He holds a Doctorate in Management Studies from NMIMS University, Mumbai and is also a Chartered Financial Analyst (CFA) and holds an MBA from the University of Canberra, Australia. Rahul has delivered sessions on Innovation and Entrepreneurship at the Oxford University, UK and has lectured at over 50 B-Schools in India. A Past National Chairman of the Confederation of Indian Industry's Young Indians (CII-Yi), he is the architect of Yi's Farmers Net program and has served on the CII Agriculture, Innovation, International Policy and India@75 National Councils. He has been the Chairman of the Yi's Next Practices platform and has also chaired Yi's International Relations and Partnerships and is the Founder of the Commonwealth Alliance of Young Entrepreneurs- Asia (CAYE-Asia). He is the recipient of the Bharat Ratna Rajiv Gandhi Yuva Shakti Award 2010 in recognition of outstanding achievements towards Youth Empowerment and Inclusive Growth. Recognized as one of the world's foremost achievers in his field, Rahul is listed in the Who's Who in the World 2013 and has been invited to Receptions at Buckingham Palace, the International Labour Organisation, the Commonwealth Heads of Government meetings, High Commissioners Banquets, Association of MBAs Global Deans conference, amongst many others. Rahul was a member of the Global Jury for the UN-Habitat Youth Entrepreneurship and Innovation Awards 2016. Rahul is a Fellow of the 4Sight Class of Ananta Aspen's India Leadership Initiative and member of Aspen Global Leadership Network.



**Dr. Rahul Mirchandani,**  
Chairman & Managing Director,  
Aries Agro Limited

## Aries Agro Limited

Aries Agro Limited is India's largest and most respected manufacturer and marketer specialty nutrients for crops and animals. Since 1969, Aries has worked to make Indian Agriculture sustainable and profitable using balanced fertilizers that are safe, chemically inert and cost effective by introducing a range of over 70 plant nutrition brands, customized for the needs of over 100 crops, soils and agro-climatic conditions. Aries currently reaches over 9 million farmers in 26 states of India and 7 countries through its exceptional distribution network of 6500 distributors and 90000 retailers. The Aries range also includes water-soluble fertilizers for drip irrigated and high-tech farms, nutrition solutions for aquaculture including fish and prawn farms, nutrition for soil-free farming and arid area cultivation, herbal animal feed supplements for cattle, water treatment formulations, nutrients to assist post-harvest management and stress relievers for crops in harsh environmental conditions.

Innovative, shock-and-awe campaigns have been the primary brand building technique used by Aries. The company has many firsts to its credit - first to introduce water-soluble, single dose packaging to eliminate plastics, a Limca Book of Records for conducting the first ever Agribusiness Flash Sale in India (with customers booking over Rs 2 billion of Aries products in 30 minutes), pioneering brand merchandising festivals across thousands of villages, the first single day launch and delivery of a nutrient brand across India, the first to use techniques like sensory branding and drone sprays for crop nutrition, amongst many more.

# INSIGHTS INTO UIDAI – THE WORLD'S LARGEST FINANCIAL INCLUSION INITIATIVE

## About the Speaker

Govindraj is a television & print journalist and most recently the founder of BOOM ([www.boomlive.in](http://www.boomlive.in)) a fact checking & fake news busting initiative. He is also the founder of the award-winning [www.indiaspend.org](http://www.indiaspend.org) & [www.factchecker.in](http://www.factchecker.in), public interest journalism efforts which use data to write and syndicate stories in areas like health, education, and environment.

BOOM and FactChecker are the only verified India members of the International Fact Checking Network (IFCN) a part of the Poynter Institute. IndiaSpend is a member of the Global Investigative Journalism Network (GIJN). He also anchors seasonal shows on Indian news television – the current one being 'Aegons of Business' featuring conversations with young entrepreneurs on BloombergQuint and earlier the weekly 'Policy Watch' on public service broadcaster Rajya Sabha or RSTV.

