Crafting Tomorrow. Today.

Whirldata

AI Driven Innovations

Future-ready business solutions for today's problems.

#GoBeyond and #StayAhead with AI driven innovations.

VISION

The future, that's pregnant with a world of possibilities, beckons everyone. And with the intention of getting a taste of that promised land, everyone's building castles in the air. However, at Whirldata, we try to turn intangible dreams into tangible realities. We bridge the present and the future by working towards something that is viable, scalable and affordable.

Today we #GoBeyond to solve real world challenges to help you #StayAhead and move towards an extraordinary tomorrow.

Our approach to Artificial Intelligence and Machine Learning mirrors this credo. We tend to steer clear of the stratagem usually employed by companies wherein they start with designing the solution and then backtrack to retrofit the problem. But instigation and discovery is an integral part of our functioning. We adhere to the first principle approach by which we try to understand the nature of the problem first and work on the path to solution thereafter.

We strive towards the amalgamation of people and process in order to determine what could be the possible impact on business if a particular problem is not analyzed in the right manner. Our team boasts of professionals with diverse set of skill-sets, extensive exposure of techno-commercial projects and a sea of experience. Subject matter expert is not just a designation at Whirldata, but everyone here knows their subject inside out and exercise a hands-on approach to each and every work. Putting our minds together we mix technology, art and math at the right scale to deliver a commercially viable AI or ML solution.

Are your ready for tomorrow? We are, today!

POWERED BY A
NEW BREED

FOUNDERS

Ara Ramalingam (Ara)
President
Designing and building custom solutions is in his DNA. Speed with relevance forms the basis of all his work. 18 years of demonstrated experience rolling out products/solutions faster than any competitor. His client list one to die for. Has perfected the global development model. B.E (Comp. Sc) from University of Madras and an M.S (Comp. Sc) from American University.

B A Madhusudhan (Madhu)
Vice President – Strategy & Development
Management Consultant with a deep understanding of the fundamentals of Data Sciences and Machine Learning, views every requirement and solution from a commercial perspective, possesses phenomenal levels of curiosity, and a constant learner. B.E (Comp. Sc), M.S (Comp. Sc - Theoretical CS and Numerical Methods) and PGDM from IIM-Ahmedabad. 17 exciting years across multiple domains.

Metamorphosis

To understand is to know what to do.

We call a spade a spade. And that's our trump card.

By not allowing rhetorics and exotic algorithms to rule the roost, Whirldata aims at delivering solutions that create exponential business value. We refuse to don the garb of an information technology company, and instead drape the mantle of a business transformation company.

The words transformation and disruption have lost their way in the quagmire of today. True transformation or disruption is a function of absolute clarity, and clarity only comes with depth.

By adhering to the First Principles approach we dig deep to discover the fundamental elements of each and every problem. We don't assume, we ascertain. And from there we unravel the best possible solution.

Some call it an eventuality but we call it – metamorphosis.

"Is the stated problem the real problem?"
"How are we absolutely sure, it is?"
"How do we know the problem can be solved?"
These are a few questions we ask ourselves before embarking on the journey.

Our experience has blessed us with the knowledge that the best solution is not where everyone is already looking. Metamorphosis instigates us to abandon allegiance to previous forms and put the function front and center. What is the goal? What are we trying to accomplish? What is the functional outcome that we are looking to achieve?

How can we create a pathway to exponential growth?

The intent is to #StayAhead and not get wound up in conventions and allegiance to previous forms and visions. We steer clear of running the risk of stifling creativity and the possibility to create something uniquely path breaking.
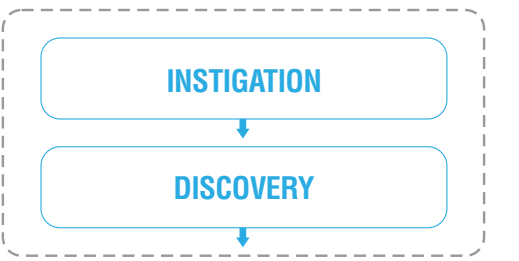
The process of convergence towards the problem to decipher a diverse range of solutions is how we #GoBeyond the obvious and bring about Metamorphosis.

To understand is to know what to do.

