

**APPLICATION,
INNOVATION AND
MATURITY OF
INDIAN ANALYTICS**

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FOREWORD

90%

of the world's data
was created in the
last two years

1,40,000 to 1,90,000

shortage of
specialists with
analytical expertise
in the US alone

For businesses these are times of exponential change. Customer connected by smartphones, high-speed mobile networks and social media platforms are forcing them to engage and react in real-time. The explosion of data means that new skill have to be acquired to integrate multiple data sets and derive insights from within it. Ever-changing regulatory frameworks further add to the complexity. Companies that lead the curve are the ones who have welcomed and embraced change.

Moreover, in the age of social sharing, businesses are awash with more data than they once dreamed possible, giving birth to the need for hyper-personalisation, where campaigns are focused on data related to consumers' behaviour, rather than just their demographic and psychographic data.

With the explosion in data, rises the importance of analytics. Experts believe that 90% of the world's data was created in the last two years. A Bain and Company Survey from 2014 reports that companies using data well are twice as likely to be in the top quartile of financial performance within their industries.

Businesses are clear that they need the right set of products, tools and techniques to manage the data. But more so, they need the right type of talent to provide relevant insights. The shortage of the right talent also stems from the fact that analytics solutions are now accepted by several industries,

growing from being accepted only in industries like BFSI, retail, etc.

The talent shortage is acute and according to a report by McKinsey Global Institute 2014, United States alone faces a shortage of 1,40,000 to 1,90,000 specialists with analytical expertise. India is strongly positioned to take advantage of these needs and help global and Indian firms with reliable and actionable insight-based analytical solutions. The formidable position of Indian analytics solution providers on the global space is attributed to a large talent pool and rich experience gathered over the years.

NASSCOM and Hansa Cequity have put in a dedicated effort to map the analytics maturity of Indian firms and how these offerings and capabilities can be used to leverage the data revolution as it unveils itself. We trust you will find this report useful. As always, we welcome your feedback, suggestions and comments.

R. Chandrasekhar
President, NASSCOM

S. Swaminathan & Ajay Kelkar
Co-founders, Hansa Cequity

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MARKET SIZE

Global market size for various analytic capabilities:

Category	Sub-category	2014	2019 Forecast	CAGR 2014 - 2019
Total market size	<i>Products and capabilities</i>	\$96 billion		
Business analytics	<i>Query, reporting and analysis tools, content analytics, data warehousing platform</i>	\$41.0 billion	\$67 billion	10.3%
CRM analytics	<i>Sales analytics, customer analytics, contact centre analytics, marketing analytics, web and social media analytics</i>	\$4.2 billion	\$7.7 billion	12.83%
Supply chain analytics	<i>Supply chain planning and procurement, sales and operations, manufacturing, logistics</i>	\$2.5 billion	\$4.8 billion	34.5%
Risk analytics	<i>Risk calculation engines, score cards</i>	\$6.9 billion	\$13 billion	13.5%
Location analytics	<i>Geo-coding, geo-mapping</i>	\$6.8 billion	\$11.8 billion	11.6%

India dominates the supplier landscape catering to a large part of the total demand. Given its headstart, mature delivery models and domain expertise, India would maintain its dominance in the near to medium term.

Source: Markets and Markets Reports,
NASSCOM Blueocean MI Report 2014

An analytics centered culture

Analytics capabilities are being increasingly used across industries at various levels by companies in India and globally.

Customer analytics is mission critical to businesses that want to succeed in the future. Research has shown that loyal customers are worth up to 10 times as much as their first purchase

To succeed companies should focus their analytics energies on areas such as Customer insights and segmentation. Customer engagement. Customer service and support

Six drivers of analytics



Exponential increase in data generation



Increased affordability of analytical tools



Companies using data well, lead the financial performance within their industries.



Lower data storage costs fuels the growth



Ease of data consolidation



Easy availability of talent

New technology drives analytics adoption

Increased adoption of analytics offered by Software as a Service (SaaS) models

Leveraging unstructured data through text analytics

Mobile analytics expected to unlock significant value for organisations

KEY BUSINESS-SIDE TRENDS

Trends in the analytics landscape are going to change significantly in the next decade.

Business-side trends will be driven by:

Increased C-suite attention

- Top-performing organizations show a 5x higher usage of analytics as opposed to low performers
- High performing CXOs will need to learn ways to integrate analytics-based decision making

Competitive and margin pressures

- Analytics is fast moving from a discretionary spend category to an integral tool for competitive Differentiation
- Achieving competitive differentiation, growing revenue and cost reduction emerged as the top 3 challenges faced by organisations
- Organisations that proactively use data generated insight appear to identify and predict trends better and are quick to adopt industry practices thus giving them a competitive edge

Increased regulatory and compliance requirement

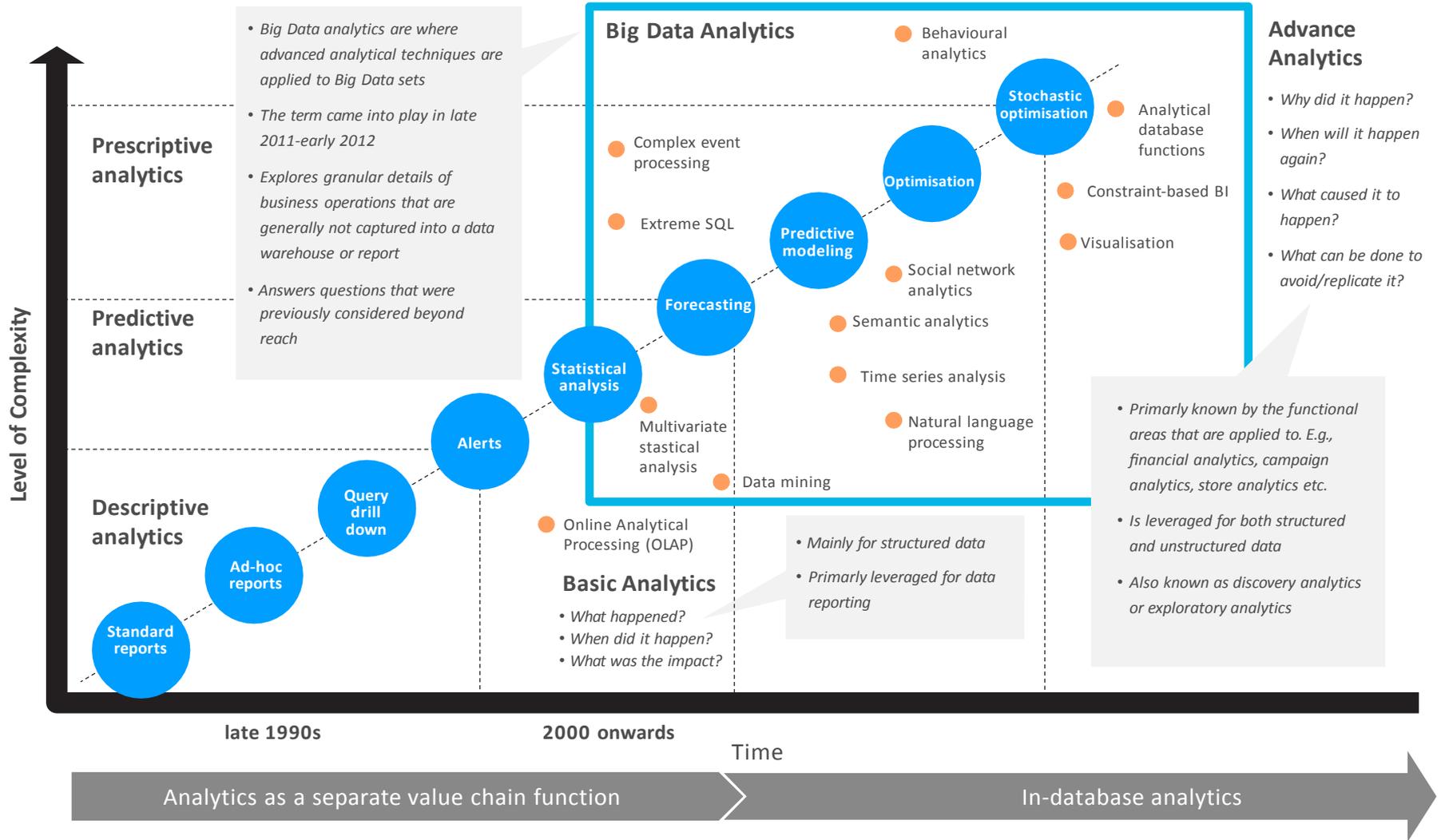
- Increased pressure for regulatory compliance and greater transparency in sectors like banking, insurance and healthcare is expected to increase the demand for analytics
- Inadequacy of in-house and centers to adapt to complex risk compliance norms like Basel III and Solvency II, could led to greater demand for third-party services

Increased availability of talent

- As importance of analytics is growing exponentially, it is attracting talent from other streams who consider analytics as a long-term career option
- Companies are hiring students from various streams and giving them in-house or outsourced training for faster deployment

Source: Aventus Capital, Analytics Outsourcing 2012, Sep 2012

EVOLUTION OF ANALYTICS



Exponential growth in data volume, variety and velocity has facilitated the progress of analytics for better and more informed business insights

APPLICATION, INNOVATION AND MATURITY OF INDIAN ANALYTICS

Analytics market in India is expected to grow 22.8% from 2014 to 2019.

Analytics capabilities and products offered by Indian firms are now highly mature. These solutions have over the years scaled up from descriptive analytics capabilities being used for reporting and business intelligence, to predictive modeling and later moving to prescriptive ones. It's no surprise then that the analytics market in India is expected to grow at an impressive CAGR of 22.8% from 2014 to 2019.

NASSCOM, in partnership with Hansa Cequity, undertook an exercise to understand the maturity of analytics in India. Due to the wide spectrum of analytics solutions, which make it difficult for businesses to build capabilities across the board, there is a need to explore possibilities of cross-leveraging of different capabilities being built in the country. This study also provides a platform to recognise the most innovative Indian analytics organisations that are creating immense business impact or value for its stakeholders.

India: Player landscape*

	nos.	FY2014E
 Analytics firms		600+
 Start-ups		500+
 Product firms		200+
 Integrated firms**		100+

Submissions, in the form of case studies, were sought from **Consumer/User firms of analytics solutions, Global-in-house Centres, Service providers & Product organizations** in the area of Big Data and Analytics. The submissions were under four major business application areas viz., **customer experience, revenue improvement, cost and operational efficiencies, and risk and compliance management** classified into descriptive, predictive, and prescriptive analytics.

Whilst, the work undertaken could be for a domestic consumer or a global customer/principal, the work undertaken should have leveraged Indian capabilities.

A total of more than 250 case studies were submitted by organisations representing providers, GICs and many Indian buyer organisations. The case studies provided a perspective on the application, innovation of the maturity of the work undertaken for different industries spanning BFSI, retail, agriculture, automotive, healthcare, telecom and a range of others.

Product firms redefining core offerings and exploring service differentiators in conventional and emerging business models

A large number of the submissions received were applied in India, especially by the Government or related agencies. The subsequent slides detail out the most innovative case studies we received as part of this initiative.

A total of more than 250 case studies were submitted by organisations representing providers, GICs and many Indian buyer organisations.

Notes:

- #: Represents only outsourcing services market
- *: The break-up given includes over-laps; hence a direct total can't be calculated
- ** : Top 100 IT-BPM firms who offer analytics services and products

Source: NASSCOM

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Nasscom acknowledges the commitment and efforts put in by its eminent panel in helping review and rate these case studies.



ANALYTICS ACROSS INDUSTRIES

In association with Hansa Cequity



ANALYTICS IN
**NATURAL
RESOURCES**



In association with Hansa Cequity



ANALYTICS IN MINING

With energy demands growing and the resources required for this energy production becoming harder and harder to locate, analytics will be imperative in our efforts to meet future resource demands.

Organisations should be looking to invest in their analytic capabilities now, allowing them to make the most of current deposits as well as assist in finding new deposits.

