



The Consumer Pyramids Survey

Quality Control Systems

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Centre for Monitoring Indian Economy Pvt Ltd.

July 2016



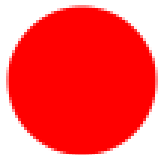
Consumer Pyramids

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

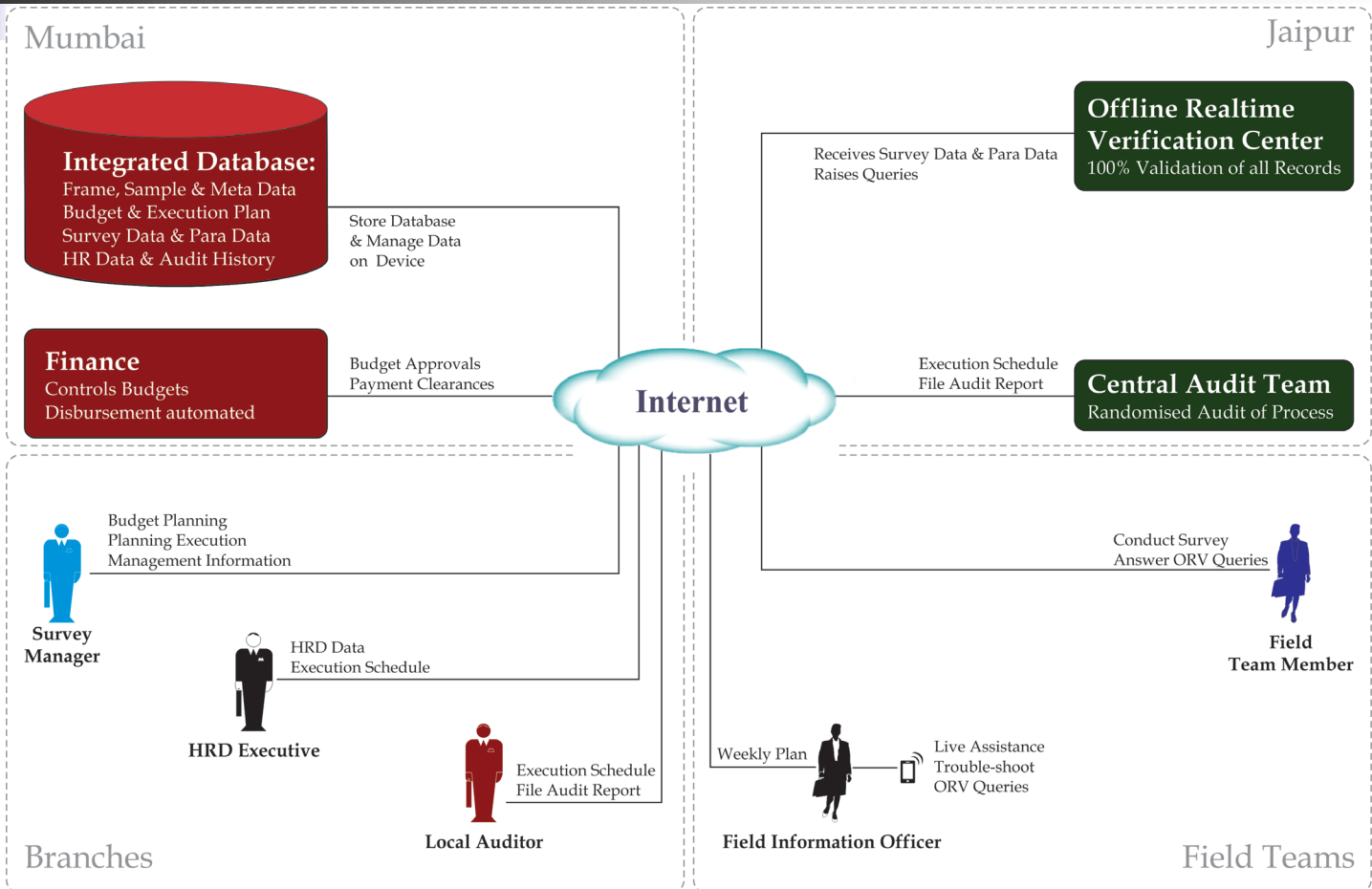
6. Each Monthly Slot consists of 4 Weekly slots of 7 or 8 days each depending upon the number of days in a month.
7. 39,500 households are surveyed in a month and 9,875 households are surveyed in a week.



