The Consumer Pyramids Survey

Quality Control Systems

Mahesh Vyas Centre for Monitoring Indian Economy Pvt Ltd. July 2016

Consumer Pyramids

A multi-wave planned household survey

- 1. A multi-wave survey of a panel of over 158,000 households.
- 2. Panel surveyed thrice a year. 26 waves since 2009, 7 since 2014, 8th in progress.
- 3. Estimates of household demographics, income, expenses, assets & liabilities.
- 4. Sample covers 7,500 enumeration blocks in 325 towns and 2,800 villages.
- 5. Survey execution planned in detail

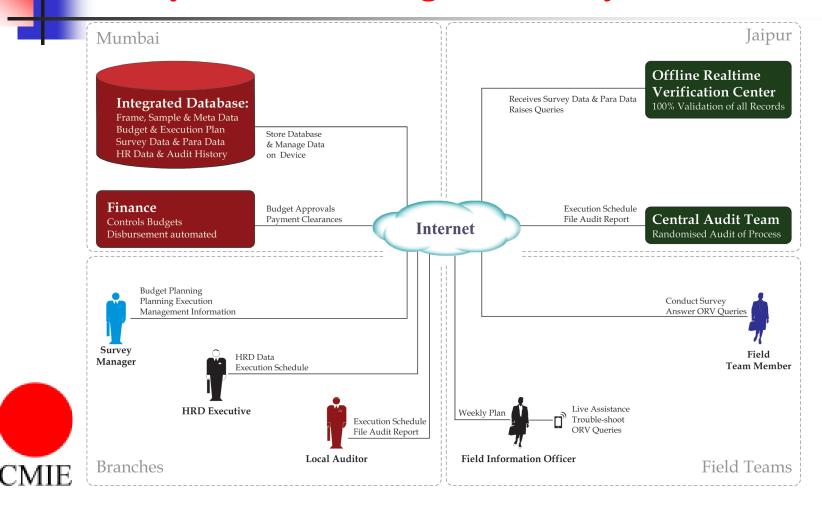
Annual Plan	Round 1	Round 2	Round 3
Monthly Slot 1	January	May	September
Monthly Slot 2	February	June	October
Monthly Slot 3	March	July	November
Monthly Slot 4	April	August	December



6. Each Monthly Slot consists of 4 Weekly slots of 7 or 8 days each depending upon the number of days in a month.

7. 39,500 households are surveyed in a month and 9,875 households are surveyed in a week.

Consumer Pyramids IT-systems managed survey execution



Consumer Pyramids

Advantages of an IT-controlled survey

- 1. Cost effective and environment friendly
 - 1. No paper data-entry forms, no data-entry operations.
 - 2. 100% electronic capture of data on mobile phones.

2. Efficient management

- 1. Fully integrated central database with all information on survey.
- 2. 100% database-managed execution processes, including communications.
- 3. Automatic payment of dues through bank transfers
 - 1. Eliminates intermediate management and potential corruption
 - 2. Builds confidence among interviewers.
- 4. Upstream quality assurance over downstream quality control
 - 1. Upstream quality assurance: Outliers are *argued* in real-time
 - 2. Outliers are *valued* as important observations
 - 3. Avoid downstream quality controls like post-survey "clean-up" operations.
 - Real-time uploads enable fast frequency measures
 - 1. IT-controlled systems enable real-time interventions for quality control.
 - 2. Given a large sample, real-time uploads facilitates fast frequency measures.