Key areas of analytics applications:

- *Reducing the time taken to locate natural resources*
- *Reduced the costs associated with locating natural resources*
- *Increasing the efficiency of both new and old deposits*

Predictive Maintenance of Trucks for a Mining Major

Organisation

Absolutdata

Client

Mining major

Vertical

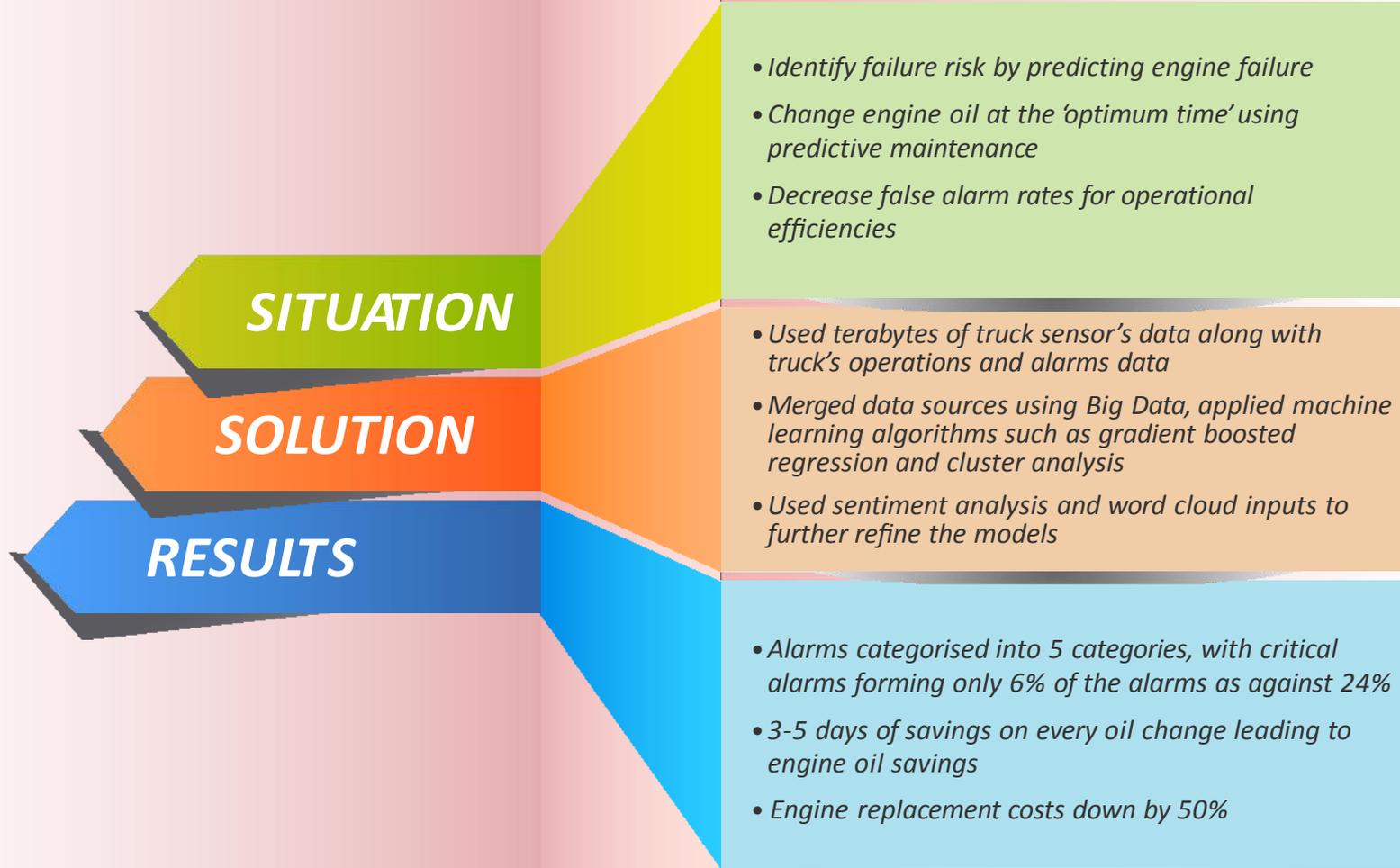
Mining

Geography

United States

Category

Predictive





ANALYTICS IN ENERGY AND UTILITIES

Initiatives such as Automated Meter Infrastructure (AMI) and Smart Grid are sometimes likened to bringing the utility industry into the Internet age. Enabling direct communication with metering devices opens up a realm of possibilities for understanding usage patterns that were not even registered. The ability to measure and analyze data about energy distribution and consumption on a more granular basis—in time and in detail—can unlock significant value.

- Unbilled consumption identified by following the 'meter-to-cash' trail can generate incremental revenue.
- Detection of theft and fraud in the grid can reveal lost revenue.
- Proactive maintenance of expensive transformers and other such heavy equipment in the grid can save millions of dollars by postponing replacement to the future.

Key areas of analytics applications:

- *Demand response*
- *Revenue management*
- *Fraud and loss prevention*
- *Energy efficiency*
- *Compliance*
- *Asset maintenance and management*
- *Customer care and management*
- *Forecasting and load management*

Prediction of Wind Energy Production

Organisation

Business Brio

Client

An energy company

Vertical

Wind Energy

Geography

Netherlands

Category

Predictive

SITUATION

SOLUTION

RESULTS

- *Challenges in accurate prediction of wind energy generation at a particular point of time due to very stochastic nature of wind energy generation*
- *This prediction is critical to save conventional energy due to 8/12 hour lag in ramp-up/down of conventional plants*

- *Regression and time series method to predict wind energy generation in shorter time horizon (≤ 8 hrs)*
- *Artificial neural network and ensemble with (ordinary linear regression) to forecast for medium time horizon (>8 and <24 hrs)*

- *Forecasted wind energy supply in a power grid for understanding the need of conventional energy as controlled input with 84% and 76% accuracy in cases of short term and medium term prediction respectively.*

Demand Forecasting Model

Organisation

L&T Technology Services

Client

A State electricity board in India

Vertical

Power and Utilities

Geography

India

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Need for accurate models for forecasting power demand
- Huge gaps in load requirement vs the installed power generation capacity

- Parametric modeling based demand prediction by integrating various datasets
- Real time monitoring of key parameters through customised dashboards to aid planning/decision making

- Flexible and efficient planning and policy making for different customer types
- Evaluation of power requirement for particular events /seasons for efficient planning
- Reduced load shedding instances leading to increase in customer satisfaction

Smart Meter

Organisation

Siemens

Client

Electric, Water and Gas Utilities

Vertical

Energy

Geography

Global

Category

Descriptive



Real-time ETA and Seat Availability in Cluster Buses

Organisation

DIMTS

Client

DIMTS

Vertical

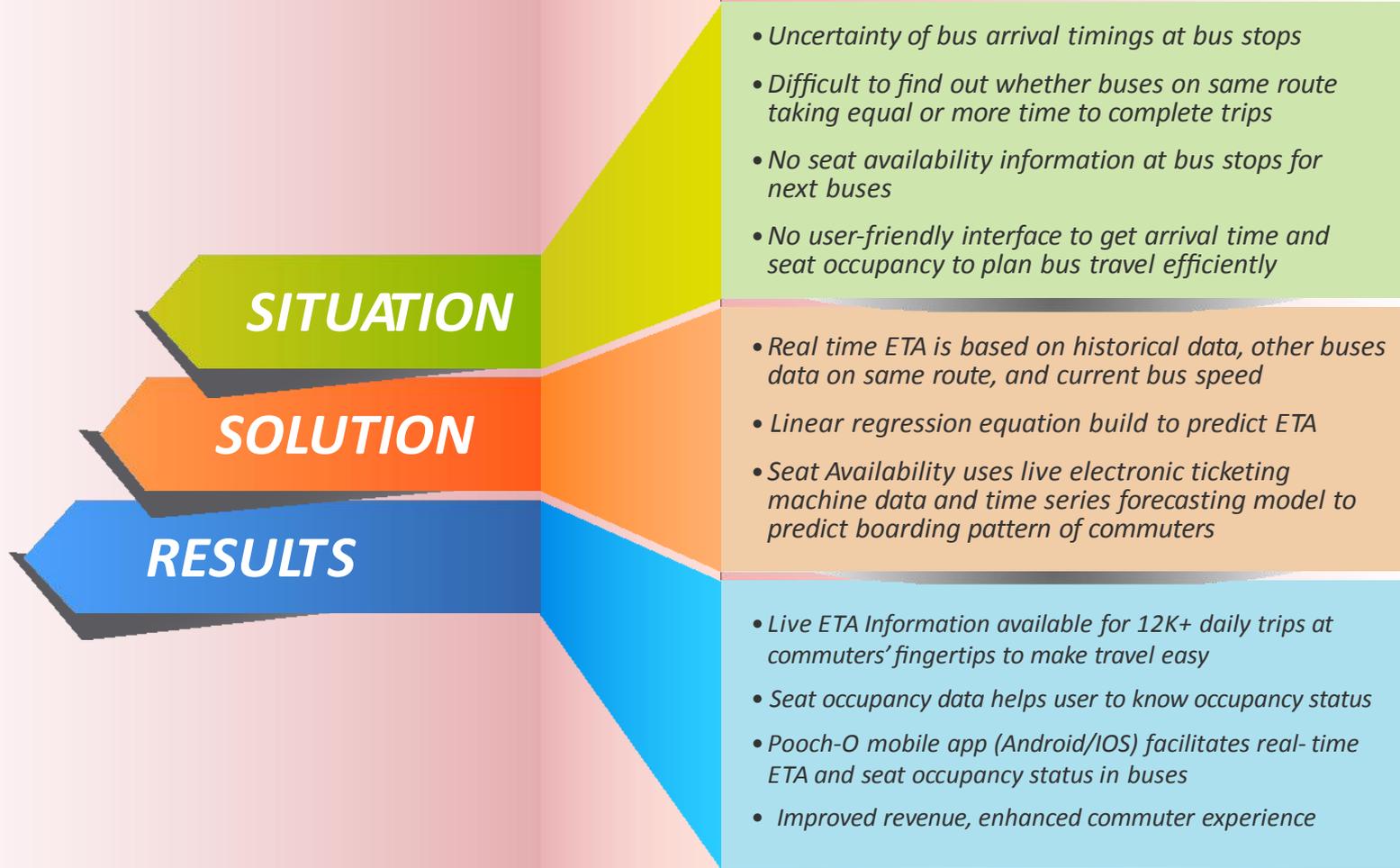
Transport

Geography

India

Category

Predictive



Platform for Real-time Demand Predictions

Organisation

StatLabs

Client

Government of ME country

Vertical

Transport

Geography

Middle East

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Predict real-time demand for taxis and deploy taxis accordingly

- Implemented PRESTO SOPXL—a big data Predictive Analytics platform with separate modules for sales and revenue analytics, demand forecasting and demand planning by incorporating the power of Hadoop based Big Data platform, PMML compliant scoring engine and web-based presentation layer for visualisation and reporting

- Increased the number of trips per taxi each day by approximately 20.5% since 2014
- Improved zone-wise trip pricing and customer satisfaction by meeting demand real-time
- Increased the gross margin by 14% within two quarters by increasing number of trips per taxi

Self Service IoT Analytics in Power Generation

Organisation

Rolta India

Client

Leading power generation company

Vertical

Power Generation & Utilities

Geography

Asia

Category

Prescriptive





**ANALYTICS IN
HEALTHCARE**

In association with Hansa Cequity



ANALYTICS IN HEALTHCARE

Healthcare organisations are increasingly using analytics to consume, unlock and apply new insights from information. New methods of analytics can be used to drive clinical and operational improvements to meet business challenges. From a traditional baseline of transaction monitoring using basic reporting tools, analytics in healthcare is moving towards predictive models, dynamic fraud detection and predictive patient behaviour.

Key areas of analytics applications:

Business goals

Specific objectives that can be addressed by analytics

Improve clinical effectiveness and member/patient satisfaction

- *Improve clinical quality of care*
- *Improve patient safety and reduce medical errors*
- *Improve wellness, prevention and disease management*
- *Understand physician profiles and clinical performance*
- *Improve customer satisfaction, acquisition and retention*

Improve operational effectiveness

- *Reduce costs and increase efficiency*
- *Optimise catchment area and network management*
- *Improve pay for performance and accountability*
- *Increase operating speed and adaptability*

Improve financial and administrative performance

- *Increase revenue and ROI*
- *Improve utilisation*
- *Optimise supply chain and human capital management*
- *Improve risk management and regulatory compliance*
- *Reduced fraud and abuse*

Stop the Rapid Spread of Infectious Diseases

Organisation

HP Analytics

Client

Healthcare Org

Vertical

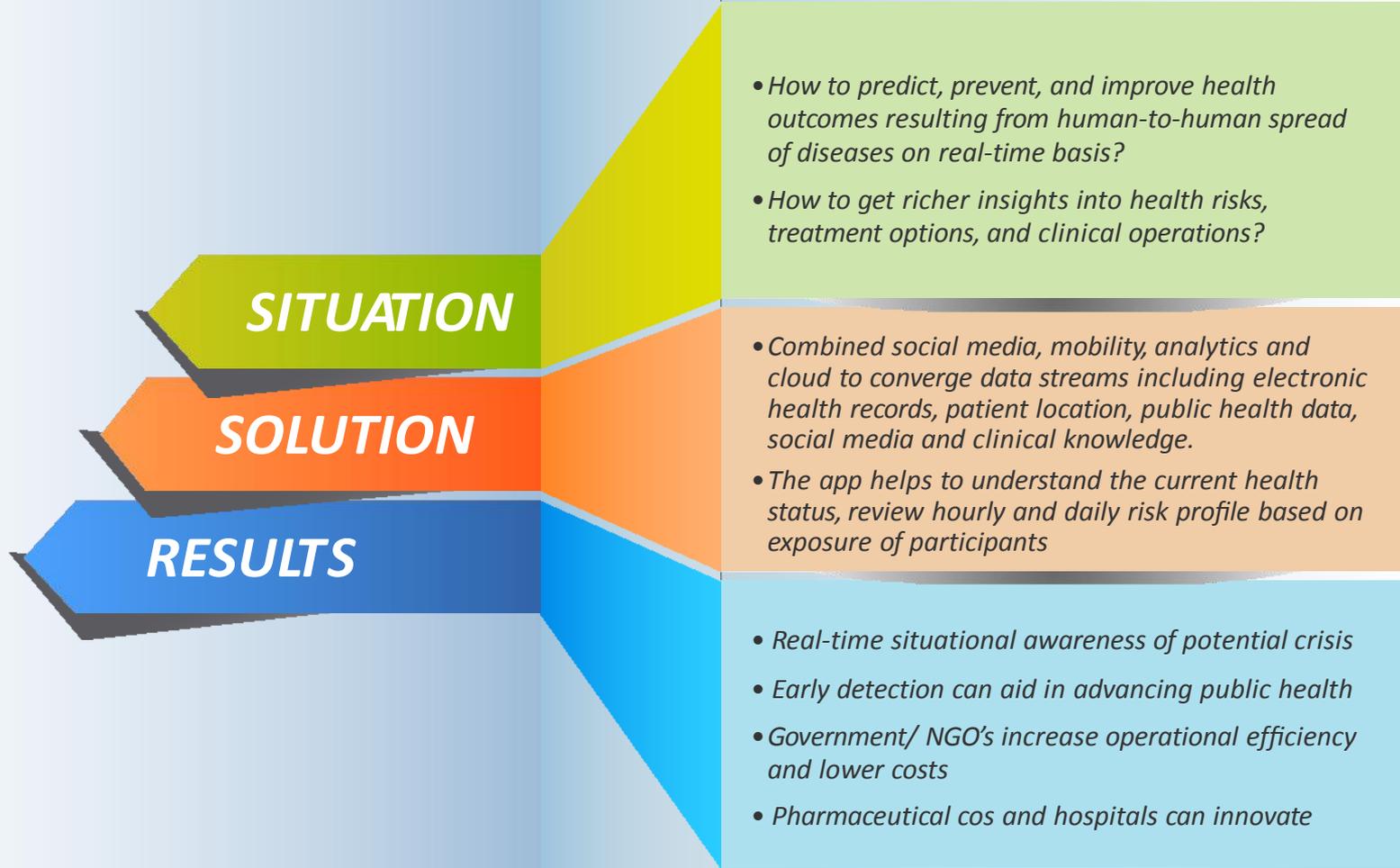
Healthcare

Geography

Global

Category

Descriptive



SITUATION

- How to predict, prevent, and improve health outcomes resulting from human-to-human spread of diseases on real-time basis?
- How to get richer insights into health risks, treatment options, and clinical operations?