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IT-systems managed survey execution

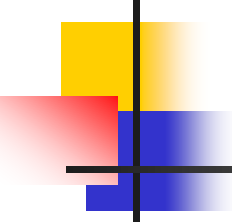




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Advantages of an IT-controlled survey

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.
5. **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.



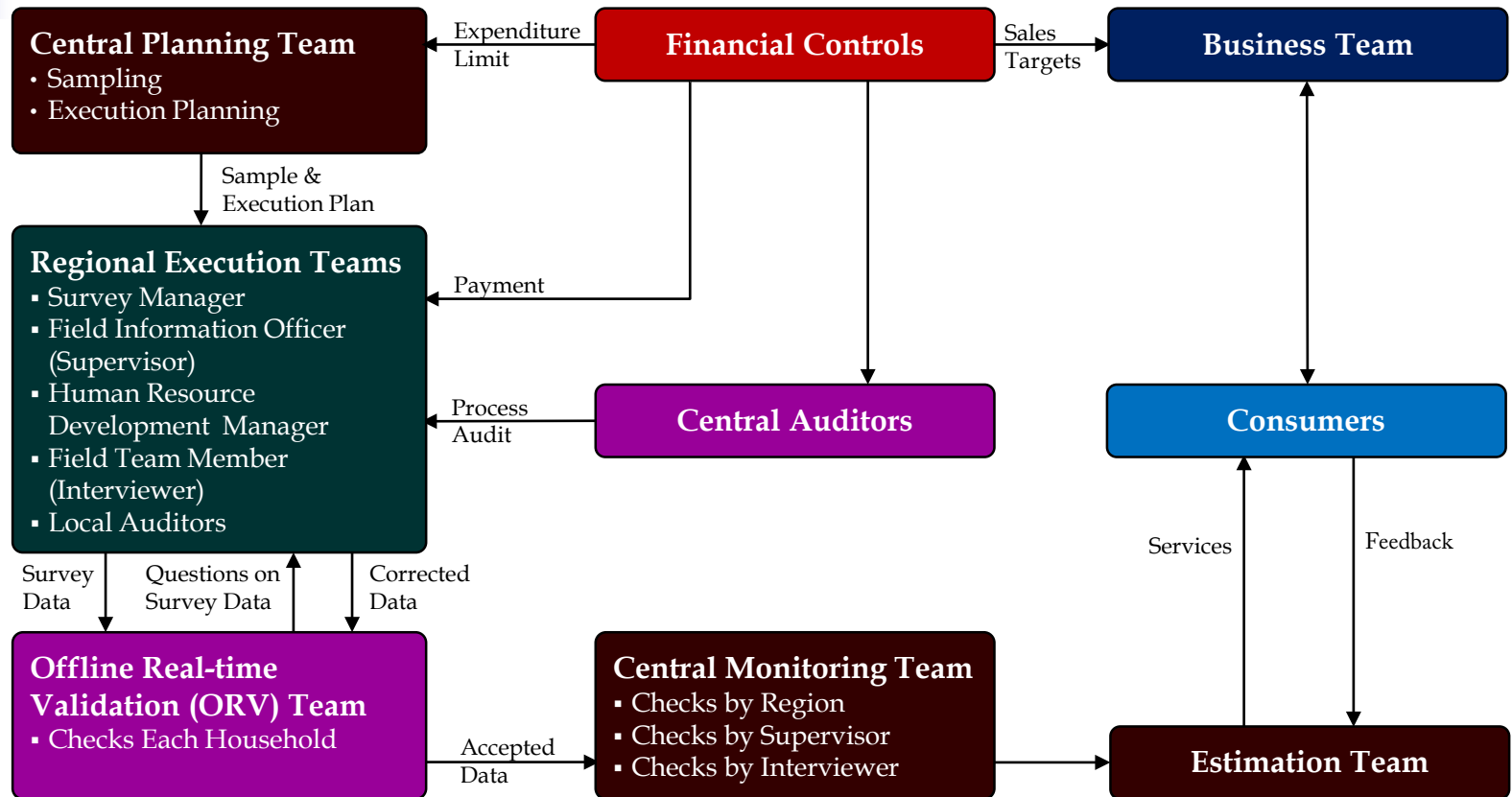
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Survey execution team size