First Principles Approach

Strategic Consulting

INSTIGATION

DISCOVERY

PROBLEM DEFINITION
Critical Step

SET EVALUATION METRICS
Critical Step

SOLUTION APPROACH

AI Driven Innovations

Image & Video Processing

Natural Language Processing

Data Sciences

Rule Based Applications

➡ Statistics
➡ Mathematics
➡ Algorithms
➡ Computer Vision

Machine Learning

➡ Regression Based
➡ Decision Trees
➡ Clustering
➡ Search Based

Neural Networks

➡ Deep Learning
  ➡ Convolutional Networks
  ➡ Sequence Networks

COGNITIVE SOLUTION

Big Data & Cloud

Support / Enabler

Denotes Whirldata Core Services & Practices

CASE STUDIES

DESIGN THINKING

Task:
Client engaged Whirldata to explore innovative and cost effective options for technology spend

- Client from California had a mandate to reduce human involvement in a garbage sorting line. Attempted expensive solutions through Computer Vision and Hyperspectral imaging before coming to us

- Deep learning neural networks were investigated and a cost effective solution was formulated after identifying appropriate learning networks

- A deep learning neural network (SegNet) provided acceptable results from low quality images

- A pilot for detection was built to prove that specific deep learning networks were the path on which to invest further R&D spends

Discovery:
Ideal case where a low cost ML based approach trumps high cost CV and spectral imaging systems

Whirldata Solution:
Design thinking approach provided a direction for further R&D
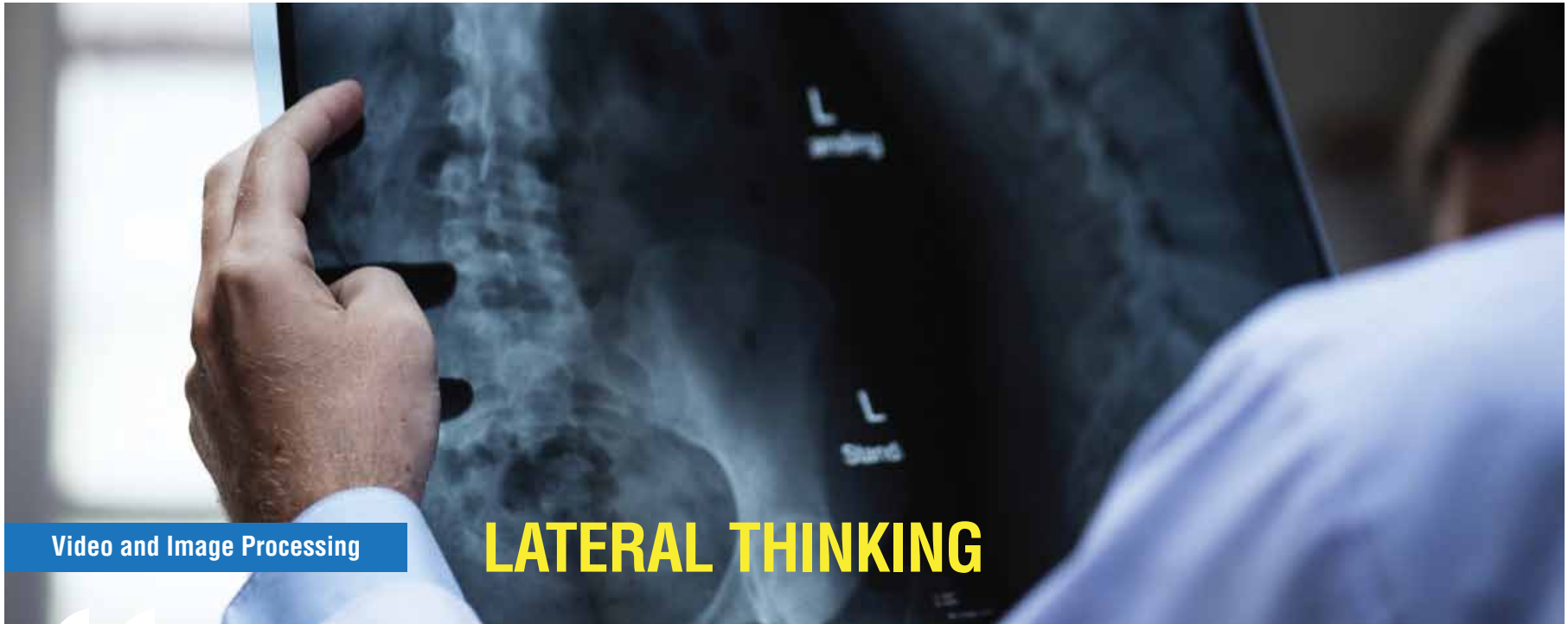
LATERAL THINKING

