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**Corporate profile**

Founded by **IIT Madras alumnus** having extensive global business experience with **Fortune 100 companies** in **United States** and **India** having three lines of business

<table>
<thead>
<tr>
<th><strong>Analytics</strong></th>
<th><strong>Competitive Intelligence</strong></th>
<th><strong>Livelihood</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Appropriate statistical models through which clients can measure and grow their business.</td>
<td>• Actionable insights to clients for their business excellence</td>
<td>• Services ranging from promotion of livelihoods, implementation services, livelihood &amp; feasibility studies.</td>
</tr>
</tbody>
</table>

- Key Focus Areas in **Advanced analytics and Predictive analytics**
- Product – **geniSIGHTS (Analytics/BI), Ordo-ab-Chao (Social Media)**
- More than **25 consulting assignments** for Businesses & Govt orgs
- Partnership – **Actuate, IIT Madras, TIE and 3 strategic partnerships**
- Dedicated corporate office at **IIT Madras Research park since 2009**

**Advisory board**

Prof Prakash Sai
Dr. Prakash Sai is professor at the Department of Management Studies, Indian Institute of Technology Madras. He has wealth of international consulting experience in Strategy Formulation.

Puneet Gupta
Puneet spearheads the IFMR Mezzanine Finance (Mezz Co.), is strengthening the delivery of financial services to rural households and urban poor by making investments in local financial institutions.

Padma Shri Dr. Ashok Jhunjhunwala
Dr. Ashok Jhunjhunwala is Professor at the Department of Electrical Engineering, Indian Institute of Technology Madras India. He holds a B.Tech degree from IIT, Kanpur, and M.S. and Ph.D degrees from the University of Maine, USA.
Competencies in

Advanced analytics

Build appropriate statistical models through which clients can measure and grow their business.

Expertise in
- Digital Media
- Finance/Insurance
- Travel & Logistics
- Retail
- Lifestyle
- Human Capital
- Government organizations
- Research & training

Competitive intelligence

Provide actionable insights to clients for their business excellence.

Expertise in
- Business Entry
- Business Expansion
- Market research

Livelihood

Perform livelihood services ranging from promotion of livelihoods, implementation services, livelihood and feasibility studies.

Expertise in
- Government organizations
- Non Government organizations
- Corporate with livelihood focus
- Research
## Our past analytical assignments

Livelihood and Competitive intelligence initiatives not discussed here:

<table>
<thead>
<tr>
<th>Digital Media</th>
<th>Big data</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Mining sentiments from social media – <em>Movie analysis for a major Television network</em></td>
<td>- Hadoop – HDFS, Mapreduce, Hive, Pig, Hbase, Cloudera</td>
</tr>
<tr>
<td>- Campaign and Publisher scoring for a major US based digital media &amp; content platform firm</td>
<td>- Efficient ways to handle big data using state-of-art memory mapping techniques and parallelization techniques</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finance</th>
<th>Cloud</th>
</tr>
</thead>
<tbody>
<tr>
<td>- BI &amp; analytical capability for major fin institution.</td>
<td>- BI dashboard/analytics environment specific to clients on an EC2 instance hosted at AWS.</td>
</tr>
<tr>
<td>- Credit scoring to grade &amp; monitor the performance of SHGs – A product in making</td>
<td>- Provision to switch on/off the instance at the click of a button to save the running costs.</td>
</tr>
<tr>
<td>- Geographic Dispersion of Business Risks for a financial research institute</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Predicting Ins claims &amp; forecasting revenues in healthcare industry for a US based vendor</td>
<td>- Reports in the form of intelligent dashboards</td>
</tr>
<tr>
<td>- Household wealth at Risk deployment for a major financial institute</td>
<td>- Business reports in the format you like - doc, ppt, excel, html, pdf, etc</td>
</tr>
<tr>
<td></td>
<td>- Partnership with Actuate for world class reports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Travel/Logistics</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fare analysis, assigning credit limits, Customer scoring, trend analysis, etc for largest integrated travel &amp; travel related firm</td>
<td>- geniSIGHTS - Advanced analytics/BI product that is Customizable, extensible in cloud and big data environment,</td>
</tr>
<tr>
<td>- Agents analytics, customer engagement, churn analysis, customer acquisition, dynamic pricing, route optimization for major Ticket booking company</td>
<td>- Ordo-ab-Chao - State-of-the-art social media analytical tool to predict the Business sentiments</td>
</tr>
<tr>
<td>- Lodging analytics for leading global lodging solutions company</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Retail</th>
<th>Government Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Market Basket Analysis &amp; Loyalty Management – Pilot case proposed to a major retail player</td>
<td>- Periodic assessment of National Rural Employment Guarantee Act (NREGA) in partnership with IITM’s RTBI, as part of Ministry’s network</td>
</tr>
<tr>
<td>- Catchment prediction - quantitative model that helps retailers to identify the vantage site.</td>
<td>- Poverty indicators</td>
</tr>
<tr>
<td></td>
<td>- Election Analytics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lifestyle</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Analytics support for a major Television network</td>
<td>- Domain specific geniSIGHTS – version 2</td>
</tr>
<tr>
<td>- Recommendation Engine for Matrimonial company</td>
<td>- Retail</td>
</tr>
<tr>
<td></td>
<td>- Big data analytics and emerging technologies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human Capital</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Strategic partnership with a major Employee Life-cycle Management firm to provide actionable insights to their clients</td>
<td>- Analytics for Business sucess &amp; excellence</td>
</tr>
<tr>
<td></td>
<td>- Big data workshops/trainings</td>
</tr>
</tbody>
</table>
Past Case studies