SOLUTION

- Combined social media, mobility, analytics and cloud to converge data streams including electronic health records, patient location, public health data, social media and clinical knowledge.
- The app helps to understand the current health status, review hourly and daily risk profile based on exposure of participants

RESULTS

- Real-time situational awareness of potential crisis
- Early detection can aid in advancing public health
- Government/ NGO's increase operational efficiency and lower costs
- Pharmaceutical cos and hospitals can innovate

Prevent healthcare cost arising from preventable hospitalization

Organisation

EXL Service

Client

US based healthcare provider

Vertical

Pharmaceutical

Geography

United States

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Reduce significant annual healthcare cost for US based network of healthcare providers
- Healthcare costs caused by “preventable” hospitalization run into billions

- Developed an advanced machine learning algorithm to predict “number of days that each member is expected to spend in hospital in next 12 months” leveraging their past healthcare data
- Formed a large number of interaction terms (~1.4 MM) using ~45 attributes

- Reduce hospitalization costs by preventing predicted short-term hospital stays
- Make better budgeting decisions by predicting the number of days for long term hospitalization
- Improve patient satisfaction by avoiding unnecessary hospitalization

Patient Sentiment Analysis

Organisation

Saama Technologies

Client

Large healthcare provider

Vertical

Healthcare

Geography

United States

Category

Descriptive

SITUATION

SOLUTION

RESULTS

- USA's largest hospital system was looking at lagging patient experience indicators
- Current cycle time of information was 8-12 weeks
- The hospital system had no competitive advantage and had no help in maximising their reimbursements

- Used NLP, scoring algorithms, Big Data Analytics to customise an innovative patient experience solution
- Used Predictive modeling to map all the data, merge comprehensive healthcare data from internal and external sources, mined 200+ social media sites to tap patient voice

- With real-time scores on patient experience, healthcare organisations can evaluate and optimise new patient engagement strategies
- Improved overall patient care value chain including improved patient sentiment and experience levels leading to happier patients and overall a better healthcare system



ANALYTICS IN **BANKING**

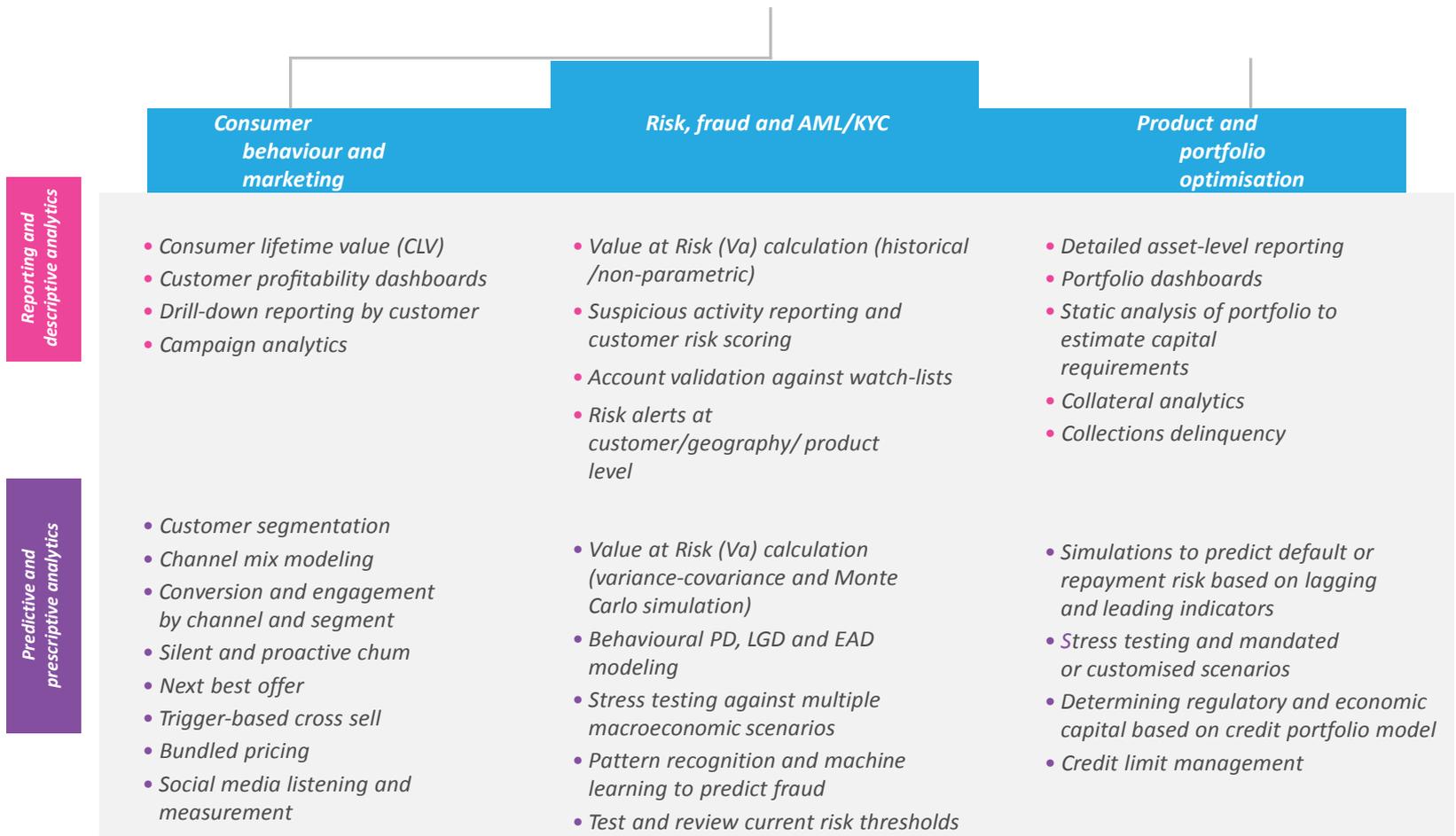




ANALYTICS IN BANKING

Analytic solutions have grown tremendously over the last decade, in terms of their sophistication and the resulting business impact they create. There are a range of analytics solutions that banks are deploying today. While basic reporting continues to be must-haves for banks, advanced predictive and prescriptive analytics are now starting to generate powerful insights.

Banking segments with significant use of analytics



Risk Management

Organisation

Axis Bank

Client

Axis Bank

Vertical

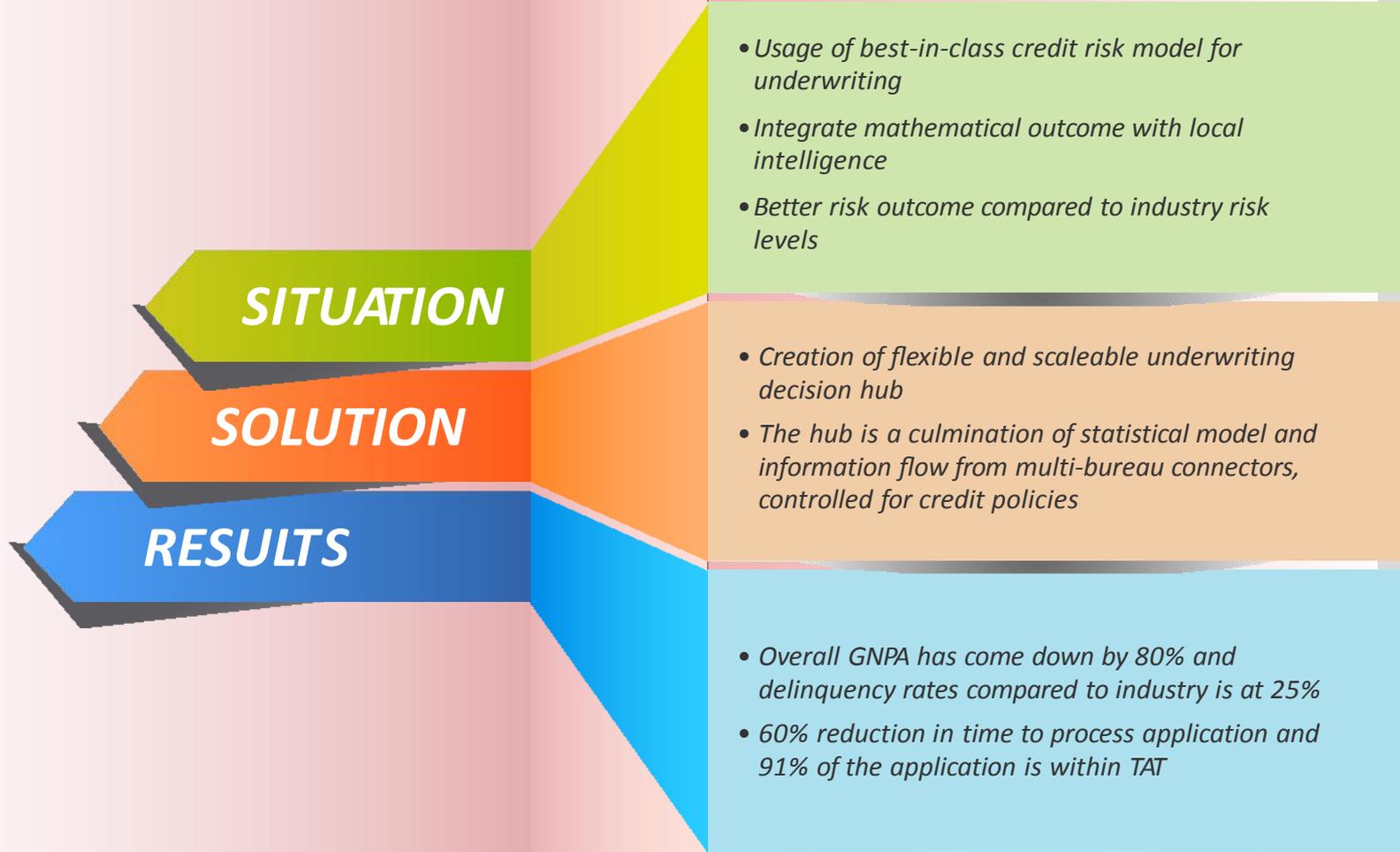
Banking

Geography

India

Category

Predictive



ATM Cash Forecasting

Organisation

Citibank

Client

Citibank

Vertical

Banking

Geography

India

Category

Predictive

SITUATION

- *Minimise surplus cash level in ATMs as significant opportunity cost is incurred in keeping idle cash in ATMs*

SOLUTION

- *Accurate prediction of daily cash demand at individual ATMs*
- *Optimisation of ATM loading schedule to reduce EOD balances, subject to network level constraints*

RESULTS

- *Bringing down the surplus cash level (taken as ratio of EOD balance to daily cash demand) has resulted in an opportunity cost save of 17%*

Customer Centricity

Organisation

HDFC Bank

Client

HDFC Bank

Vertical

Banking

Geography

India

Category

Predictive



Mortgage Survival Model

Organisation

WNS Global Services

Client

Leading US Bank

Vertical

Banking

Geography

United States

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Mortgage customers who had trouble in repayment due to job loss, recession, illness etc. were offered modification in payment, term and rate
- Predict the probability of survival of those customers for the next 12 months

- A 12 month probability of survival was generated using:
- Univariate analysis of categorical and continuous variables
 - Stepwise Cox proportional hazard regression was run for all significant variables

- Survival model accurately predicted the default and the difference in actual vs predicted was 2% overall
- Customer attrition was reduced by 12% within a 12 month timeframe

Application Scorecard for MSME Businesses

Organisation

YES Bank

Client

YES Bank

Vertical

Banking

Geography

India

Category

Predictive





**ANALYTICS IN
TELECOM**



ANALYTICS IN TELECOM

Telecom analytics encompass sophisticated Business Intelligence (BI) technologies that are packaged to satisfy the complex requirements of telecom organisations.

These include increasing sales, reducing churn and fraud, improving risk management and decreasing operational costs. Analytics solutions usually extend beyond the capabilities of regular BI solutions for reporting and dashboarding to include capabilities ranging from ad-hoc querying and multi-dimensional analyses to predictive and descriptive modeling, data mining, text analytics, forecasting and optimisation.