Previously, he was Founder-Editor in Chief of Bloomberg TV India, a 24-hour business news service launched out of Mumbai in 2008 and a partnership between Bloomberg LLP and the UTV Group in India. Prior to setting up Bloomberg TV, he worked with Business Standard newspaper as Editor (New Media) with a specific mandate of integrating the newspaper's news operations with its digital or web platform. Before that, Govindraj spent five years with television channel CNBC-TV18 where he worked from near start-up point and actively drove most of the channels programming growth and expansion initiatives. Prior to television, he worked in print in The Economic Times, Business World and Business India magazines. He has been a career business

journalist who has reported and written on Indian business for over 25 years. He is a Fellow of the Inaugural Class of Ananta Aspen's 2006 India Leadership Initiative, a 2018 McNulty Laureate and a winner of the 2014 BMW Responsible Leaders Awards



Mr. Govindraj Ethiraj,  
Founder: BOOM & IndiaSpend

## BOOM & IndiaSpend

BOOM is an independent digital journalism initiative. We are India's premier fact-checking website, committed to bring to our readers verified facts rather than opinion. When there is a claim, we will fact check it. We also report on stories and people who are fighting for individual rights, freedom of expression and the right to free speech. And some cool stuff when we are not doing that.

BOOM is a part of Ping Digital Network ([www.pingnetwork.in](http://www.pingnetwork.in)), a private limited company registered in India. Ping is a full-fledged food to living digital video network. BOOM is the news division of the network and has been in existence since 2014 and as a full-fledged fact-checking initiative since November 2016.

# WHAT FINANCIAL BUSINESS LEADERS OUGHT TO DEMAND FROM DEVOPS

**Mr. Ritesh Srivastava,**  
Vice President - Engineering, Quadratic Insights Pvt. Ltd.

In many ways, it is not inaccurate to describe today's most successful financial organizations as IT organizations with banking & insurance licenses, rather than as financial organizations with IT departments. The competitive pressure from smaller, specialized, online companies is forcing all players to continuously improve in terms of IT.

Innovation and speed-to-market of financial products have often been hampered by IT factors, such as long lead times for starting projects and for moving them into production; late stage code merges leading to software quality issues; manual handovers and approvals; infrequent version releases; and poor coordination between Development and Operations.

Financial projects have so much at stake that wise IT engineers will hand-pick DevOps priorities to match each project's business objectives and exposures. Unless business leaders in financial organizations are aware of what exactly to demand from the IT DevOps teams (internal or external), they do not have true control over today's complex projects.

Compared to other industries, financial industry business leaders need to place an unusually high priority on the following aspects, while rolling big data, AI, automation, advanced analytics or software development projects.

## Maintainability:

Improved analyses, features, and data must roll out very frequently, with very low latency (delay). Financial project requirements, hence the corresponding software requirements, need to be agile and change over time. New analyses need to be performed; new financial instruments need to be made available to model. Whatever the need, your code may very likely need to be modified. To handle such changing needs successfully, your software needs to be designed

from the beginning with extensibility in mind. It needs to rely on a combination of strong type systems and thorough testing, to make rapid and major refactoring possible.

## Data integration:

The ability to ingest and digest a never-ending stream of new information; the more feeds (atomic inputs) that can be handled, the better. One common theme in financial projects nowadays is the wide array of data pulled in, its variable quality and formats. Your offering may require interaction with anything from live feeds from a stock exchange, legacy files from a mainframe, Microsoft Access databases, or the Twitter firehose. To work with such varied data, it is important that all your software first cleans up, or sanitizes, the data that it needs. Your software should use strict parsing rules. Your software should come with a monitoring solution that notifies you when it sees inexplicable data in one of your data feeds.

## Automated Deployment:

At Quadratic, our DevOps teams routinely huddle with developers & data scientists, to understand the key aspects of design. This understanding helps them use the right automation & configuration tools to build the complete pipelines for continuous integration & continuous delivery (CI/CD). With such an approach, we can deploy 50-node dynamic clusters in just a few hours.