	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
	<i>Interviewer : Supervisor Ratio</i>	<i>1.4</i>
	<i>No part of the survey is sub-contracted</i>	

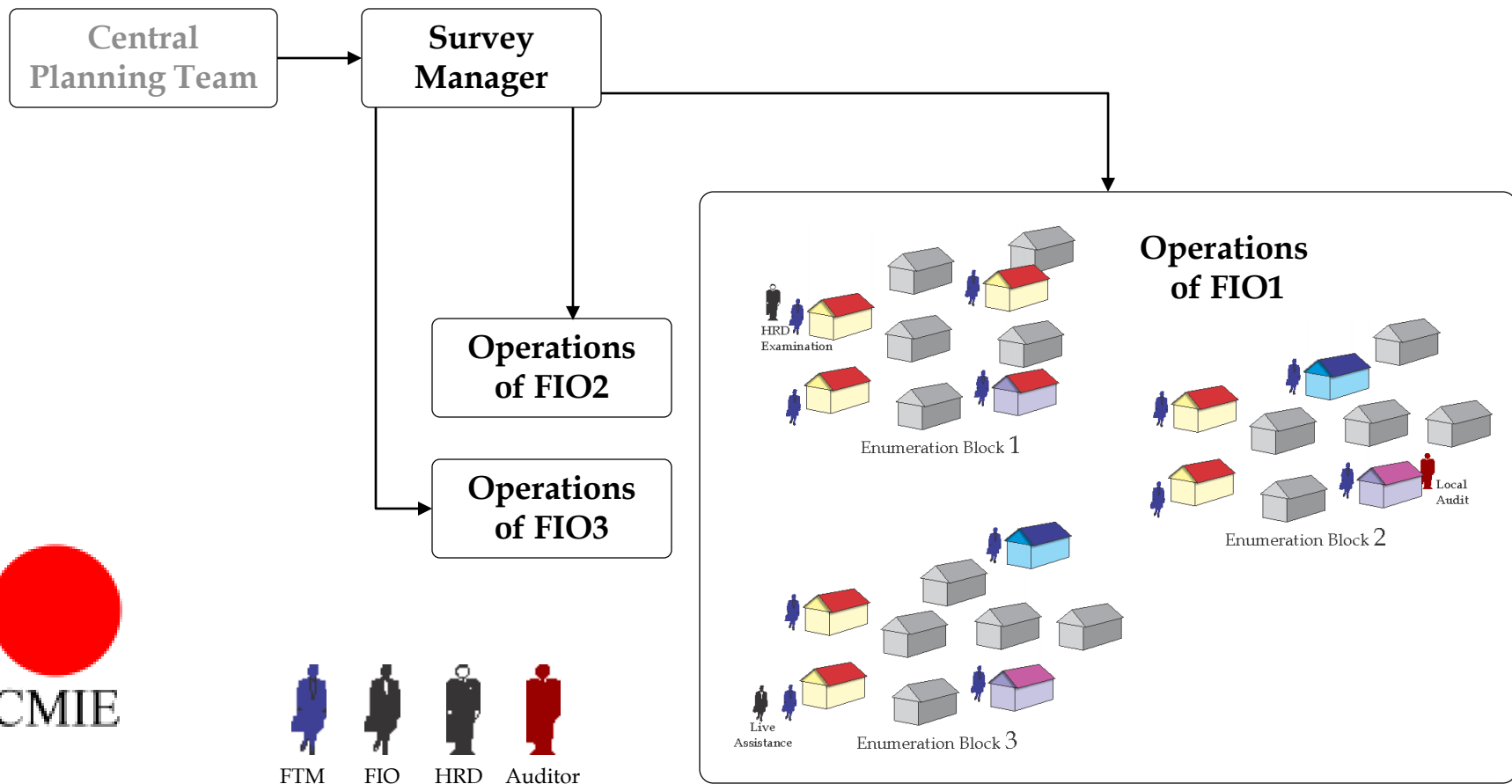
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Organizational structure & workflow



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Regional execution teams





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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 Start 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.