The adoption of analytics in telecommunications is intended to improve visibility into core operations, internal processes and market conditions, discern trends and establish forecasts. Future analytics will also include data from systems beyond traditional billing and mediation sources.

These will include deep packet inspection, home subscriber server, video optimisation equipment and on-device clients, among others.

Key areas of analytics applications:

Network Data Analysis

- *Proactive network monitoring*
- *Capacity planning*
- *Revenue assurance*
- *Network & Route Optimization*

Subscriber Data Analysis

- *Subscriber profiling*
- *Social network modeling and analysis*
- *Personalised advertising*
- *Upselling and innovative tariffs*
- *Churn management*
- *New services & pricing*

Mobile Money Life Cycle Analysis

Organisation

ABIBA Systems

Client

Telecom operator in Africa

Vertical

Telecom

Geography

Africa

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Increase mobile money subscriptions
- Increase revenues from existing customers
- Reduce overall mobile money acquisition cost

- Increase in subscriptions achieved through influencer models, acquisition score predictions
- Increase in revenues of existing customers attained through behavioural models, win back score predictions, upsell/cross-sell score predictions

- 25% increment in acquisition of mobile money subscribers compared to the last 3 months average
- Odds of finding acquisition increased from 1 in 275 to 1 in 79

Integrated Solution for Enhanced Network Experience Management

Organisation

Accenture

Client

Tier 1 converged operator

Vertical

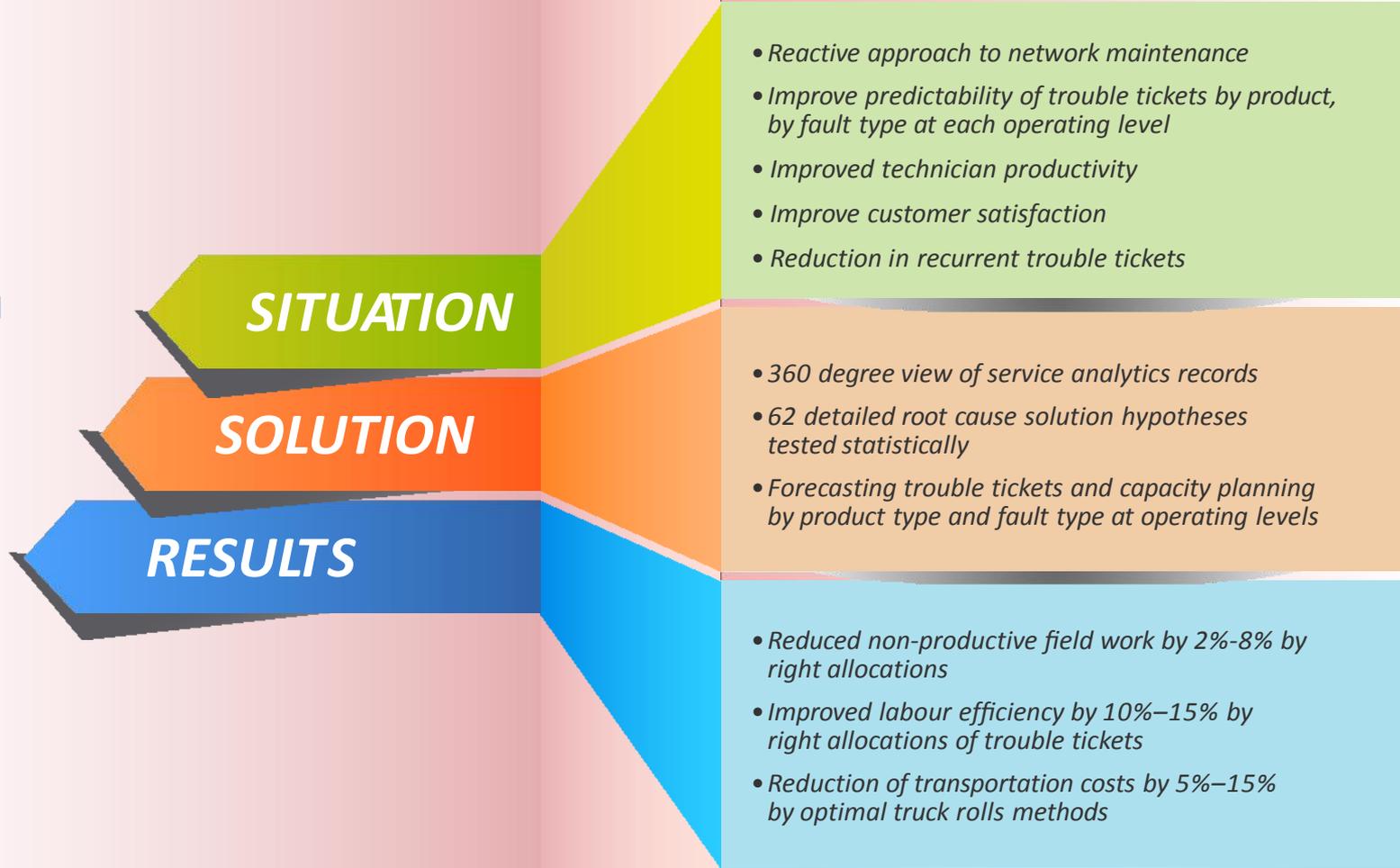
Telecom

Geography

Latin America

Category

Predictive





ANALYTICS IN
INSURANCE





ANALYTICS IN INSURANCE

Insurance companies have long understood the importance of analytics. Today, the shifting competitive landscape and customer demands are pressuring industry players to better personalise their products, services and interactions. Advanced analytics can provide novel solutions to these challenges.

Every day, senior executives in the insurance industry must make complex, business-critical decisions that take into account a wide array of performance metrics and market intelligence.

Facing rigorous regulation and complex information-rich value chains, insurance companies have an absolute need for detailed, granular knowledge of what is happening in their operations, together with an ability to analyse this information in real-time to investigate specific events, emerging trends and future what-if scenarios.

Key areas of analytics applications:

- *Customer acquisition - Prospect scoring models can be very successful in improving the efficiency of customer acquisition activities*
- *Customer retention - Predict likelihood of customers churning or lapsing and help monitor portfolio quality over time*
- *Cross-sell/upsell - Target customers with the right cross-sell and upsell offers at the right time*
- *Premium pricing*
- *Insurance fraud detection*
- *Customer lifetime value*

Automated System for Fraud Identification

Organisation

AXA Business Services

Client

AXA Entities

Vertical

Insurance

Geography

Global

Category

Predictive

SITUATION

- Identify fraud using an automated system with minimum misclassification rate thereby optimising investigation cost
- Build a counter fraud, abuse and waste analytical model using historical claims data

SOLUTION

- Develop business rules to filter fraudulent claims and behaviours from the predicted model
- Detect individual abnormal patterns
- Discover associative link analysis to understand known and predicted fraud