Analytical Advantage Using Mathematical modeling

Forecasting

Statistical analysis

Prediction

Adhoc reports

Optimization

Research Capability

Analytical Advantage
**Project Context:** Our client, a US based media and content platform firm for engaging the audience with the most money and influence online with more than 1,000 publishers as partners. The client approached Aaum to reap analytical insights from their humongous transaction data.

**AAUM’s Contribution:**
- Devised and tracked the Key proportions and Key Performance across the sites and publishers.
- Achieved “performance scores” to qualify the site/campaign performance characteristics (CTR, Margin, CPM and Delivery rate) and got validated.
- Extended the scoring technique to derive segment specific indices and compared the peer campaigns.
- Root cause analysis: Inspection of site performance attributes of the critical campaigns.

**Sample Deliverables**

- **Key proportions and Key Performance**
- **Qualifying the performance by scoring**
- **Acid test on our scores**
- **Root cause analysis of the critical campaigns**

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**Case Study:** Campaign and Publisher scoring for a major US based digital media & content platform firm.
Case Study: Recommendation engine for a major Matrimonial company

Project Context: Our client, a major Matrimonial firm in India approached us to develop a robust recommendation engine based on the customer profile, behavioral characteristics.

AAUM’s Contribution:
- Developed a recommendation engine that finds relevant profiles by similarity scores. Similarity scores are built by advanced analytics of the past customer likes, choices, etc.
- The recommendations could further be enhanced by customer preferences.

Sample Deliverables:

... “The problem”

Relevant recommendation by data analysis

Scores enhanced by preferences

Results enhanced by user preferences

For those matched profiles, a composite score is computed on these variables and the profiles are ranked accordingly.

The engine further sorts and orders these profiles on the following parameters:

- Family value
- Family type
- Family status
- Complexion
- Body type

There is a drastic dip in the last phase of the customer free state in all categories. More than 0.5 in the expected activity per day!
Case Study: Analytical support for a major television network

**Project Context:**
Our client, a national television network approached us to derive analytical insights by slicing and dicing multiple scenarios to help the top management to arrive at actionable results.

**AAUM’s Contribution:**
- Understanding of target audience, frequent respondents and provision to reward the most loyal respondent (Integrated over a period of time)
- Respondent behavioral characteristics - by age group, gender, voice/non voice
- Media campaign/promotions efficacy - What time is better, Which channel is better?

**Sample Deliverables**

... extracted insights by dimensional analysis

... chennai’s female population are older than other vital circles

...analysis strengthened the media channel to reward the loyal customers.
Project Context:
Our client, a HR consulting firm, approached AAUM to develop comprehensive metrics which could be standardized across its clients.