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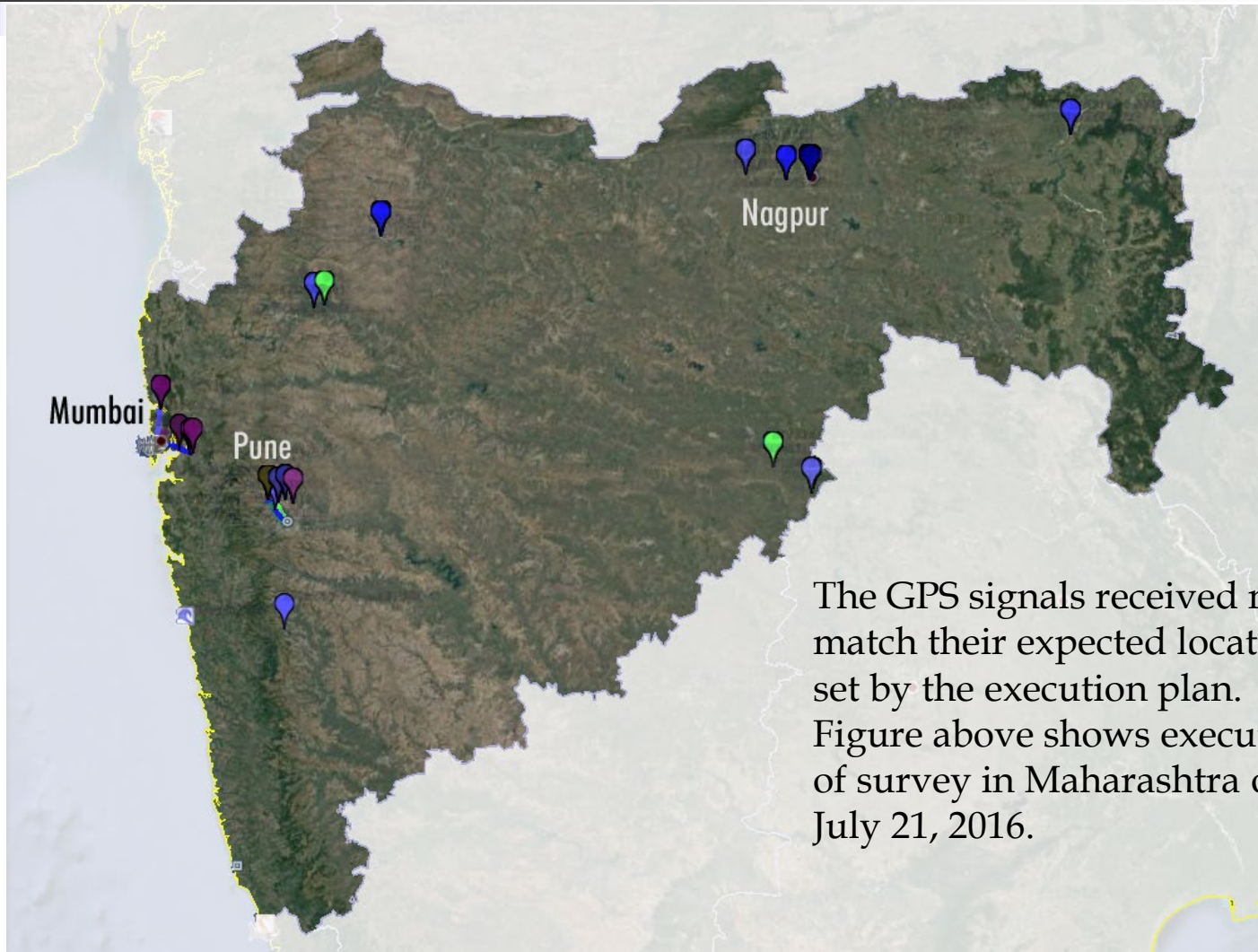
Off-line Real Time Validations

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:

1. **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.