RESULTS

- Huge amount of savings on claim investigation spend

Prediction of Early Claim Propensity

Organisation

Max Life Insurance

Client

Max Life Insurance

Vertical

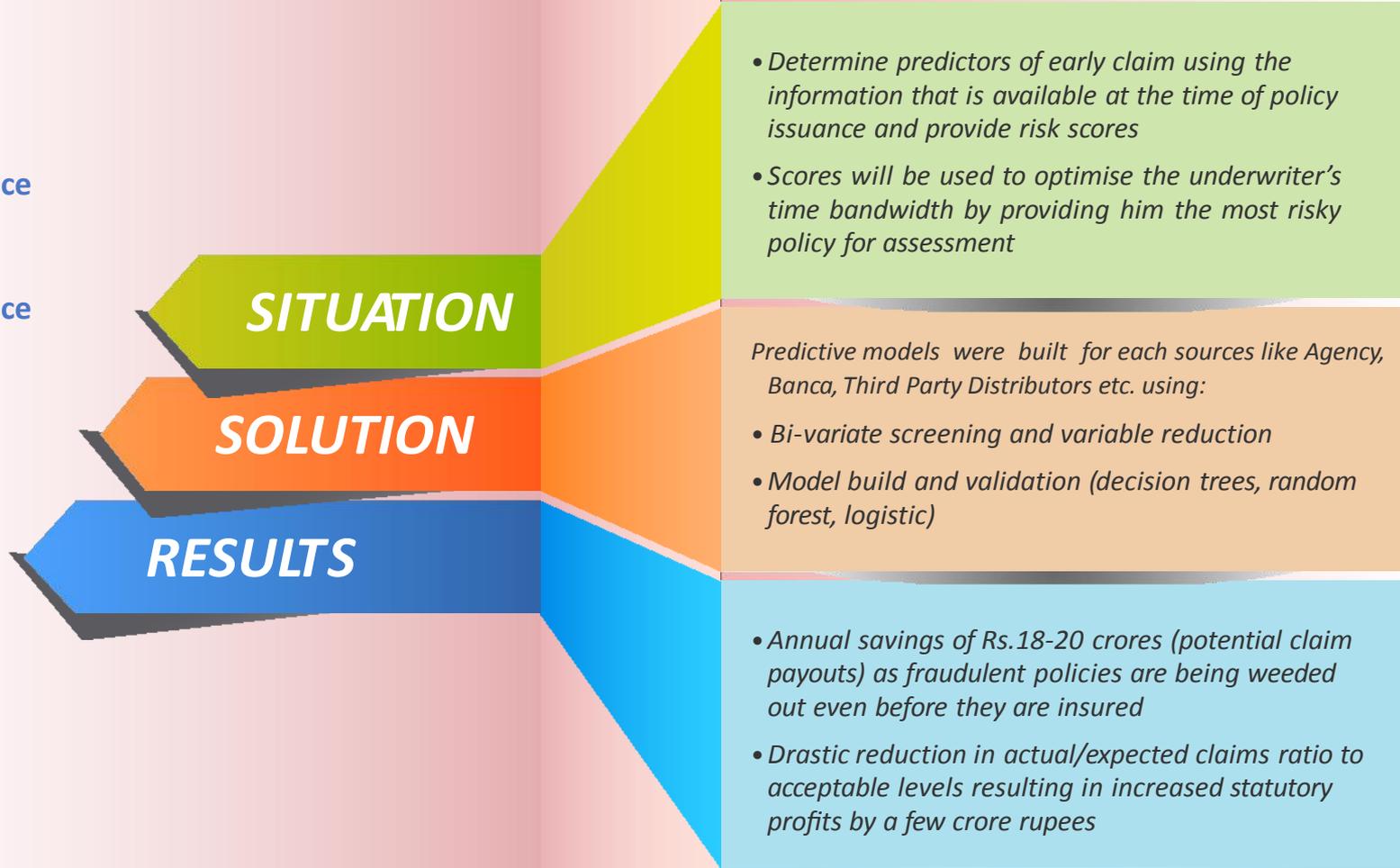
Insurance

Geography

India

Category

Predictive



Improve Insurance Premium Renewal Rate

Organisation

Minacs

Client

Top life insurer

Vertical

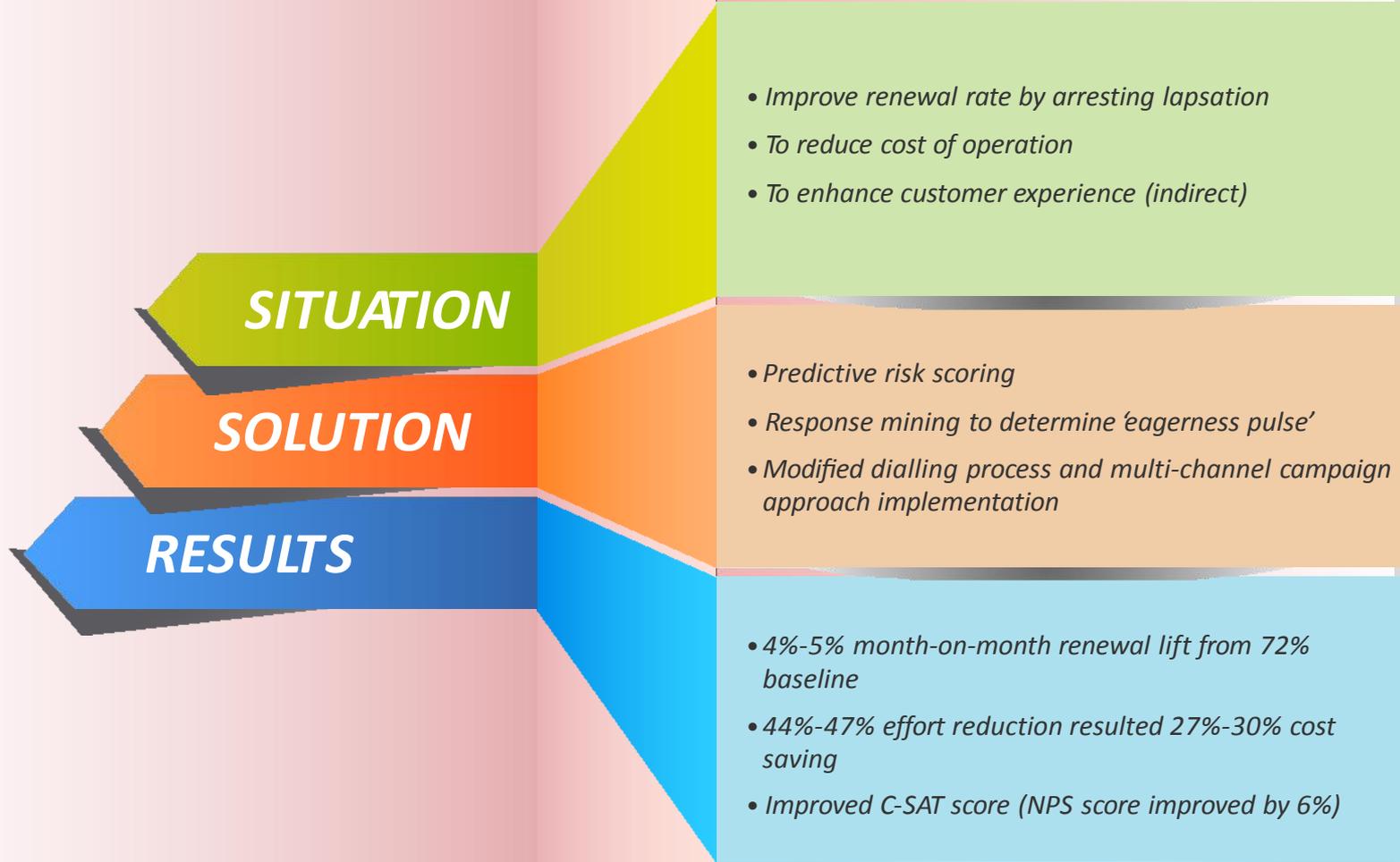
Insurance

Geography

Global

Category

Predictive



Customer Engagement

Organisation

Axtria

Client

Auto insurance

Vertical

Insurance

Geography

Global

Category

Prescriptive



Predict Pure Premium Amount

Organisation

NIIT Technologies

Client

A P&C insurance company

Vertical

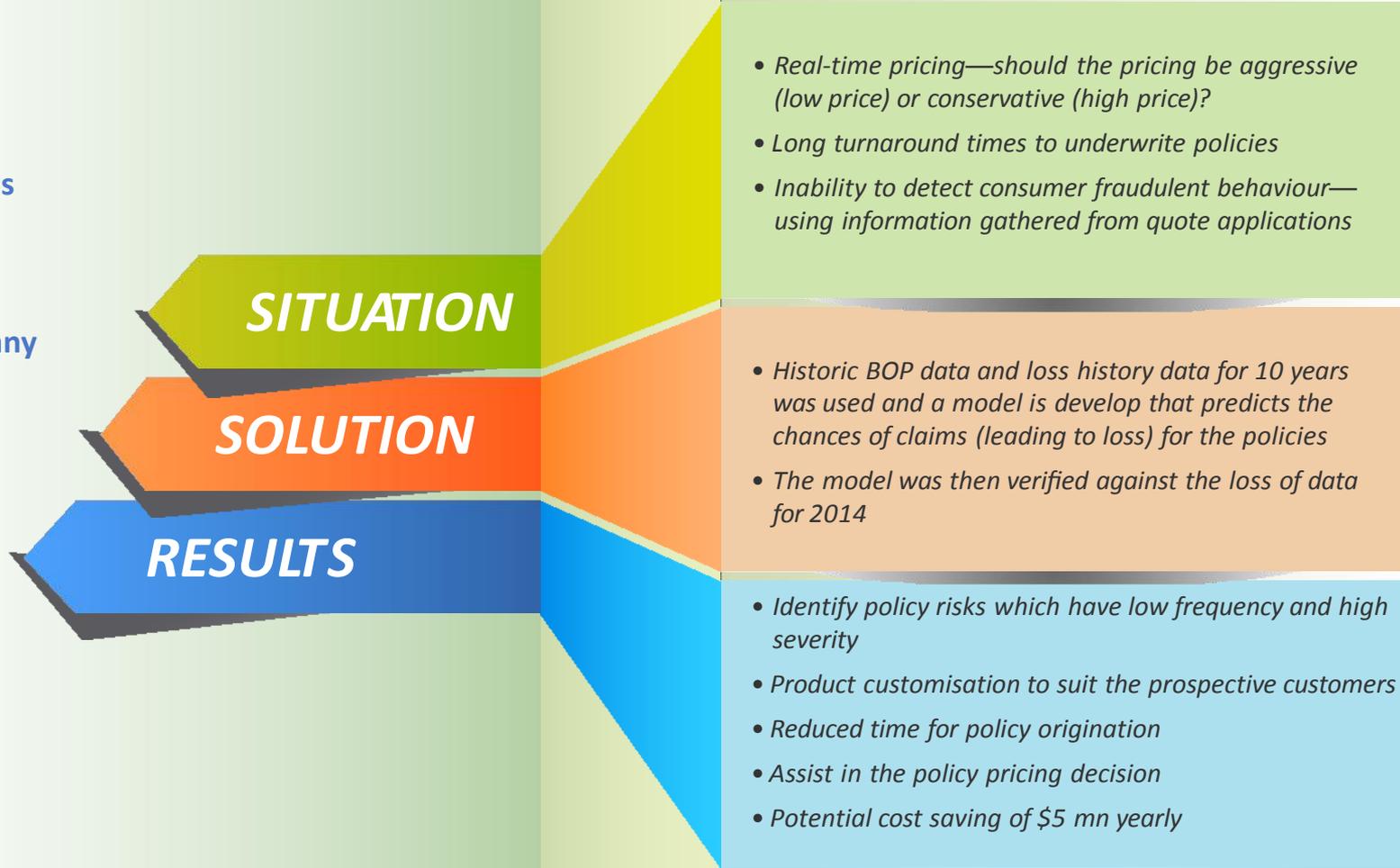
Insurance

Geography

United States

Category

Prescriptive



Insurance Solution for Delhi Earthquake Risk

Organisation

Swiss Re Shared Services

Client

Government of India

Vertical

Insurance

Geography

India

Category

Prescriptive

SITUATION

SOLUTION

RESULTS

- Traditional insurance products may not work as the government needs resources for all kind of recovery operations after a disaster
- Insurance claims settlement can be quite complex and take a long time before funds are available due to lack of adequate resources for recovery operations after a disaster

- 'Cat in the Box' triggers payout to the client when the centre of an earthquake of certain magnitude or greater occurs in a predefined box around Delhi
- Stochastic simulation to produce a probabilistic earthquake catalogue

- Better natural catastrophe risk management in the Delhi region. This solution will shortly be discussed with concerned stakeholders
- Enable quick payout by government agencies after a catastrophic event to facilitate fund relief and recovery operation
- Better management of Government funds



ANALYTICS IN
**AVIATION
AND
AEROSPACE**



ANALYTICS IN AVIATION AND AEROSPACE

Interestingly, the aviation sector is one of the strong proponents of capturing the data at every touch point starting from the design of aeroplane engines, dynamic data collection on engine performance to voice recording of the cabin crew in the black box. Most of the airlines religiously capture passenger information, booking/reservations transactions, various operational costs, cargo information, flight data, sales data, promotions data, flights routes and flights schedule to name a few. Innovative use of the data combined with analytics can uncover crucial insights needed to manage customer satisfaction, deal with dynamic fuel prices and underutilised capacity.

Nowadays, analytics territory is not just limited to airlines but has been spread to airports, aircraft manufacturers, suppliers, governments and others in the global aviation space.

Key areas of analytics applications:

- *Route optimisation*
- *Dynamic pricing*
- *eReputation*
- *Aircraft maintenance*
- *Real-time health monitoring of aircraft*
- *Operational analytics*

Data-driven Forecasting for a Leading ME Airlines

Organisation

TCG Digital Solutions

Client

A leading ME airlines

Vertical

Aviation

Geography

Middle East

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Lack of a scientific revenue forecasting process became a bottleneck for driving efficiencies
- Multiple factors like fuel costs, seasonal changes, competitive landscape impacted ticket pricing and made it difficult to manage revenue forecasting with reasonable amount of accuracy

- Scientific data-driven forecasting solution with a basket of algorithms
- Recommendations engine that selects the 'best-fit' statistical model for a given scenario
- Auto feed of forecast output to reporting systems
- Provided 'what-if' scenario planning capabilities

- Better operational decision making, driving efficient revenue budgeting and optimal resource planning
- Dynamic forecasting reports to help strategic decisions at different commercial levels

Analytics Solution for a Leading Aircraft Engine Supplier Firm

Organisation

Genpact

Client

A leading aircraft engine supplier firm

Vertical

Aerospace

Geography

Worldwide

Category

Prescriptive



**ANALYTICS IN
RETAIL / CPG /
ECOMMERCE /
CONSUMER
DURABLES**





RETAIL / CPG / ECOMMERCE / CONSUMER DURABLES

Analytics have become one of the most powerful tools available to retailers, and are being used for a broad variety of purposes. Aggressive adoption and exploitation of analytics has led to competitive advantage among some of the world's most successful retailers. The analytical focus of retailers should also be influenced by their economic environments. Loyalty, product selection, and clienteling analytics are typically focused on growing revenues in periods of economic growth. In difficult economic times, however, hard-pressed retailers are more likely to pursue applications such as price optimization, promotion effectiveness, marketing mix allocation, and labor force analytics, each of which can reduce costs and improve profitability relatively quickly and with relatively low investment.

Since integration is critical for advanced analytics, most sophisticated retailers have built an enterprise data warehouse for key analytical applications to draw from.

Key areas of analytics applications:

- *Develop close relationships with customers based on a deep understanding of their behaviors and needs*
- *Deliver the targeted advertising, promotions and product offers to customers that will motivate them to buy*
- *Balance inventory with demand so you're never out of stock or carrying excess inventory*
- *Charge exactly the price that customers are willing to pay at any moment*
- *Determine the best use of marketing investments*
- *Locate stores, distribution centers, and other facilities in optimal locations*

Social Media Analytics

Organisation

Capgemini

Client

Leading FMCG company in India

Vertical

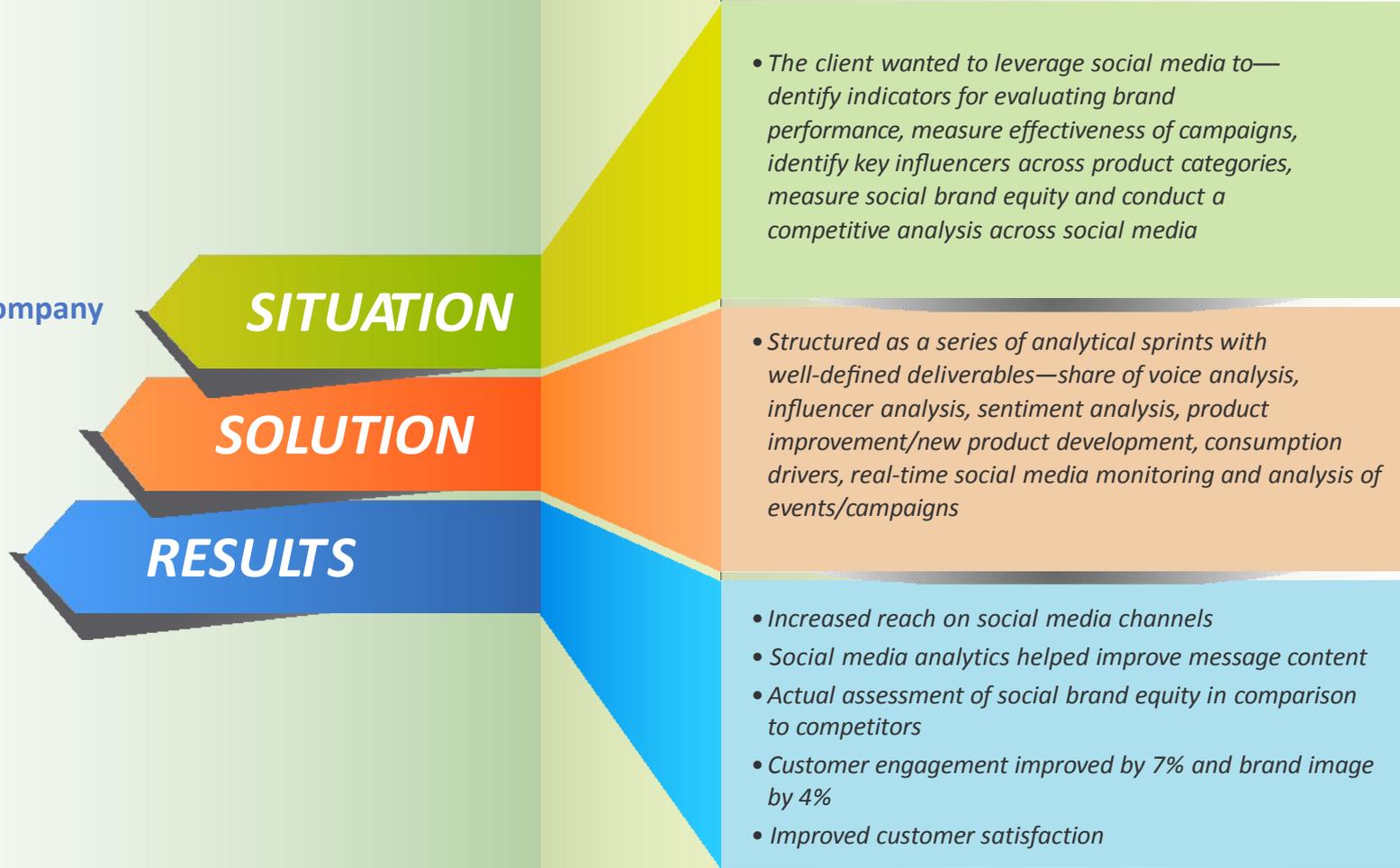
CPG

Geography

Global

Category

Prescriptive



Analytics Driven Personalisation and Recommendation Engine

Organisation

Happiest Minds Technologies

Client

Leading US apparel retailer

Vertical

Retail

Geography

United States

Category

Predictive

SITUATION

SOLUTION

RESULTS

- Client was facing challenges with low understanding of their customer, resulting in poor response in mass marketing and low cross-sell/upsell ratios, low repeat purchases and diminished customer loyalty