AAUM’s Contribution:
- Developed standard metrics that could be rolled out across to the clients of the consulting firm
- Performed interaction analysis for ‘key metrics’ to derive a holistic understanding
- Developed predictive models for some very useful parameters

Sample Deliverables:
- Standardized metrics were defined and developed
- Interaction analysis of key metrics was performed and insights were derived
- Predictive models were built using Random Forests for key parameters

Metrics definition

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Metric</th>
<th>Definition</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>a. Productivity in days</td>
<td>Total number of working days of the employee/total number of expected working days</td>
<td>This metric will range from 0 to 1. The closer the value is to 1, the higher the productivity.</td>
</tr>
<tr>
<td>2.</td>
<td>Average leave day</td>
<td>Average of the difference between leave reporting date and leave applied date</td>
<td>Ideally this metric should be closer to zero. A higher deviation implies the gross indiscipline.</td>
</tr>
<tr>
<td>3.</td>
<td>Suicide Indiscipline (including CO)</td>
<td>No. of days not worked/Total working days (including CO)</td>
<td>This metric will range from 0 to 1. Value closer to 0 implies a good scenario.</td>
</tr>
<tr>
<td>4.</td>
<td>Suicide Indiscipline (excluding CO)</td>
<td>No. of days not worked/Total working days (excluding CO)</td>
<td>This metric will range from 0 to 1. Value closer to 0 implies a good scenario.</td>
</tr>
<tr>
<td>5.</td>
<td>Suicide Indiscipline (excluding CO)</td>
<td>No. of CO suicides/Total number of CO</td>
<td>This metric will range from 0 to 1. The closer the value is to 1, the better it is.</td>
</tr>
<tr>
<td>6.</td>
<td>CO Indiscipline</td>
<td>No. of rejected CO/Total number of CO</td>
<td>This metric will range from 0 to 1. Value closer to 0 implies a good scenario.</td>
</tr>
<tr>
<td>7.</td>
<td>Regularization Rejected (RR)</td>
<td>No. of rejected regularization/Total no. of regularization requested</td>
<td>This metric will range from 0 to 1. Value closer to 0 implies a good scenario.</td>
</tr>
</tbody>
</table>

Case Study: Developed KPI’s and Predictive Analytics for a HR Consulting firm
Case Study: Analytical support for a major ticket booking company

Project Context:
Our client, a major ticket booking company approached AAUM to provide comprehensive analytical insights to help the top management to arrive at actionable results.

AAUM’s Contribution:
- Developed RFM metrics to help the management to effectively segment customers and reward them.
- Performed cohort analysis to qualify the churning, effective engagement with agents.
- Qualified traveler’s behavioral patterns on routes, regularity, age, gender, per ticket value, lead days, etc.
- Developed dynamic pricing strategy based on the unfilled inventory levels.

Sample Deliverables

Margin analysis ...

Cohort analysis to qualify churn & engagement disengagement levels ...

Encouraging group bookings by corporate colleges, making them book in advance will be profitable.

Deteriorating engagement levels after 3 quarters since registration.
Case Study: Analytical support for the largest integrated travel and travel related financial services company

Project Context:
Our client approached AAUM to offer effectively qualify their business operations with insights from data analysis.

AAUM’s Contribution:
- Devised methodology to effectively qualify the payment cycle, ageing metrics, outstanding from customers.
- Performed credit limit analysis, qualified credit consumption patterns and suggested efficient methodologies.
- Performed fare analysis to optimize the travel offerings to customers.

Sample Deliverables

lead analysis on ticket fare of airline travel...
credit consumption and breaching patterns...
promptness in payments...
Case Study: Efficient algorithms to analyze big data based on rich client engagements

Project Context:
Based on various big data assignments and research, Aaum has come up with efficient ways to handle big data using state-of-the-art memory mapping techniques and parallelization techniques.

AAUM’s Contribution:
- Effectively crunched the big data problem using memory mapping techniques
- Parallel computing framework to run programs across machines/CPU’s for 10X reduction in execution time

Sample Deliverables

12 GB Data allocated to shared memory and memory mapped files used to perform analysis instead of using RAM memory...

Bootstrapping algorithms are run parallel on multiple clusters to bring down execution time...

in 2 seconds!!!

*System configuration: CPU: Intel(R) Core(TM)2 Duo CPU E7500 @ 2.93GHz Memory: 8GiB
Case Study: Cloud based BI dashboard/reporting solutions for various clients

Project Context:
Aaum offers cloud based BI dashboards/reporting solutions to its clients.