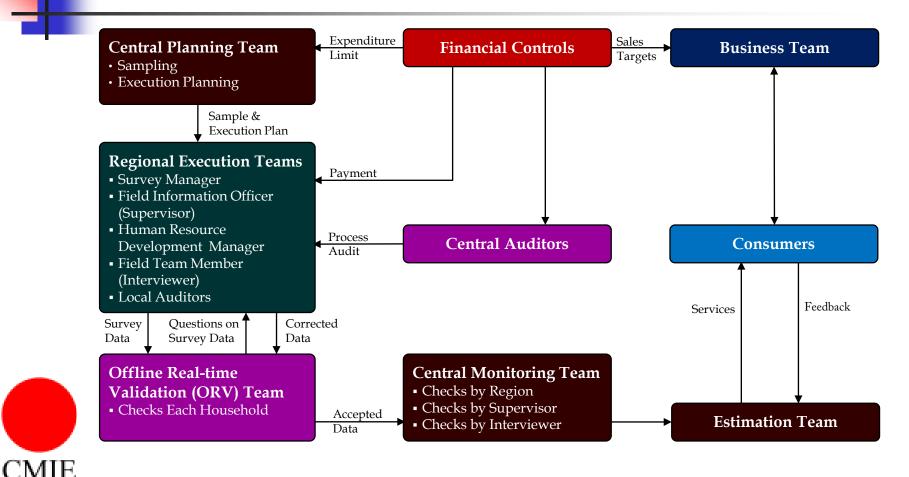


Consumer Pyramids Survey execution team size

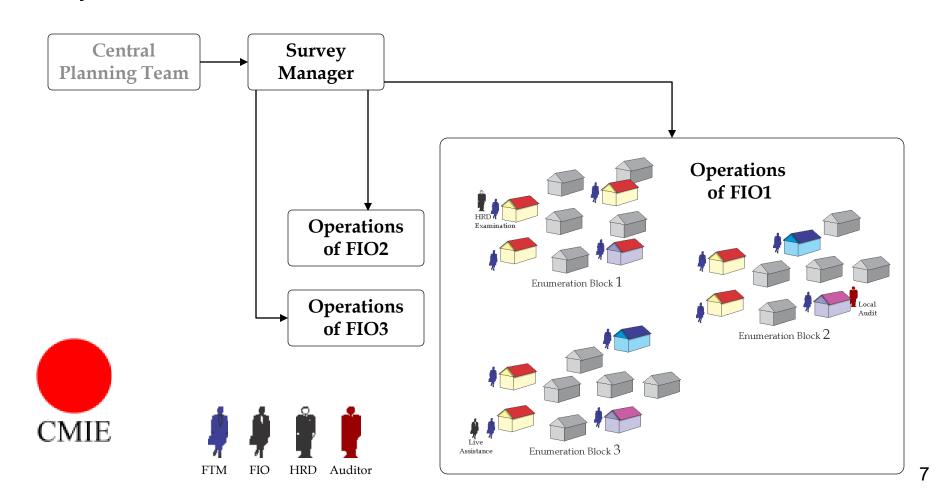
Team	Numbers
Supervision during Execution	83
Central Planning Team	2
Regional Survey Managers	6
Human Resource Development Managers	5
Field Information Officers	70
Field Team Members (Interviewers)	200
Supervision post Execution	61
Local Auditors	12
Offline Real-time Validations Team	35
Central Monitoring Team	8
Central Auditors	6
Total	344
Interviewer : Supervisor Ratio	1.4
No part of the survey is sub-contracted	



Consumer Pyramids Organizational structure & workflow



Consumer Pyramids Regional execution teams



Consumer Pyramids GPS & ORV in survey execution

- 1. Survey of every city or village is necessarily conducted by a team of Field Team Members.
- 2. Field Team Members download empty electronic forms (on GPS-enabled smart mobile phone devices) allocated for the day and reach city or village to be surveyed.
- **3**. Survey execution at the household:
 - i. Identify respondent (most articulate member of household).
 - ii. Take GPS location and <u>Start</u> survey.
 - iii. Conduct interview (takes about 60 minutes to complete survey).
 - iv. End (or temporarily suspend) survey and take GPS location.
 - v. Upload completed form.
 - vi. Check ORV responses on earlier household, respond to queries and upload (appropriately modified wherever necessary) form.
 - vii. Move to next household in allotted panel for next interview.