- Near real time personalisation and product recommendation engine
- Multichannel optimisation (kiosks, web, mobile)

- 10-12% improvement in conversion for frequently bought strategy
- Multi million dollars in incremental revenue from kiosks based on recommender algorithms

DemandPlanner – Daily SKU Demand Forecasting

Organisation

SIBIA Analytics

Client

**Retail Chains
(Pharma, Apparel, Grocery)**

Vertical

Retail

Geography

**India
United States**

Category

Predictive



Matrimony.com's Intelligent Matchmaking Algorithm

Organisation

Matrimony.com

Client

Matrimony.com

Vertical

eConsumer

Geography

Worldwide

Category

Prescriptive



Market Mix Model

Organisation

Fractal Analytics

Client

Fortune 500 E-com brand

Vertical

Retail

Geography

Worldwide

Category

Prescriptive



Personalising Offerings to Customer Needs

Organisation

Manthan Software Services

Client

A Leading Retail Group

Vertical

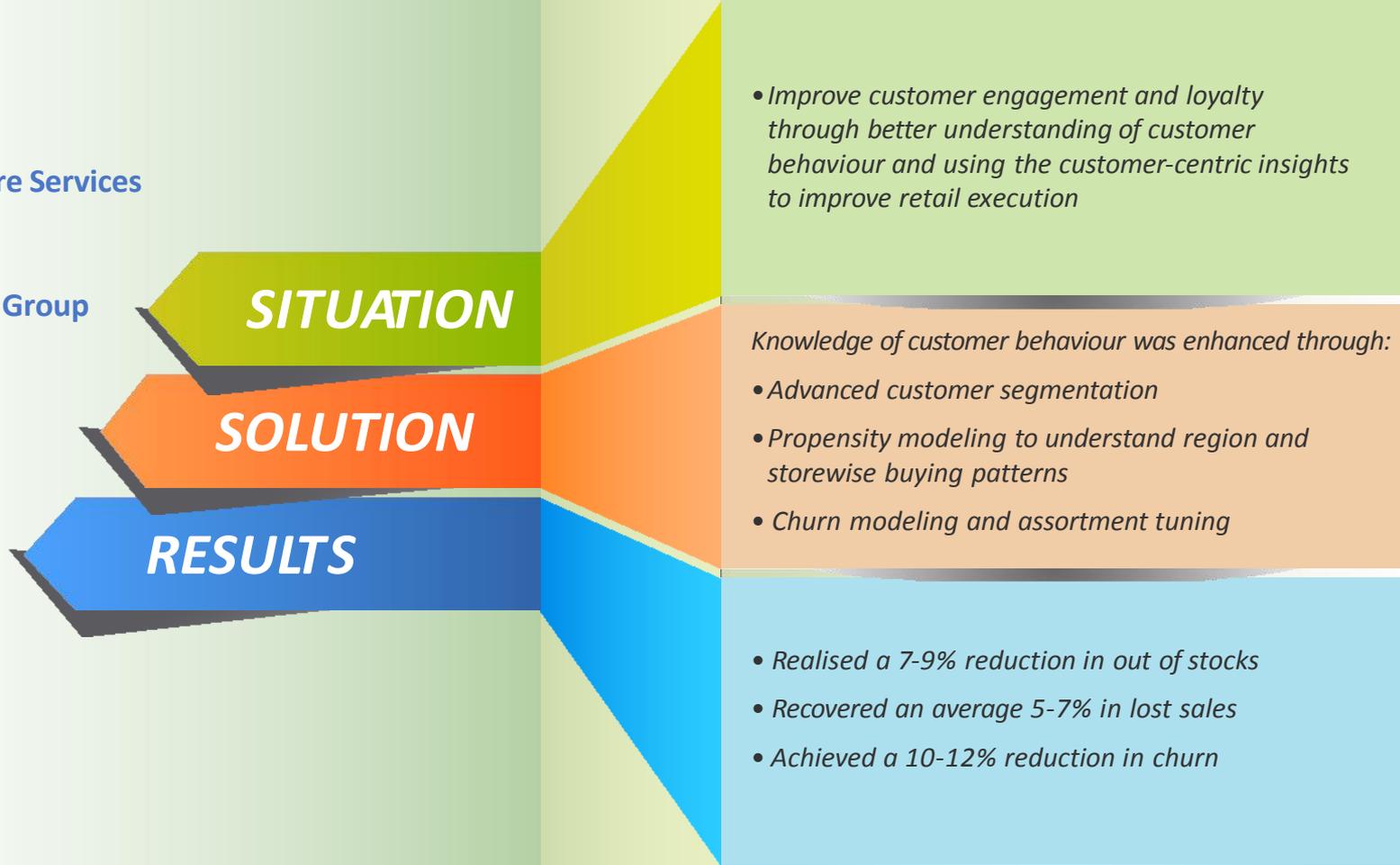
Retail

Geography

India

Category

Prescriptive



- *Improve customer engagement and loyalty through better understanding of customer behaviour and using the customer-centric insights to improve retail execution*

Knowledge of customer behaviour was enhanced through:

- *Advanced customer segmentation*
- *Propensity modeling to understand region and storewise buying patterns*
- *Churn modeling and assortment tuning*

- *Realised a 7-9% reduction in out of stocks*
- *Recovered an average 5-7% in lost sales*
- *Achieved a 10-12% reduction in churn*

Omni-channel Supply Chain Simulation and Optimisation

Organisation

Target Corporation

Client

Target Corporation

Vertical

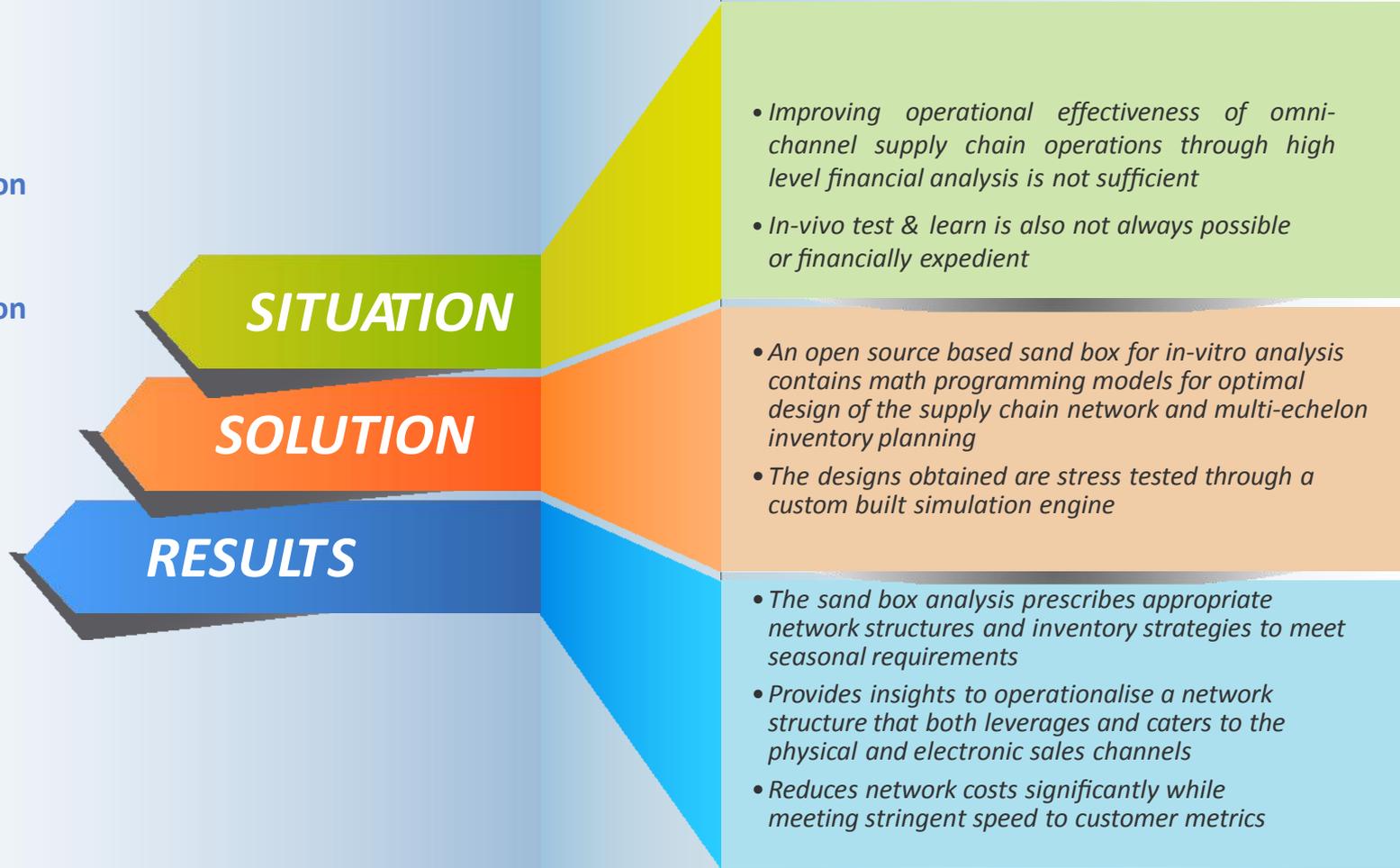
Retail

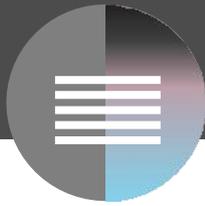
Geography

United States

Category

Prescriptive





ANALYTICS IN ALL OTHER INDUSTRIES

Analytics is playing a critical role for NGOs, for various government departments, for transport facilities and other organisations. It is helping these organisations that have entered the analytics landscape very recently, with data-driven decision making.

Key areas of analytics applications:

- *Donor profiling*
- *Route optimisation*
- *Citizen profiling*

Compensation Modeler

Organisation

ADP India

Client

Multiple clients

Vertical

Multiple

Geography

Global

Category

Prescriptive



Recruitment Analysis

Organisation

Agora Analytics

Client

Global staffing company

Vertical

Multiple

Geography

Global

Category

Predictive

SITUATION

SOLUTION

RESULTS

- *Difficulty in interpreting the 'real' requirements behind a JD. Many needs and requirements are not explicitly stated in the JD*
- *Reduce time wasted in searching for the appropriate resumes*

A custom built product: Recruiter's Delight was deployed to:

- *Semantic matching of resumes with a JD*
- *Applying shortlisting context by observing all the screen-rejections done by the hiring manager*
- *Overlaying the shortlisting context with the hiring context by observing historic hiring patterns*

- *Improved speed of hiring by 200%*
- *Cut cost of hiring by 50%*

Improve Outcomes of Fund Raising

Organisation

Annik Systems

Client

American NGO

Vertical

Not for profit

Geography

Global

Category

Descriptive



Home Appliances Spare Part Recommender

Organisation

Robert Bosch Engineering and Business Solutions

Client

An appliances company

Vertical

Consumer durables

Geography

Global

Category

Prescriptive

SITUATION

SOLUTION

RESULTS

- Time taken by technicians to identify the correct resolution and to repair the problem is very high
- Longer repair resolution time affects customer satisfaction level

- An automated recommendation system to recommend the right spare part to be carried by the technician for a given customer complaint

- Reduction in repair resolution time
- Reduction in carrying cost
- Optimal stock combinations of spare parts