## Automated Testing:

An uncaught mistake or security loophole can quickly run into hundreds of thousands of dollars in cost, sometimes much more. In case your software build systems allow you to release code that has not yet been through your test suite, or even worse, they allow you to be unsure of whether the released code was tested, you are entering the land of nightmares. Your software teams and vendors must be aware that excellent Quality Assurance Automation is a core part of your build systems. At Quadratic, we follow Test Driven Development [TDD], which when combined with continuous integration and

continuous delivery (CI/CD), allows code updates to be released as frequently as daily. An assurance from your software team or vendor that they "write quality code in the first place" is great but is not a substitute for automated testing. Multiple tools exist today that help with automating penetration testing, security testing, and performance testing.

## Compliance, regulation, and auditability:

To minimize chances of malfeasance, sensitive systems should always be modular in design, and unrelated components should run in separate processes -- ideally in separate virtual machines (VMs) separated by firewalls. A defect, code injection, privilege escalation, or social-engineering attack on one service or component should still not be able to tamper another service. While building deployment blueprints, Quadratic DevOps teams work closely with the architects to ensure that this practice is followed fully.

A good engineering process is not completed until all solutions are online and running with high quality, integrated with their data feeds, storage, networks, and administration systems. Such processes involve elaborate DevOps steps, such as dynamically creating and using virtual servers, tools, storage devices, accounts, software, and network configurations.

Let me conclude by saying that there are a lot of ways to build financial software, some good, many poor. Given the complexity of systems today, and the need to be quick, agile and responsive in the market, financial business leaders need to consciously set high-level expectations from DevOps (both from internal or external development teams).

# GDPR IN 5 MINUTES: SYNOPSIS FOR BUSINESS LEADERS

Sampurna Sikha,  
Chief Information Security Officer, Quadratic Insights Pvt. Ltd.

In today's data-rich world, every one of us has a need that cries out "leave my data alone!" When someone has access to our data without our knowledge, it causes us great discomfort. Many countries realize the individual need for, and business importance of, data privacy and suggest best practices. Some countries have taken the extra step of enforcing data privacy as a law.

European Unions' GDPR (General Data Protection Regulation) is an enforceable guideline. Privacy enforced as a law can benefit both businesses and customers.

1. Better data management & cybersecurity
2. Better loyalty and trust
3. Increased return on investment

Many countries are now following EU's footsteps and referring to EU's GDPR as a guideline. It is mandatory for leaders of global data-driven businesses to understand GDPR at a high level, so we at Quadratyx prepared this note. Let us start with some simple definitions.

- **Personally Identifiable Information (PII):** An individual's data that can be identified directly or indirectly, such as name, id number, location, online id, factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that person.
- **Profiling:** Automation processing used to evaluate an individual, used to analyze or predict aspects like performance at work, economic situation, health, personal preferences, interests, reliability, behavior, location or movements.
- **Data Subjects:** Individuals whose data is referred
- **Data Controllers:** Stakeholders who determine purpose and means for processing PII data
- **Data Processors:** Stakeholders who process PII on behalf of, and in

accordance with the instruction of, a data controller

- **Data Lifecycle generally goes through the following stages:** Collection - > Transfer -> Use -> Storage -> Disposal. At each stage, the data controller should ensure that the process adheres to GDPR guidelines and is expected to share details when asked.

GDPR mandates that any processing of PII data should adhere to seven principles:

1. Collect data for a specified, explicit and legitimate purpose.
2. Protect data from unlawful processing, accidental loss, destruction or damage.
3. Process lawfully, fairly and in transparent manner
4. Collect what is adequate, relevant and limited to necessity
5. Maintain data that is accurate, and where necessary, keep up to date
6. Keep data for no longer than necessary
7. Ensure that there is accountability for the entire life cycle of data

GDPR has explicitly provided six rights to individuals (data subjects) to instill confidence in the system and thus, may let individuals share data with confidence.