AAUM’s Contribution:
- The team builds BI/dashboard environment specific to clients on an EC2 instance hosted at AWS.
- Provision to switch on/off the instance at the click of a button to save the running costs.

Sample Deliverables

Launching cloud reporting interface as and when required...
Reporting applications deployed on the instance.... are BIRT reports to provide insightful dashboards to the client....
Project Context:
AAUM offered analytical support to a leading global lodging solutions company to leverage their business.

AAUM’s Contribution:
- Slicing and dicing of data to understand customer’s hotel booking preferences qualified on savings, effective rate and net paid.

Sample Deliverables

Trend analysis to understand the effective rate pattern in a year ...

effective rates over customer preference, location, position, etc ...
Case Study: Measuring the movie performance by mining social media sentiments

Project Context:
Research project funded by the company to devise a performance dashboard on various attributes for a movie to predict the success at the Box office.

AAUM’s Contribution:
• Team AAUM extracted and analyzed the information from the web sources like YouTube and twitter to achieve the specified Business Objectives
• Developed dashboards for various attributes and analyzed the trends in the sentiment scores by using clustering, classification techniques.

Sample Deliverables
Case Study: Market Basket Analysis and Loyalty program

Project Context:
Our client approached us to develop a framework to analyze the transaction data of their customers and tie these insights with loyalty card program and reward their customers by their preference and loyalty factor.

AAUM’s Contribution <Pilot demo>:
- Mined association rules to provide strategic insights for cross-sell/up-sell opportunities
- Framed out loyalty management model for the client.

Sample Deliverables
Project Context:
Our client, the police Department archived the crime data for the past ten years and approached AAUM to deliver insights by performing appropriate analytical techniques.

AAUM’s Contribution:
- Discovered hotspots of crimes by cluster analysis of the historic data.
- Trend analysis of different crimes
- Mining insights from the police records by text mining
- Derived KPIs for crime department to monitor the crimes.

Sample Deliverables

- Hot Spots found out for crimes in Chennai city.
- Trend movement for each type of Crime
- Mining insights from the comments recorded.

- An arrest was involved in 63% of the murder cases.
- In around 6% of the cases the deceased were unidentified.
- The arrested were remanded for about 54% of the cases.

- The stolen property was recovered in 70% of the cases.
- The victims were robbed of cash in 74% of the cases. For 84% of these cases the victims were robbed of property and cash.
- In 86% of the cases, the accused committed theft by threatening the victims with a knife.

- The culprit is unknown in 75% of the cases.
- From the plot and the rules it is evident that for 55% of the cases, the theft was committed by breaking down the lock.
Case Study: Predictive model to grade the performance of DCCBs

Project Context:
Developing Business intelligence and analytical capability for a leading rural bank

AAUM’s Contribution:
- Analyzed current BI maturity with comprehensive data analysis of the customer datum collected by our client
- Evaluated and suggested comprehensive plan for BI maturity
- Identified as strategic partner to perform predictive analytics in multiple phase spanning two years

Sample Deliverables

Legend:
- Red: Low
- Green: Medium
- Blue: High
- Orange: Very High

Distribution of Age
- Median age of the registrants observed to be 29 and the main population is 25-44 age group.

Distribution of Electricity Availability
- More than 95% customers have electricity available.

Distribution of Access to Public Health Care
- 12.27% has public access to health care

Distribution of Sanitation Access
- 64.61% customers use open spaces for sanitation.
Case Study: Analytics on data collected by a rural research firm

Project Context:
Our client has collected valuable data through their Kiosks and wanted to derive insights which can identify new potential business for rural India.

AAUM’s Contribution:
- AAUM profiled the villages and identified clusters
- Thorough analysis done for seven villages in three districts based on income slabs adopted from NCAER & Mckinsey report
- Identified new businesses which would flourish once the villagers migrate to higher income slabs

Sample Deliverables
Data Management: Seamless and secure data transfer using client infrastructure. More than 20 MB of raw data was cleansed and analyzed using tools available in excel.
Project Context:
Our client approached AAUM to build and implement analytical models for their Healthcare Claims Intelligence and Insights solution that was targeted at US Healthcare providers.