Market Mix Models

Organisation

Analytic Edge

Client

Health & beauty care manufacturer

Vertical

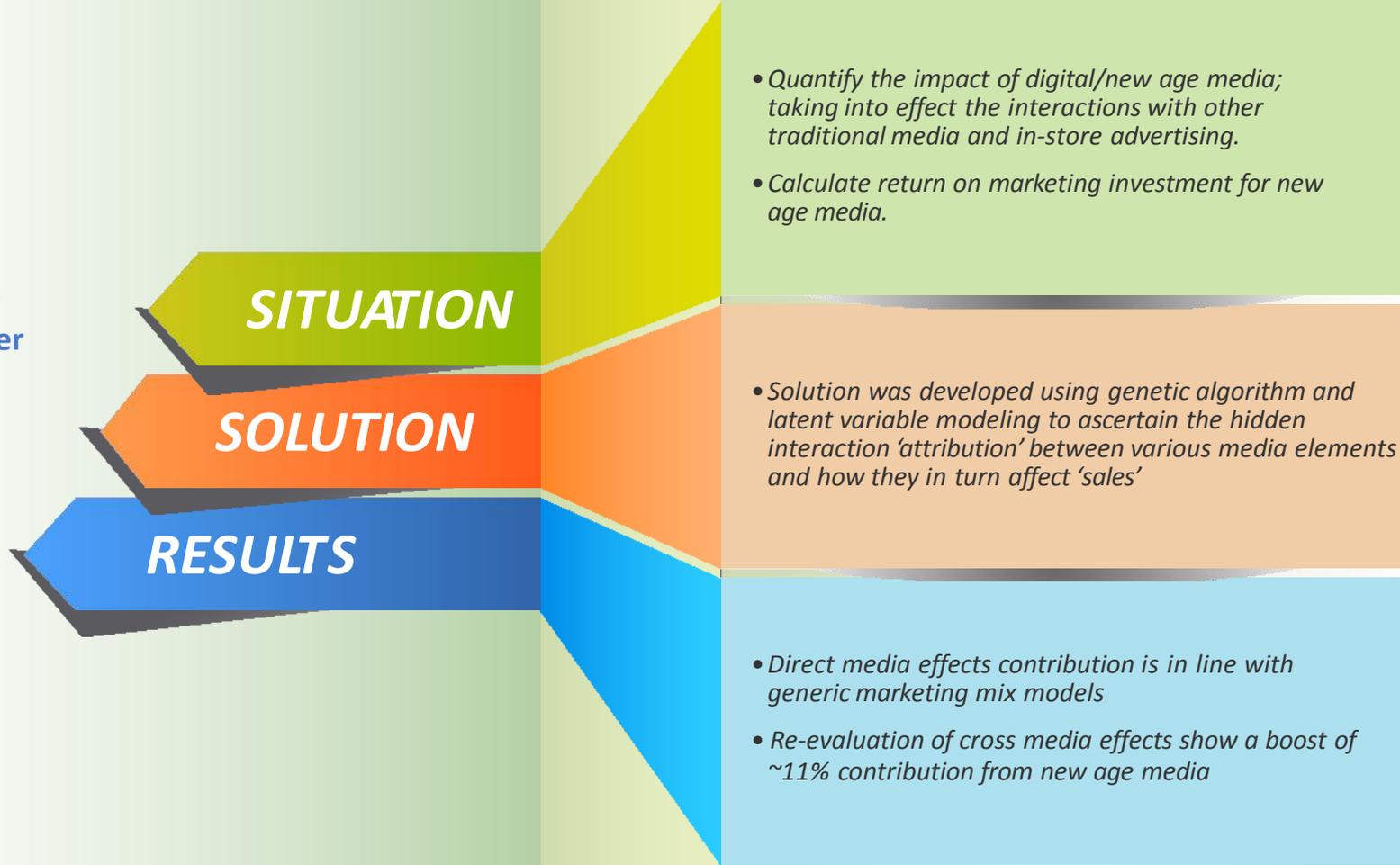
CPG

Geography

Global

Category

Prescriptive



Demand Forecast Accuracy

Organisation

Bridgei2i Analytics Solutions

Client

A technology company

Vertical

Technology

Geography

Global

Category

Predictive

SITUATION

SOLUTION

RESULTS

Low accuracy in demand forecasting due to:

- High SKU count (40,000)
- Volatile demand
- Short product lifecycle

- Built a demand planning system to calibrate the optimal inventory requirement
- Powerful forecast models for 'Big Deal' planning and volatile SKUs

- Improved forecast accuracy of the demand planning process by 20%
- Improved lead-time attainment by 10%
- Reduce inventory targets by 15%

Personal Business Analytics Platform for 'Reasons to Call'

Organisation

FirstRain India

Client

Technology solutions company

Vertical

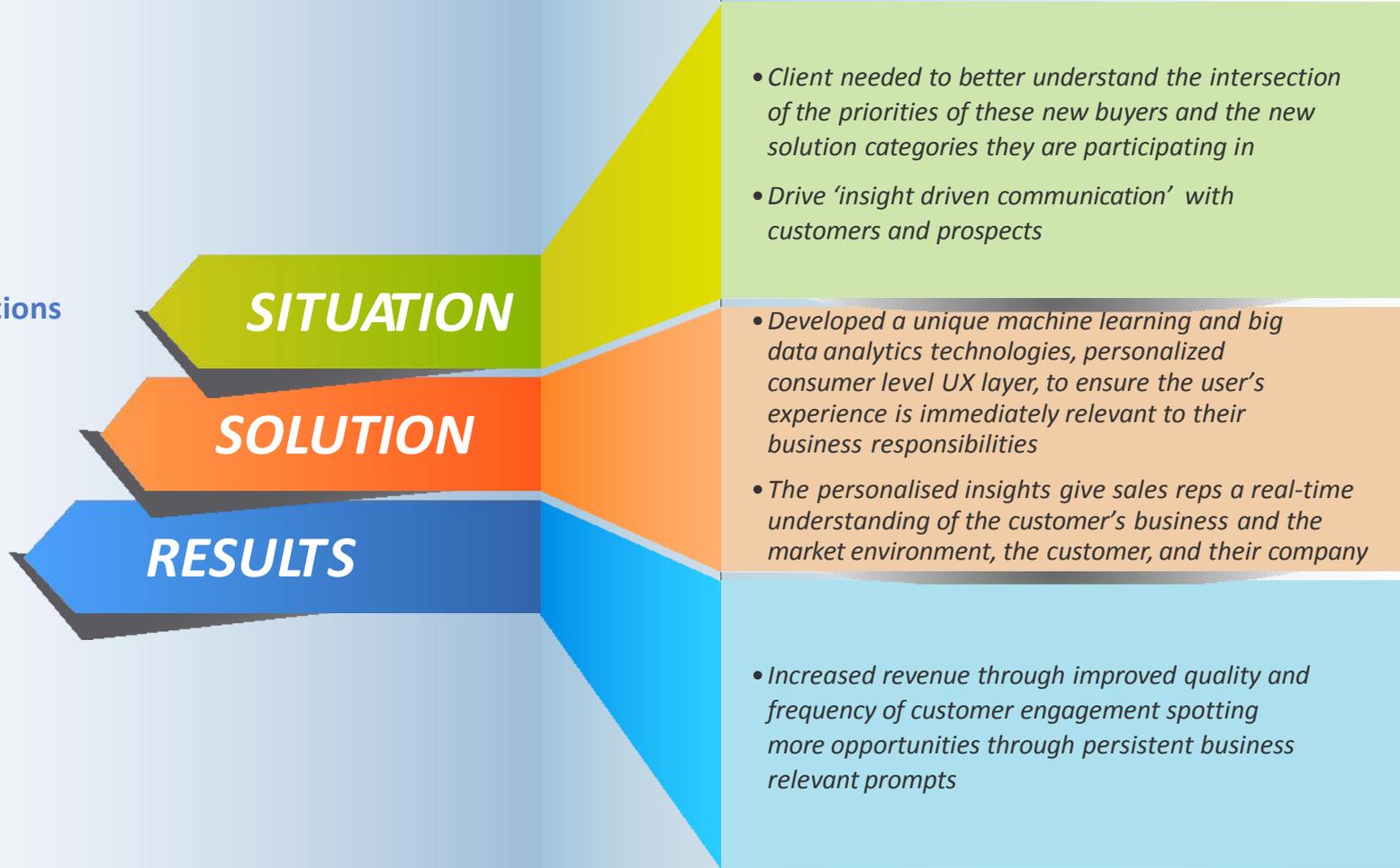
Technology and Consulting

Geography

Global

Category

Descriptive



Patent Analytics App

Organisation

Gramener

Client

Multiple

Vertical

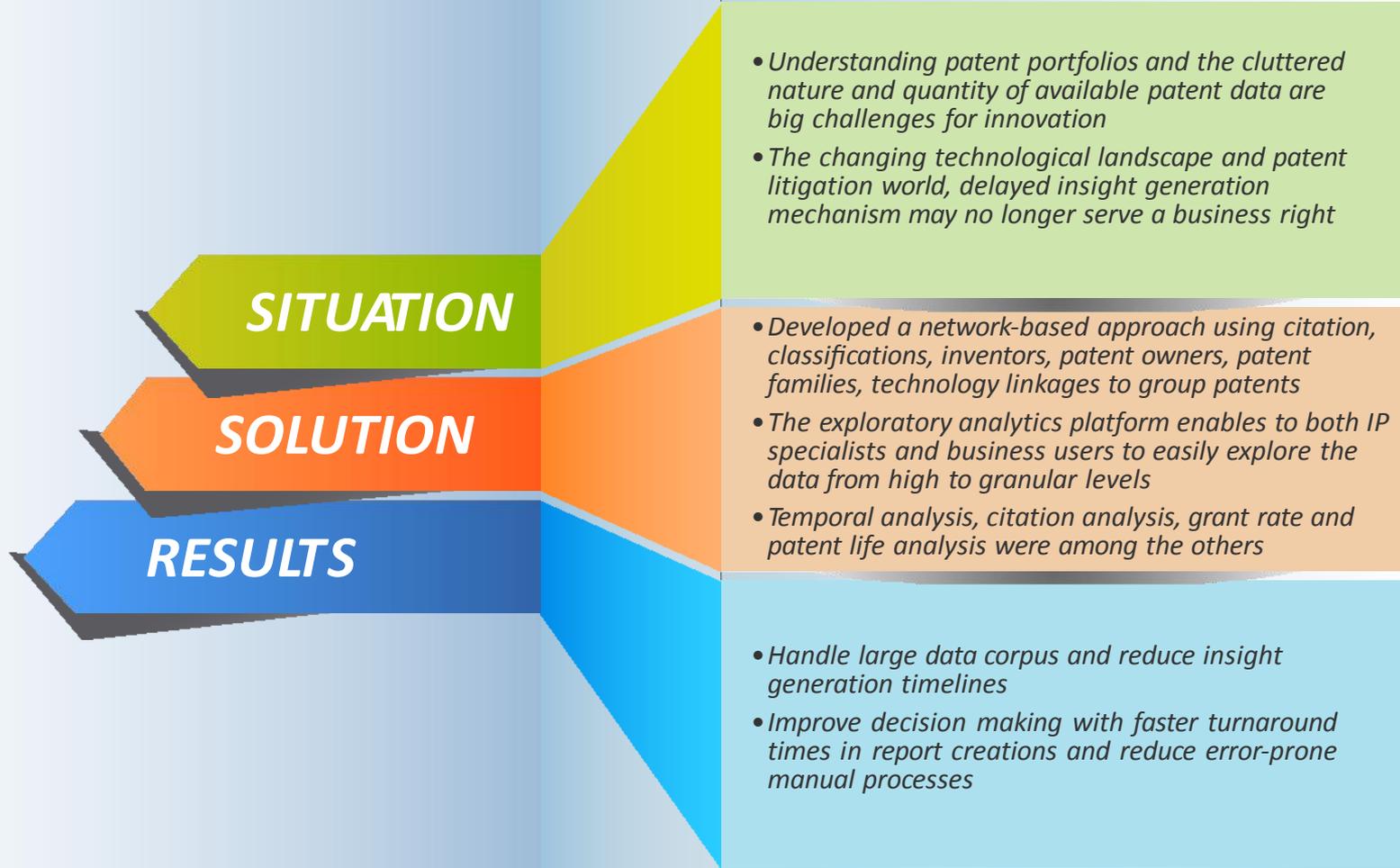
Technology & Consulting

Geography

Global

Category

Descriptive



Big Data Enabled Architecture and Platform

Organisation

GrayMatter Software Services

Client

Government of a South Asian country

Vertical

Government

Geography

India

Category

Descriptive



- *No conceivable storage platform was available to manage 1.3 billion records and 37TB of data per month including unstructured data like biometrics and transactional data from multiple sources*
- *Lack of tool for data aggregation*

- *Solution was to built a complex Big Data Architecture with with 150 nodes using MapR distribution and Pentaho's PDI for data integration and data processing in Hadoop*

- *More than 5,000 vendor agencies are using this platform today seamlessly and successfully*
- *Authentication of user information executed successfully which was a fundamental need*

Real-time Trade Monitoring for a Leading Stock Exchange of India

Organisation

Hitachi India

Client

Leading Stock Exchange of India

Vertical

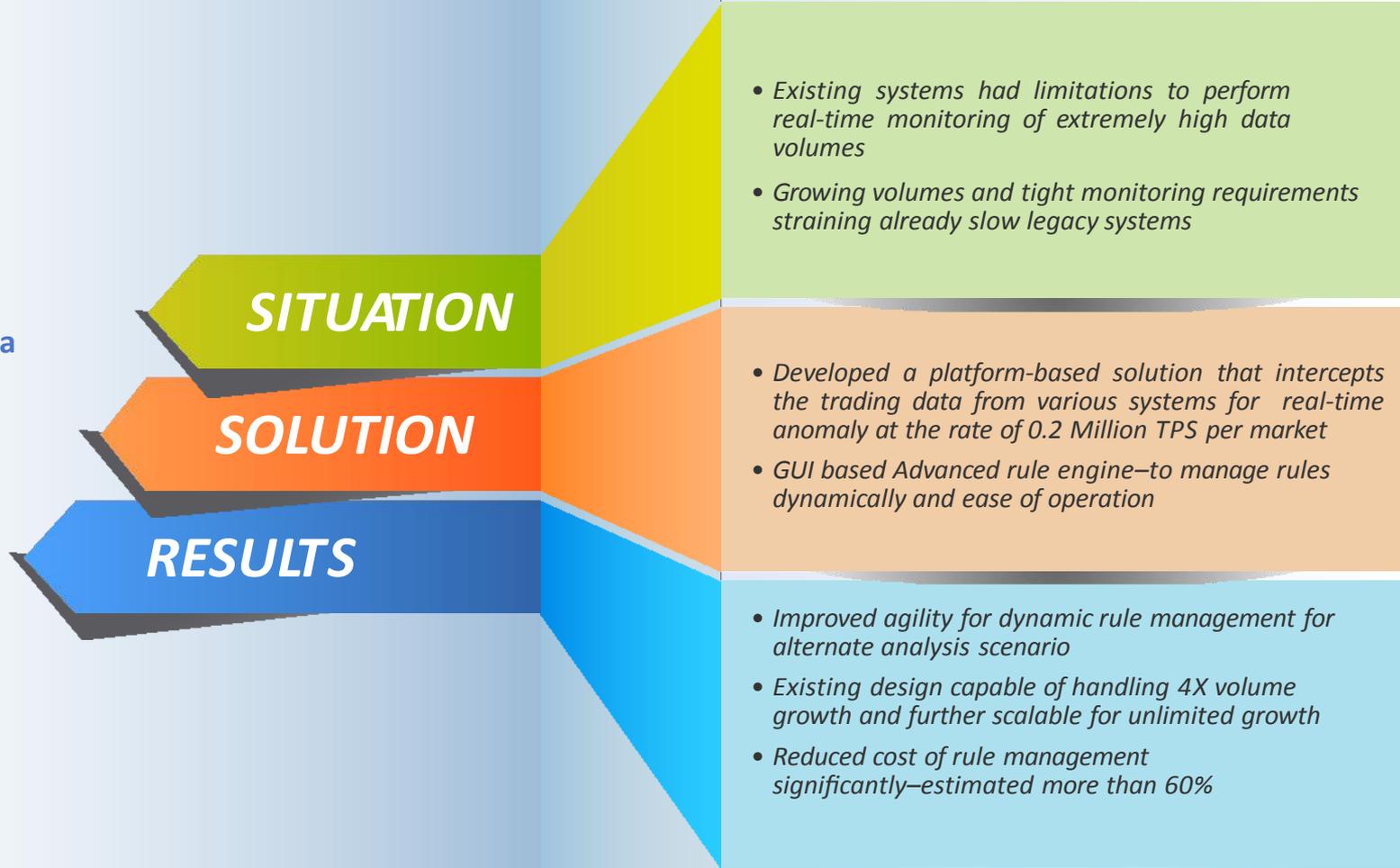
Stock Exchange

Geography

India

Category

Descriptive



Organisation

Capgemini

Client

Government

Vertical

Government

Geography

India

Category

Prescriptive

SITUATION

SOLUTION

RESULTS

- Millions of transactions running into billions of rupees in sales, purchase and revenue
- Multiple connections between traders making a very complex network
- Many circular transaction between traders, several of these are legitimate. However, few circular trades are part of carousel fraud
- No out-of-the-box algorithm available within the existing technology stack to identify this type of fraud