- Right to access; Right to rectify
- Rights to be forgotten; Right to restrict; Right to withdraw
- Right to move

GDPR is applicable to organizations that meet any one of the following criteria:

- Established in European Union
- Offers goods or services to people in the EU or EU citizens
- Monitor behavior of people in EU or Citizens of EU
- A processor for a controller who must comply to GDPR
- Data processor is in the EU

According to European Commission following 11 countries are considered to have adequate security measures and appropriate privacy laws for personal data to be transferred. These are referred as "Adequate Countries"

Andorra, Argentina, Canada (only commercial organizations), Faroe Islands, Guernsey, Israel, Isle of Man, Jersey, New Zealand, Switzerland, Uruguay and USA (if the recipient belongs to the Privacy Shield). Data transfer to these countries is expressly permitted.

Personal Information Management Systems (PIMS) framework: Plans, establishes, implements and maintains management of personal information. Any organization that needs / wants to comply with GDPR can implement PIMS to guide the process, which involves:

- \* Drafting a PIMS policy at organizational level that is in line with the law
- \* Performing risk assessment & treatment considering applicable privacy requirements
- \* Defining clear objectives that reflect implementation at organizational level
- \* Measuring and monitoring performance of objectives
- \* Communicating and updating the policy as required
- \* Retaining documentation on implementation of PIMS
- \* Assigning a Data Controller to work as per PIMS policy; share details with customers
- \* Assign a Data Processing Officer if required, share details with authorities

An organization that has processes to implement privacy laws provides a comfort zone to customers, and keeps fines at bay. Trust strengthens existing relationships & builds new ones.

Quadratyx is committed to securing data of its clientele and their respective customers. Commitment is reflected in the fact that Quadratyx security policies are in line with ISO 27001:2013. A framework that is internationally recognized and recommends best practices for information security management systems.

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# A FULL SPECTRUM OF OUR OFFERINGS

Mr. Sandeep Medury,  
Associate Vice President – Products  
Quadratic Insights Pvt. Ltd.

## Solution Ideas to Working Reality!

We have been working closely with organizations, across the globe and across diverse domains, in solving business problems and making ideas come to life.

Our custom solutions, by leveraging AI, Big Data, & Automation technologies, have been empowering businesses by

- ◇ Reducing costs
- ◇ Increasing revenue streams
- ◇ Improving customer satisfaction

### Some of our solutions include:

- » Cognitive Process Automation for mortgage based back-office processes
- » Recommendation engine for CPG distributors
- » Deep learning based proprietary OCR engine
- » Power loss minimization solution for the utilities industry

- » Next generation fraud detection for banks
- » Enterprise level big data road maps
- » Design of next generation analytics work benches
- » Setup of enterprise data lakes
- » AI-based smart assistants for internal, external customers
- » Next generation call center enablement
- » Deep Web profiling of key customers, key contacts, analytics on printed documents
- » Machine learning systems for delinquency prediction – loans, credit cards, etc.
- » Intelligent automation and NLP algorithms to extract contents of interest (Clinical trial documents)
- » Route and delivery optimization
- » Unstructured data solutions on various customer channels (Email, Social Media, Voice)

- » Domain agnostic classroom and digital corporate training
- » Customer lifetime value prediction
- » Intelligent Pricing Assistant for Insurers

## Managing end-to-end data science journeys

Every organization is at a different juncture in their data science journey. Some could be starting out their digital journey while others could have implemented certain pilot projects but are yet to truly benefit from their investments and truly go digital.

Our eight offerings are:

### CXO Workshops:

A senior decision maker, with the ever-growing list of technologies, is constantly grappling with several unknowns and multiple threads of changes. Early adopters of big data, AI and its related technologies will benefit from a distinguished market position.

### Roadmaps Creation and Consulting:

To remain competitive in this dynamic environment, an organization must make the transition to becoming a data-driven organization. This includes, developing new, modern forms of analytics, garnering insights from disparate datasets, and setting up enterprise-wide data repositories.