Consumer Pyramids Off-line Real Time Validations

- Offline Real Time Validations (ORV) team is located in Jaipur completely independent of the execution machinery. It does three kinds of checks on the execution:
- Checks physical location of FTMs. It tracks movement of FTMs on the field by tracking GPS location signals over Google Maps.
- 2. Assesses the plausibility of real data-entry operations. It checks the complete sequence of screens visited and fields edited and time taken on each.
- 3. Evaluates the plausibility of the data entered. It checks the data entered during a survey compared to similar data collected during earlier surveys. ORV team has access to past data on households, which the FTMs and FIOs do not have.



Consumer Pyramids Check physical location of FTMs

Nagpur

Mumbai

CMIE

Pune

The GPS signals received must match their expected location as set by the execution plan. Figure above shows execution of survey in Maharashtra on July 21, 2016.

Consumer Pyramids Ensuring FTMs reach households

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Consumer Pyramids Ensuring data is based on an interview

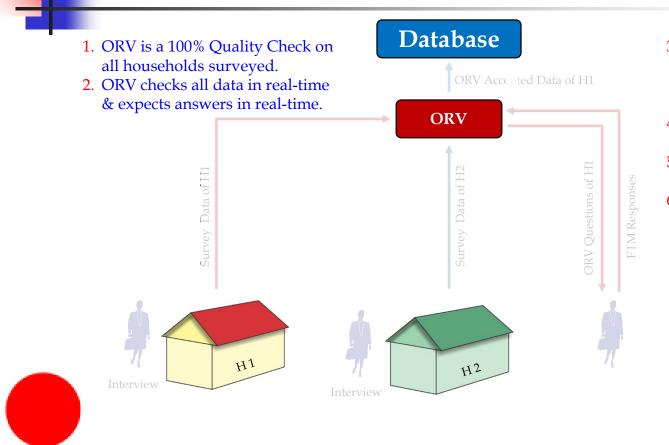
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Consumer Pyramids Assessing accuracy data

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Consumer Pyramids What is *Real-time* and *Off-line* in ORV

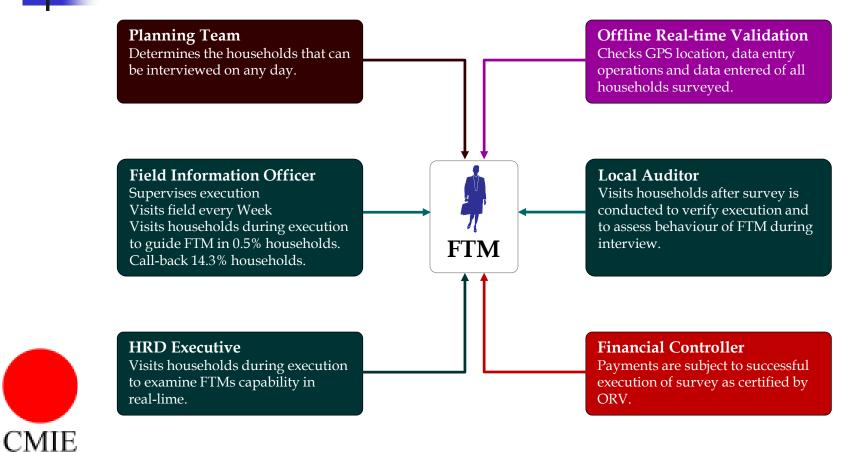


CMIE

- 3. ORV checks data of a household while FTM completes survey in next household
- 4. ORV sends questions to FTM in field
- 5. FTM rechecks or revisits household in real-time
- 6. Unresolved problems are escalated to Field Information Officer or Survey Manager to be resolved in real-time



Consumer Pyramids Controls on the Interviewer (FTM)



Consumer Pyramids Challenges & Future Course

Challenges

- 1. GPS location can be fudged. Internet reach.
- 2. ORV can nudge observations.
- 3. FTMs can play an ORV-guessing game.

Future Course to Improve Execution

- 1. Quality Control is more than arresting falsification.
- 2. Integrate data-driven interviewer effect measures into live execution processes.
- **3**. Integrate daily inference surprises into execution processes.



Thank you

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Mission Help our clients take informed decisionsVision Be the most effective source of knowledge solutionsValues Independence, Integrity, Reliability