**Task:
Telemedicine solutions for prioritizing X-Rays to be processed by Radiologists**

- Client requested an MVP for an X-Ray detection system to replace Radiologists and sought our help in techno-commercial design of the product
- Cost of such system was prohibitive and accuracy was a concern due to non-availability of training data
- Analyzing the socio-economic and environmental factors, an X-Ray prioritization system was recommended in place of a complete replacement of Radiologists
- Architected a pipeline for a learning system that could classify and prioritize X-Ray

Discovery:
Complete replacement of Radiologists not feasible or viable. Human intervention is critical in detecting anomalies

Whirldata Solution:
An innovative prioritisation approach to enhance productivity in sync with socio-economic environment

INTERNAL PROCESS TRANSFORMATION
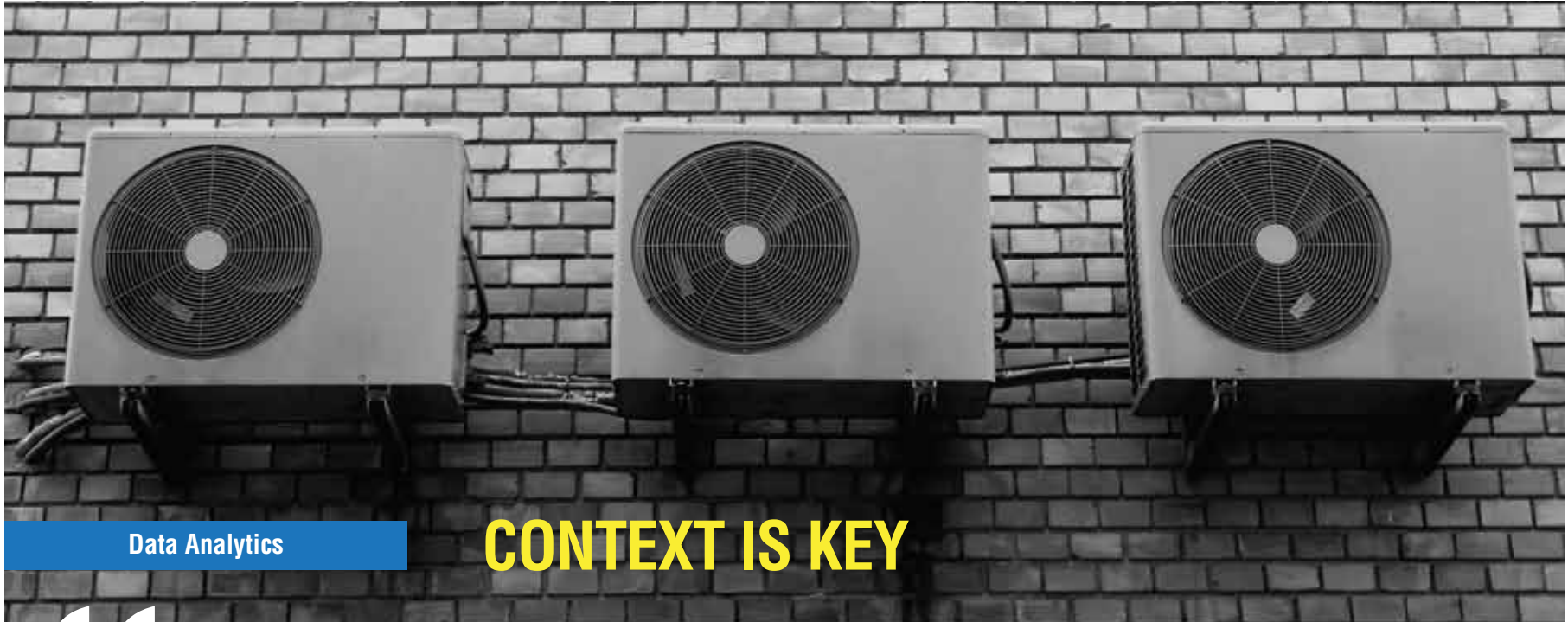
Task:
Need for a
data warehouse

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- A leading CO2 manufacturer/supplier approached us to build a data warehouse solution for supporting their decision making process for logistical cost optimization

- In-depth study of business processes, various MIS systems to understand client's business and true needs

- The solution was a combination of management consulting, data warehousing, data analytics and machine learning - true case of 'Science meets Business'