**Center of Excellence Creation:** Analytics Centers of Excellence' is-a-way to institutionalize and accelerate the adoption of AI based automation, machine learning and big data analytics within an organization.

### Data Lakes, Analytical Data Marts:

Big Data Lake is an ideal solution for companies looking to economically harness and decipher ever-burgeoning data volumes of diverse formats into meaningful insights. With the increase in new data sources such as mobile phones, websites, and other connected devices, there is a growing requirement to move behind the conventional data warehouses and improve big data consolidation with the help of big data lakes.

### Advanced Analytics:

To unearth deeper insights, make predictions, or generate recommendations regarding the next line of action it is necessary to go beyond traditional business intelligence (BI) tools and techniques. Predictive and prescriptive tools and techniques lay out the necessary ammunition.

### Intelligent Decision Assistants:

Artificial Intelligence is transforming the way businesses are making decisions

## Several of our solutions leverage our existing next-gen technology accelerators.





i.e. analytics-driven decisions. It also helps to reduce human biases and errors and reduces the time involved in making critical decisions.

**Cognitive Process Automation:**

Each business is characterized by several important but manual intensive

tasks. Processes that involve such repetitive tasks (including some human intelligence), can be automated thereby saving millions of dollars and hours.

**Training & Empowerment:**

To imbibe the ethos of a data driven organization, the workforce needs to go

through a continuous cycle of training and reskilling. It is critical to have separate tailor-made training plans to meet the diverse needs of the senior management, middle management, and technologists.

# Our Insights and Intelligent Automation Solutions are Applicable across Domains.



## SOME KEY ENGAGEMENTS

- Human Resources
- IT and Data Management
- Operations
- Customer Service and Risk Management
- Marketing and Sales
- Learning and Development

<p><b>Banking</b></p>  <p>Retention and Attrition Analytics Mortgage: Cognitive Process Automation Lending: Cognitive Process Automation Next Generation Data Infrastructures</p>	<p>Next Product Purchase Behaviour Delinquency Model – Credit Cards Unstructured Data Analytics (Email, Voice) Digital Data Science Learning Academy</p>
<p><b>Insurance &amp; Healthcare</b></p>  <p>Insurance: Intelligent Pricing Assistant Insurance: Customer Renewals</p>	<p>Claims: Propensity-to-pay CXOs: Big Data Analytics Workshop</p>
<p><b>Telecom &amp; Technology</b></p>  <p>Failure Prediction and Optimization Interactive Sales Aggregation Dashboards CXOs: Data Science workshop</p>	
<p><b>Pharma &amp; Medical</b></p>  <p>Natural Language Processing – Clinical Trial Data Text Analytics and Structured Data Extraction</p>	<p>Optimal Patient Release Count Data Lake Formation Technologists Workshop: Text Mining, Social/Graph Mining, NLP</p>
<p><b>Retail &amp; CPG</b></p>  <p>Route Optimization Purchase Recommendation Engine Workshop on GDPR and its Impact</p>	
<p><b>Manufacturing</b></p>  <p>360 Degree Employee Evaluation Analytics Steel: Optimize Efficiency of Manufacturing Operations</p>	<p>Big Data Repository for the Sensor Data Comparative Performance Evaluation for Partners and Field Staff</p>
<p><b>Agriculture</b></p>  <p>Predict Fertilizer Demand</p>	
<p><b>Energy &amp; Utilities</b></p>  <p>Power Loss Minimization Solution Data-driven Consumption Analytics</p>	

# Clients:



## Multiple Offices:

We are an international organization with offices in two countries across two continents -India (Asia) and Colombia (South America). Our Colombian office also acts as our near shore center for all our engagements in the Americas region.



Hyderabad, India



Bogota, Colombia

Flatworld Solutions Inc, our strategic partner, is a leading player in the Information Technology, Business Consulting and Outsourcing Services space. It is spread across 5 continents, 220 plus countries with an employee workforce of over 3300. For more than a decade, FWS has been leveraging technology by providing a range of high quality and cost-efficient Information Technology Solutions, from global locations.



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