



DeepInsights™

Model the World. Model the Mind.

Generating valuable insights from varied data sources is a necessity for enterprise decision making. The accuracy, speed, cost and ease of availability of right data metrics influence strategy, products, and services of enterprises. Challenges in enterprise decision making is driven by the exponential growth in data, which impacts data retrieval, extraction, aggregation, and analysis. Monitoring and mining structured and unstructured data spread across various sources presents significant issues related to data ingestion, extraction, cleaning, analytics, reasoning, visualization and interaction. These sources include physical and digital data sources such as emails, call-centre transcripts, policy documents, broker submissions, bank statements, annual reports, customer complaints, and insurance loss run documents.

Mphasis DeepInsights™ is a patented, cognitive intelligence platform, which enables enterprises to gain faster and more effective access to insights from data. Cognitive intelligence is one of the major pillars on which tomorrow's enterprises are being built. By turning nearly every aspect of inferencing and decision making, it is revolutionizing the competitive differentiation of enterprises. DeepInsights is powered by state-of-the-art algorithms in machine learning, neural network, deep learning, semantics, image analytics, graph theory, predictive analysis and natural language processing. This further enables enterprises to engage with their customers through personalized experiences and explore newer business models that leverage the potential of anywhere any time on any device computing capabilities.

Fast, Accurate Data Processing with Cognitive Intelligence

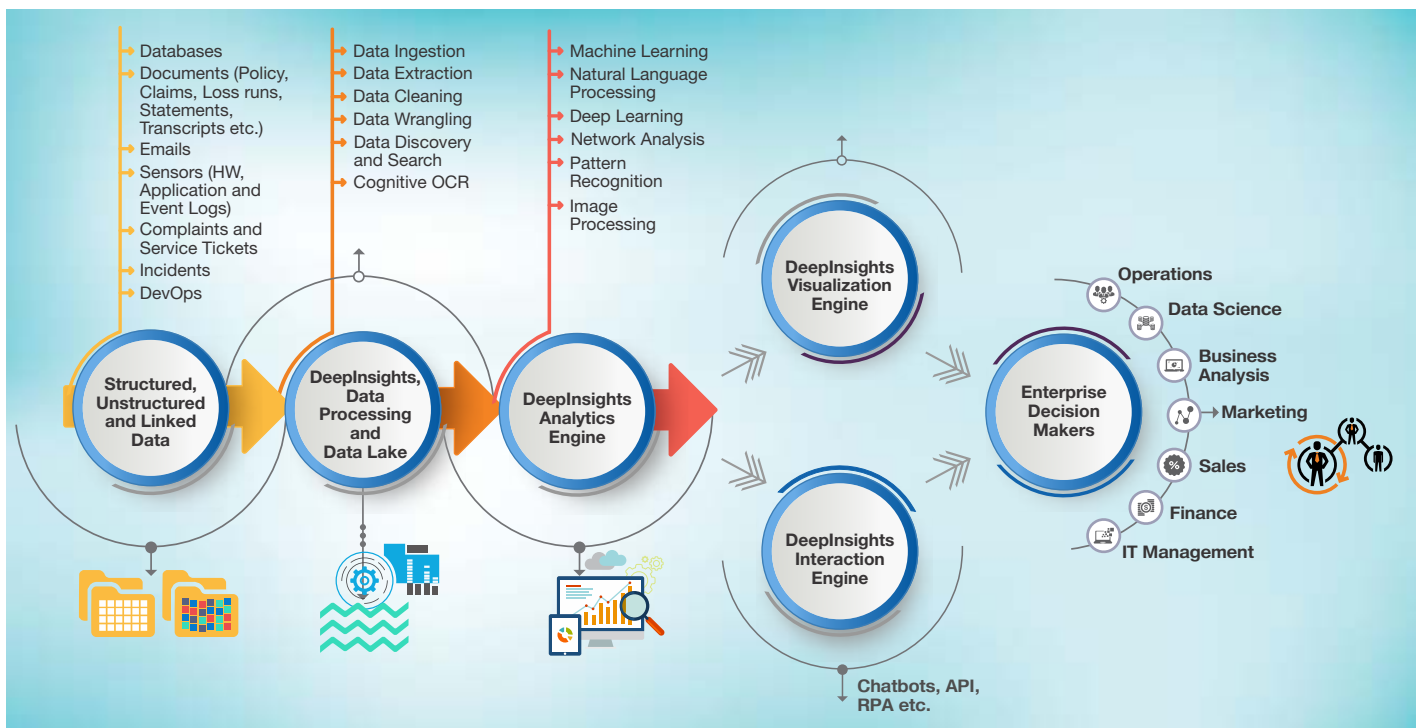
DeepInsights performs four critical functions:

- **Smart Data Ingestion:** DeepInsights brings together the best of semantic analytics and image processing to intelligently extract the information from variety of sources including scanned documents, digital documents, incident tickets, events logs, source codes and emails
- **Cognitive Analytics:** The intelligent cognitive engine presents actionable business insights through deep analysis of extracted information by leveraging state-of-the-art algorithms in machine learning, neural network, deep learning and natural language processing domain
- **Automated Decisions and Reasoning:** The platform offers contextual and temporal decision making to generate the right insights from data and trigger downstream workflows for manual actions or Robotic Process Automation
- **Versatile Interaction:** DeepInsight interacts with enterprise systems and channels such as virtual and human agents, zdatabases as well as APIs across industries

DeepInsights - Functions



How It Works



Benefits

- The powerful cognitive engine automatically leverages the best of machine learning and deep learning algorithms to analyze data
- Cloud based and provides the most contextual and accurate decision metrics from structured and unstructured data
- Enables timely decision making by exponentially reducing the turn-around time of business processes
- Works with multiple file formats and types and presents information in a structured format for downstream consumption
- Image processing capabilities along with cognitive OCR enables faster processing of unstructured scanned document
- It provides cognitive analytics driven straight-through processing

Use Cases

AUTOMATED INTELLIGENT TICKET ROUTING



BUSINESS CHALLENGE

- Manual assignment of tickets based on human intuition and knowledge
- More human effort across projects devoted to only assigning tickets to appropriate resources
- Simple Yes-No judgements with rigid guided diagnostics
- Machine learning techniques employed for ticket assignment (if available) do not take domain knowledge into consideration



DEEPIINSIGHTS SOLUTION

- Provide diagnostics on a probabilistic basis embedding expert knowledge while considering utility, satisfaction, cost, and time of repair in a multi-criterion decision making framework
- Extract key features from past ticket resolution data and use this data to predict probability of closing tickets by different users, using Bayesian networks
- Assign tickets to resources who are most likely to resolve them based on this calculated probability
- For new tickets, use online learning algorithms to assign and learn simultaneously



BENEFITS

- Optimized allocation of tickets by assigning more tickets to better resources
- Natural, data-driven selection and match of supply and demand
- Reduced time for closure of tickets and increase in user satisfaction
- Automate the diagnostic and repair process by linking with Robotic Process Automation
- Reduced effort involved in allocation of tickets and freeing up resources for more productive work

COGNITIVE NEXT BEST ACTION PREDICTION



BUSINESS CHALLENGE

- Large number of tickets raised for application support
- Many of the support tickets can be solved with minimal guidance
- Current guidance systems are rule based and not intelligent enough to provide contextual help to the users
- The current self-help systems or chat bots, do not learn from past data or patterns



DEEPIINSIGHTS SOLUTION

- Utilize historical trend, pattern identification for ticket resolutions - Extract key features from Ticket Resolution Data on actions taken in each step
- Graphical models of probabilistic next resolution steps - Use past data to predict possible causes and next best action for support technician
- Aggregation of support data from relevant sources
- Recommendation of 'Next Best Action' to support staff and users for self-service



BENEFITS

- Reduced time for closure of tickets
- Assistance provided on 'Next Best Action'
- Enable creation of 'Self-help' platforms for end-users
- Natural, data-driven selection of better ticket resolution

COGNITIVE DATA EXTRACTION AND ANALYTICS



BUSINESS CHALLENGE

- Generate actionable insights from physical and digital data sources such as annual reports, bank statements, emails, customer complaints etc.
- Complexity of the problem makes manual analysis non-real time, challenging, costly and low on accuracy
- Information is residing in varied data and document types such as databases, PDFs, HTML, JPEG etc.
- Lack of standardization of information as well as fields needed for decision making



DEEPIINSIGHTS SOLUTION

- Machine Learning for intelligent extraction and analysis of data from digital as well as paper documents and images
- Cognitive data extraction techniques for conversion of documents to machine readable format
- Built in Big Data analytics module to analyse structured and unstructured data
- Key metrics trigger next steps in the automation workflow



BENEFITS

- Over 95% accuracy in detection and extraction of key fields
- Reduced time taken for data extraction by over 70%
- Reduced operating costs by over 50%
- Improved client satisfaction through near real-time analysis of data
- Exponential reduction in turn-around time from data to insights

POLICY DOCUMENT ANALYSIS AND CHATBOT BASED INTERACTION



BUSINESS CHALLENGE

- Large proportion of in-bound queries from brokers and customers regarding policy wordings, policy schedules or similar FAQs
- Complexity of the problem makes manual data extraction and analysis non-real time, challenging, costly and low on accuracy
- Customer queries are coming in 24*7, resulting in the need to respond at near real time
- Need to reduce demands on key insurance personnel and prevent inconsistent responses to customer queries



DEEPIINSIGHTS SOLUTION

- Natural Language Processing to understand the “intent” of query and identifies those that don’t need manual intervention (e.g. negotiation)
- Cognitive data extraction techniques for conversion of documents to machine readable format
- Built in Big Data analytics module to analyse structured and unstructured data
- Analysed data is leveraged by the DeepInsights chatbot for 24*7 versatile customer interactions