- Developed a proprietary algorithm to detect carousel fraud and put in place a process to score and flag suspicious transactions
- Algorithm coded using existing technology stack, avoiding the need to purchase specialised software or technology modules
- Interactive interface that allows investigators to view and process flagged transactions
- Drill-down on transactions involving up to 6 levels

- Increased control to prevent fraud
- Stop infusion of fraudulent money into system
- Data driven strategy to target specific profiles of traders more effectively
- Higher and more effective utilisation for field task officers
- Expedite resolution of appeal and litigation cases which were stuck due to lack of evidence

Software Licensing Piracy

Organisation

Ideal Analytics

Client

An MNC

Vertical

Technology

Geography

Worldwide

Category

Prescriptive





ANALYTICS IN HOSPITALITY

Over the past few years, hotel companies have been investing in reporting and business intelligence technology solutions to improve decision making. More recently, a number of companies have been designing strategic initiatives to move toward a more consistent use of data across the enterprise. But few companies have developed an analytical capability to manage the vast quantity of information available.

Every hotelier will have different objectives in how they want to leverage existing data, acquire new data and use it in combination for improved results. But for most hoteliers data remains an underused and underappreciated asset. Hoteliers capture loyalty information, for example, but few go beyond loyalty tiers in how they consistently view and take action with their guests.

With analytics, hoteliers can use the data they capture to go beyond their traditional loyalty programs and deepen their knowledge of guests—to develop a more granular understanding of segment behaviour, needs, and expectations; identify profitable customer segments and their buying preferences; and identify opportunities to attract new guests.

Key areas of analytics applications:

- *Dynamic pricing of room rates*
- *Work force analytics*
- *Operation and supply chain analytics*
- *Customer loyalty*
- *Customer profiling*
- *eReputation*

Reducing Customer Churn

Organisation

Hexaware Technologies

Client

A UK customer

Vertical

Services

Geography

UK

Category

Predictive



Improve RevPAR for a Hotel Chain

Organisation

eClerx Services

Client

A top UK Hotel Chain

Vertical

Hospitality

Geography

UK

Category

Prescriptive



• Client was not able to capture the right share of demand which was generated by an event around each hotel location due to lack of effective pricing in a highly competitive environment

- Gathered and analysed data around hotel attributes, competition, event so as to model demand
- Database was designed with business rules to store the data post cleansing for an efficient ETL
- Solution enables revenue maximisation for hotels by recommending optimum stay prices on a daily basis for stay dates during an event

• Model demonstrated potential revenue increase of at least 11% YoY which amounts to £ 122,000 per hotel by recommending optimum prices everyday by analysing competitor prices, booking capacity and event impact to maximise overall revenue for any given booking date



ANALYTICS IN AGRICULTURE

World's demand for food will grow significantly over the next several decades as a result of population growth and a burgeoning middle class in the developing world. Farmers have traditionally relied on intuition and experience. Yet agriculture is ultimately driven by the mathematics of science; balancing the pH levels of soil, the rate of nitrogen depletion and many other factors for optimum growth of grains and produce. Inputs of seed, fertilizer, water and sunlight, produce an output of crops that must be harvested at the right time using a precise mix of equipment and labor. Protein and dairy industries must also balance a myriad of factors to optimise yields from their livestock.

The goal is to use information technology to harness the vast amount of structured and unstructured data now available through field and equipment sensors, and from third-party data sources, to provide fact and math-based decision support to augment traditional farmer intuition and experience. New technologies, such as predictive analytics and commodity price optimisation can also help the agri businesses anticipate and adjust profitably to the marketplace, weather and other conditions that typically leave farmers vulnerable.

Key areas of analytics applications:

- *Geo-mapping of crop growers*
- *Commodity price optimisation*
- *Crop yield estimation*
- *Field force effectiveness*

Predicting Reserve Price for Tea

Organisation

Mjunction Services

Client

Multiple

Vertical

Agriculture

Geography

India

Category

Predictive



Kg2ton - Crop Production Management System

Organisation

iConcept Software Services

Client

International agricultural co-op group

Vertical

Agriculture

Geography

Worldwide

Category

Descriptive





APPENDIX



ABIBA

ABIBA Systems is a leading provider of advanced big data analytics. For more information please visit www.abibasystems.com



Absolut Data

Absolutdata Research and Analytics is a consulting-oriented analytics and research firm. For more information please visit www.absolutdata.com



Accenture

Accenture plc is a multinational management consulting, technology services and outsourcing company. For more information please visit www.accenture.com



ADP

ADP is a comprehensive global provider of cloud-based Human Capital Management (HCM) solutions. For more information please visit www.adp.com



Agora

Agora Analytics makes organisation capability management possible. For more information please visit www.agoranalytics.com



Analytic Edge

Analytic Edge is a provider of high impact business solutions leveraging advanced analytics and technology. For more information please visit www.analytic-edge.com



Annik

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Robert Bosch Engineering and Business Solutions Private Limited (RBEI), a 100% owned subsidiary of Robert Bosch GmbH, is a technology focused organisation with a strong legacy in engineering and IT services in the manufacturing and automotive industry. For more information please visit www.bosch.com



Bridge2i

BRIDGEi2i provides Business Analytics Solutions to enterprises globally, enabling them to achieve accelerated business impact harnessing the power of data. For more information please visit www.bridgei2i.com



AXA Business Services

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Axis Bank

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Business Brio

Big Data and Analytics Consulting/Projects for corporates and social development organisations. For more information please visit www.businessbrio.com



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DIMTS

Delhi Integrated Multi-Modal Transit System Limited is an urban transport and infrastructure development company committed to build and deliver quality infrastructure. For more information please visit www.dimts.in



eClerx

eClerx provides critical business operations services to more than 30 global Fortune 500 clients, through operational support, data management and analytics solutions. For more information please visit www.eclerx.com



EXL Services

EXL Service is a provider (IT) services, decision-analytics, operation management, outsourcing and transformation services company. For more information please visit www.exlservice.com



First Rain

FirstRain decodes the complex universe of unstructured business information to build robust and highly intuitive analytics that drive smart decisions. Find more at: www.firstrain.com



Fractal Analytics

Fractal Analytics offers predictive analytics and scoring solutions for financial services, consumer products, retail and telecom sectors. For more information please visit www.fractalanalytics.com



Genpact

Genpact is a global leader in transforming and running business processes and operations, including those that are complex and industry-specific. For more information please visit www.genpact.com



Gramener

Gramener is a data visualisation and analytics product company. For more information please visit www.gramener.com



GrayMatter

A big data and data science specialist with a strong BI background, GrayMatter has implemented successful BI, Analytics and Big Data projects worldwide. For more information please visit www.graymatter.co.in



Happiest Minds

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Hexaware Technologies Ltd., a global IT services provider, headquartered in Mumbai, specialising in delivering complex technology solutions. For more information please visit www.hexaware.com



Hitachi

Hitachi is a highly diversified company that operates eleven business segments. For more information please visit www.hitachi.com



HP

HP Analytics and Data Management services (A&DM) align the right people, processes, and technology to help clients analyse and act on their information, Do visit www.hp.com for more



iConcept

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Ideal Analytics

A self-service, real-time, on-demand analytics platform company that provides SaaS based cloud and on-premise solutions. For more information please visit www.ideal-analytics.com



L&T Technology Services

The company focuses on the engineering services space, partnering with many of the Fortune 500 companies globally. For more information log on: <http://www.lnttechservices.com>



Manthan

Manthan serves as the Chief Analytics Officer to over 170 leading retail and consumer group organisations across 21 countries. For more information please visit www.manthan.com

matrimony.com

Matrimony.com

A signature internet conglomerate, managing marquee brands such as BharatMatrimony.com and CommunityMatrimony.com. For more information please visit www.matrimony.com



Max Life Insurance

Max Life Insurance is a leading life insurance company in India. For more information please visit www.maxlifeinsurance.com

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Minacs

Minacs is a business and technology outsourcing company. For more information please visit www.minacs.com



Mjunction

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NIIT

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Rolta

Rolta uses technology to help organisations gain valuable business insights. Their work can be seen across verticals, including Utilities, Transportation, Process, Power, Banking and Insurance. Read more at: www.rolta.com



Saama

Saama is a pure-play data science solutions company delivering Analytics Advantage to Global 2000 clients. For more information, please visit: www.saama.com



SIBIA

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Siemens

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TCG Digital (SkyTECH)

SkyTECH is part of The Chatterjee Group (TCG) – a New York based money management firm with investments across businesses. For more information please visit www.tcg-digital.com



StatLabs

Stat Decision Labs is a provider for integrated data mining and mobility solutions that helps organisations anticipate business opportunities, empower action and drive impact. For more information please visit www.statanalytics.com



Swiss Re

Swiss Re Shared Services Private Ltd. in Bangalore is a subsidiary of Swiss Reinsurance Company Ltd., Zurich. For more information please visit www.swissre.com



Target

Target Corporation is an American retailing company. It is the second-largest discount retailer in the United States. For more information please visit www.target.com



WNS

WNS is a global business processes outsourcing company providing research and customer analytics, customer care outsourcing and other services. For more information please visit www.wns.com



YES Bank

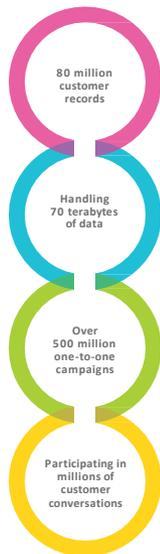
YES Bank is a state-of-the-art high quality, customer-centric, service-driven bank. For more information please visit www.yesbank.in

ABOUT HANSA CEQUITY

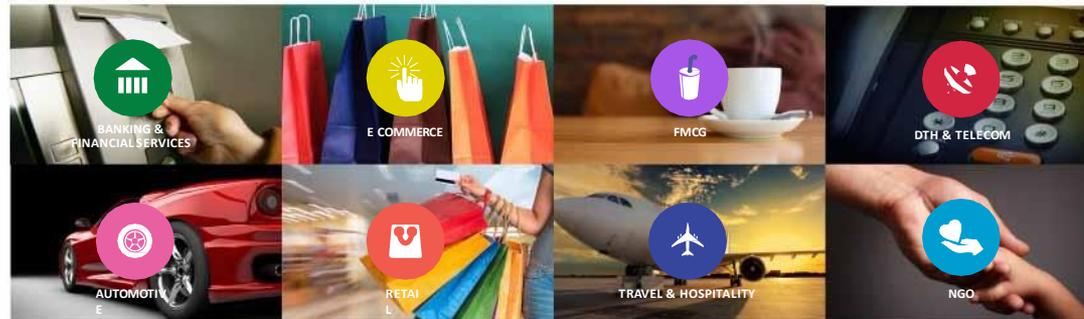


With a data-driven marketing thinking and strategy, Hansa Cequity helps companies build intelligent, intuitive and real-time customer relationships. We enable this by leveraging the power of technology through proprietary and best-in-class marketing automation and analytics platforms.

Our data consultants understand and unify data from multiple sources. Our analysts and customer marketing specialists glean out insights and understanding of our client's customers or prospects. Our campaign management and digital marketing consultants then move in to create meaningful engagement opportunities in a multi-channel environment.



Helping India's leading companies with their customer marketing efforts:



www.cequitysolutions.com

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Sampath Rengachari, EVP Marketing, Hansa Cequity. Sampath is a successful strategy, marketing and operations professional with 25 years of experience in handling global markets in IT services. His strengths include stating a long term vision and building an organisation to meet the vision. Sampath has proven entrepreneurial abilities in business models, client management, new service offerings using out-of-the box methods to meet organisational objectives.



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