AAUM’s Contribution:
- A workflow and architecture for the claims engine was designed after interactions with the client.
- Comprehensive collection of data from the client was undertaken to frame the input for the model.
- Based on the design and data, the model was built with flexibility to be customized across client requirements.

Sample Deliverables:

Workflow and architecture of the claims engine were designed

Claims, Provider, Billing team and call data were used as input variables to build the model

The outcome of the approach was a model which could be customized as per client requirements.

Input Variables for building the model:

<table>
<thead>
<tr>
<th>Claims Data</th>
<th>Provider Data</th>
<th>Call Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim ID</td>
<td>Date of Claim</td>
<td>Avg. Cost</td>
</tr>
<tr>
<td>Address</td>
<td>Amount</td>
<td>USD</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Provider Data:

<table>
<thead>
<tr>
<th>Service</th>
<th>No. of Claims</th>
<th>Service Provider Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Call Data:

<table>
<thead>
<tr>
<th>No. of Calls</th>
<th>Average Cost</th>
<th>USD</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

The image contains diagrams and tables illustrating the workflow and architecture of the claims engine, as well as the input variables used to build the model. The diagrams depict the integration of data from various sources and the process flow of the claims engine. The tables outline the input variables, including claim details, provider data, and call data, highlighting the structure and content used in the model building process.
Case Study: Credit scoring framework for Micro Finance Institutes (MFI)

Project Context:
Our client wanted Aaum to evaluate and identify a suitable credit scoring framework for scoring MFIs.

AAUM’s Contribution:
- Aaum presented a white paper evaluating various credit scoring methodologies.
- Plan in progress for solution implementation.

Sample Deliverables
Credit reporting contains consumer specific information which aids lenders and other organizations to make qualitative decisions...

Devising a scoring framework would elucidate objective with right approach to modeling, rules formulation & statistical tools selection.

Credit Information Bureau (India) Limited Source: [http://www.cibil.com/consumer.htm](http://www.cibil.com/consumer.htm)
Case Study: Business intelligence dashboard

Project Context:
Our client approached Aaum to build cost-effective analytical dashboards to reap the benefits of analytical insights for their business activities.

AAUM’s Contribution:
- Customized analytical dashboards specific to client business
- Dashboard and reports developed and customized specific to roles.
- Appropriate KPIs and metrics generated specific to the client business.
- Ability to store reports in multiple formats

Sample Deliverables

Dashboard and reports were developed/deployed specific to roles ...

Enriched with reports, KPIs and information as per user privileges ...

Multiple possibilities to store content in the format desired by the business ...
Project Context:
Aaum is developing the individual credit scoring model in partnership with NABARD, National banks, Government, NGOs to grade individuals/SHGs.

AAUM’s Contribution:
- AAUM team simplified the process with no physical requirement to travel physically to SHG/NGO locations.
- The team is devising credit score algorithms and configured in the server to perform automatic scoring.
- The entire model is getting deployed in the mobile phone to facilitate quick reach in the remote places.

Sample Deliverables
The system would captures all receipts (for the money collected from individual members)

Benefits:
- Big socio-economic impact by strengthening the SHG-credit linkage by connecting NGO’s, Banks, MFI’s, Cooperatives and Societies, Linking Government, Banks And State Government.
Case Study: Geographic Dispersion of Business Risks for a financial institute

Project Context:
Our client wanted AAUM to build geographical dispersion of business risks in India

AAUM’s Contribution:
- AAUM identified the variables needed to build risk at a location and created demographic risk framework
- AAUM used demographic risk framework and identified risks for 60 districts in 18 states in India

Sample Deliverables
Questions/Feedback?

Contact us

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🔗 http://www.linkedin.com/company/aaum-research-and-analytics-iit-madras

About Aaum

Aaum Research and Analytics founded by IIT Madras alumnus brings in extensive global business experience working with Fortune 100 companies in North America and Asia Pacific. Established at IIT Madras Research Park with a focus on researching and devising the sophisticated analytical techniques to solve the pressing business needs of corporations ranging from travel & logistics, finance, insurance, HR, Health Care, Entertainment, FMCGs, retail, Telecom.

“Organizations are competing on analytics not just because they can- but because they should…”