BENEFITS

- Achieved over 97 % accuracy in the data extracted from policy documents
- Time taken to find relevant information from documents reduced from 60 seconds/field to 5 seconds/field
- Reduced operating costs by over 60%
- Improved customer satisfaction through 24*7 query support

BROKER CLAIM SUBMISSION ANALYSIS



BUSINESS CHALLENGE

- Large volume of in-bound documents from brokers with the information spread across the body of the email or in email attachments. Attachments are in word format, or digital or scanned PDFs
- There is no consistency in document structure used either between brokers or within the same brokerage company
- It's a time consuming and tedious process. An operator typically clears 8-10 quotes from his queue per day.
- Complexity of the problem makes manual data extraction and analysis non-real time, challenging, costly and low on accuracy



DEEPIINSIGHTS SOLUTION

- The DeepInsights AI engine iterates through various techniques and deploys the predictive technique that is most suitable for the data at hand
- The engine checks for inter-field validity and flags values that occur with low confidence to call for manual intervention
- RPA systems then access the key fields and update multiple legacy databases
- DeepInsights predictive analytics engine predicts quote conversion probability and highlights high/low performing brokers who consistently



BENEFITS

- Achieved over 90 % reduction in processing time per case document
- Predictive analytics prioritized underwriting queue with respect to quote conversion probability
- 90% accuracy in predicting deal conversion

SELF-HEALING OF IT OPERATIONS



BUSINESS CHALLENGE

- Large number of application support tickets raised
- Difficulty in identifying and prioritizing high risk and impactful alerts among Terabytes of event logs that can lead to subsequent failure
- Longer cycle times to arrive at incidence resolution due to difficulties in RCA (Root-cause analysis) on event log
- Less efforts on proactive fixation of possible incidences due to high manual intervention. This leads to more infrastructural cost and high risk of interruptions
- More effort in resolution of L2 and L3 incidences



DEEPIINSIGHTS SOLUTION

- DeepInsights Cognitive Data Extraction engine ingests data from event logs and mines to identify events
- Predictive Analytics Engine predicts incidences that leads to failure in IT infrastructures
- The engine reasons root cause of the incidence based on historical knowledge repositories using self-learning
- The system works with RPA to automate resolutions
- Resolution implemented by AI bots which plugs in to resolve the issue by learning from past resolutions



BENEFITS

- Achieved over 95 % accuracy in predicting events
- Reduced resolution times due to speedy and accurate RCA
- Expedite resolution management with minimal or no manual intervention
- Increases infrastructure reliability due to automated preventive maintenance schedules
- Increased business continuity without disruptions

INCIDENT MANAGEMENT IN IT OPERATIONS



BUSINESS CHALLENGE

- Incident information can be logged either by user or by automated business rules
- Information fields can be inconsistent and diverse based on device type, monitoring agent, and type of incidence
- Accurate categorization of incidences is manual intensive and subjective
- Incidence routing to the right expert among resources of varied skill set is complex
- Identification of resolution for an incidence from existing massive knowledge repositories is tedious and time consuming



DEEPIINSIGHTS SOLUTION

- DeepInsights Cognitive Data Extraction engine extracts key features from Ticket Resolution Data and Incidence Type and Description Data
- The AI engine intelligently categorize incidences based on past data
- The Predictive Engine based on past data predicts probabilities of closing tickets by experts and ranks based on Deep Learning and Bayesian Models
- RPA systems then route the incidences to respective experts and initiates business processes
- Recommendation engine to shortlist and order knowledge documents that are relevant for resolution



BENEFITS

- Faster, accurate and automated incidence categorization and routing
- Reduced time for incidence resolutions by identifying right expert at right time
- Optimized incidence allocation by assigning to better resources
- Use learning algorithms to optimally assign incidences in a dynamic context
- Real-time Knowledge Management System to provide quicker resolution

About Mphasis

Mphasis (BSE: 526299; NSE: MPHASIS) applies next-generation technology to help enterprises transform businesses globally. Customer centricity is foundational to Mphasis and is reflected in the Mphasis' Front2Back™ Transformation approach. Front2Back™ uses the exponential power of cloud and cognitive to provide hyper-personalized ($C = X2C_{tm} = 1$) digital experience to clients and their end customers. Mphasis' Service Transformation approach helps 'shrink the core' through the application of digital technologies across legacy environments within an enterprise, enabling businesses to stay ahead in a changing world. Mphasis' core reference architectures and tools, speed and innovation with domain expertise and specialization are key to building strong relationships with marquee clients. To know more, please visit www.mphasis.com

For more information, contact: marketinginfo.m@mphasis.com

USA
460 Park Avenue South
Suite #1101
New York, NY 10016, USA
Tel.: +1 646 424 5145

UK
Mphasis UK Limited
1 Ropemaker Street, London
EC2Y 9HT, United Kingdom
T : +44 020 7153 1327

INDIA
Bagmane World Technology Center
Marathahalli Ring Road
Doddanakundhi Village
Mahadevapura
Bangalore 560 048, India
Tel.: +91 80 3352 5000