- Solution not only solved the client's original need for delivery cost optimization but ended up saving manpower cost on daily operation and MIS activities

Discovery:
Internal process transformation is key to most optimization efforts

Whirldata Solution:
A self-learning system for real-time order prioritization and logistical optimization model

"

CONTEXT IS KEY

Task:
Demand Forecasting Model for an air conditioner manufacturer

- Client approached us to build a demand forecasting model based on weather predictions and provided us with sales data for three years

- Instigation & Discovery led us to uncover supply chain issues with master distributor in the US

- Quantified the possible loss due to supply chain anomalies

- Altered the focus from weather based modeling to supply chain optimization and use of competitor data

Discovery:
Quantified monitory loss of suboptimal master distributor. Contextual interpretation is key. Problems always need not be as stated

Whirldata Solution:
A demand prediction model based on competitor data and hyper-local data

VALUE ADDITION - A PART OF OUR DNA

Data Analytics

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Task:
Analyze future oil contracts (WTI) based on a trading philosophy

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- A group of High Frequency traders in Oil Futures (spreads and flys) approached us to validate trading opportunities based on their philosophy and automate finding new ones

- Collected historical trading data and built statistical models based on trading philosophies

- Solution involved not only deploying an automated ML model for daily analysis, but a self-service portal on AWS was provided free of cost to the client

- Cost saving for client by avoiding need for daily manual analysis through expensive analysts

- Second model in progess

Discovery:
#GoBeyond to delight customers. Value addition never fails

Whirldata Solution:
A self-service model for analysis of Oil Futures to save time and cost for the client

IDEA TO MVP

Task:
MVP for enhancing perimeter security for commercial buildings

- Client approached us to build a MVP from scratch

- We proposed a "build-operate-transfer' model and dedicated a team of data scientists and engineers

- Data collection environments were stated to address the needs of the MVP

- Researched various deep learning neural network models and picked the appropriated algorithms

- Key result areas were agreed upon based on potential client requirements, investor criteria and strategic partner needs

- Team continues to work under the guidance of the founders and Whirldata supervision

Whirldata Solution:
A "build-operate-transfer' model

**Task:
Augment online and telephone support process**

ROI ASSURANCE THROUGH COGNITIVE SCIENCES

- A large apparel retail chain approached us to build a POC for omni-channel conversational user interfaces - to demonstrate possibility and establish ROI

- Goal - Enhance customer experience through enabling omni-channel communication. Client wanted their customer service to be enabled and automated across multiple platforms - Echo, Google Home, Skype, FB Messenger and a proprietary web interface

- Solution was deployed in a very short duration through the use of Whirlbot™ - Whirldata's proprietary omni-channel cloud based chat engine. Customers could access bot based customer service through voice and text across multiple channels

- Solution also involved extensive integration across client's ERP, CRM, CMS and e-commerce systems

Discovery:
It is possible for accurate quantification of monetary benefits of CUI

Whirldata Solution:
A single platform that can integrate CUI across multiple channels

REVENUE ASSURANCE FOR HIGH VOLUME AD INTER-MEDIATION TRANSACTIONS

> **Task:**
> **Build a cloud based solution to collect high volume video ad traffic data and to optimize ad placements based on user demographics and content context**

- Client was an advertisement and content intermediation services company with high volume transactions
- Required: 1) a cloud based solution to log ad placements, views and revenues and 2) prevent revenue leakage
- Complexity contributed by perceived technical difficulties to correlate revenue with ad and contents
- AWS was chosen as the cloud platform and operational expenses as a function of future increases in transactions were extensively studied
- Client also needed supporting functions that required integration with their existing platforms

Discovery:
High Volume transactions that span cloud and existing infrastructure can pose a significant architecture challenge

Whirldata Solution:
Cost effectiveness of the architecture - a key for such solutions

50+

50+ highly skilled group of Management Consultants, Statistician, Programmers, Analysts and Algo Experts

Headquartered in Fremont CA

HQ

R&D

Research and Development Centre in Chennai, India

We cater to thought leaders, innovators and business leaders by helping them bring their vision and ideas to fruition. Unlocking hidden values by mixing technology, art and math at the right scale and right combination to develop commercially viable solutions forms the core of our DNA.

**We are sure you'll have questions and we'd love to hear them from you.
Write to us at itspossible@whirldatascience.com to set up a free consultation session.**

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