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Check physical location of FTM's



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.



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Ensuring data is based on an interview

Story Telling			
From Date	16 Jul 2016	Start Time (HH:MM:AM/PM)	00:00AM
To Date	16 Jul 2016	End Time (HH:MM:AM/PM)	23:59PM
App Version (DD)	20.2	Reference Time	Jul 16 2016 12:05:2

Seq	Screen	Time on screen	Entry order	Time since start
0	Date Confirmation	- - - - -	- - - - -	- - - - -
1	Home	- - - - -	- - - - -	- - - - -
2	Login Page	- - - - -	- - - - -	- - - - -
3	Download & Upload the household	- - - - -	- - - - -	- - - - -
4	Invalid HH List	- - - - -	- - - - -	- - - - -
5	Success Message	- - - - -	- - - - -	- - - - -
6	FTM List	- - - - -	- - - - -	- - - - -
7	FTM Household List	- - - - -	- - - - -	- - - - -
8	F10 Visit Household	- - - - -	- - - - -	- - - - -
9	F10 Household Status	- - - - -	- - - - -	- - - - -
10	F10 GPS Message	- - - - -	- - - - -	- - - - -
11	F10 Verify Household	- - - - -	- - - - -	- - - - -
12	F10 Verification Category	- - - - -	- - - - -	- - - - -
13	F10 Verification HH List	- - - - -	- - - - -	- - - - -
14	F10 Live Verify Household	- - - - -	- - - - -	- - - - -
15	F10 VERIFICATION FTM List	- - - - -	- - - - -	- - - - -
16	Select Household	- - - - -	- - - - -	- - - - -
17	Start Household Survey	8 2 0 29 0 29 1 2 4 0	0 2 68 69 71 72 74 75 79 80	0 15 33:19 33:42 34:12 34:51 35:44 6:17:57 6:18:29 6:49:30
18	Location of Household	- - - - -	- - - - -	- - - - -
19	Household GPS Message	5 1 - - - - -	1 70 - - - - -	9 34:11 - - - - -
20	Household Survey Commenced	12 1 1 - - - - -	3 15 76 - - - - -	17 10:24 6:18:00 - - - - -
21	Member Roster	4:37 - - - - -	4 - - - - -	30 - - - - -
22	Member Identity	49 - - - - -	5 - - - - -	5:07 - - - - -
23	Member Health	17 - - - - -	6 - - - - -	5:56 - - - - -
24	Member Education	1:15 - - - - -	7 - - - - -	6:13 - - - - -
25	Member Occupation	1:05 - - - - -	8 - - - - -	7:28 - - - - -
26	Member Financial Inclusion	21 - - - - -	9 - - - - -	8:33 - - - - -
27	Member Securities	13 - - - - -	10 - - - - -	8:54 - - - - -
28	Member Income	28 - - - - -	11 - - - - -	9:07 - - - - -
29	Household Income	3 - - - - -	12 - - - - -	9:35 - - - - -
30	Member Mobile No.	40 - - - - -	13 - - - - -	9:38 - - - - -
31	Food : PART I	6 2:52 - - - - -	14 54 - - - - -	10:18 19:45 - - - - -
32	Food : PART II	2:02 - - - - -	55 - - - - -	22:37 - - - - -
33	Intoxicants, Restaurant & Recreation	53 - - - - -	56 - - - - -	24:39 - - - - -
34	Clothing & Cosmetics	1:07 - - - - -	57 - - - - -	25:32 - - - - -
35	Toiletries & Home Care Products	2:00 - - - - -	58 - - - - -	26:39 - - - - -
36	Bills, Rent, EMIs & Appliances	7 - - - - -	59 - - - - -	28:39 - - - - -
37	Power, Fuel & Communication	51 - - - - -	60 - - - - -	28:46 - - - - -
38	Education	34 - - - - -	61 - - - - -	29:37 - - - - -
39	Health	24 - - - - -	62 - - - - -	30:12 - - - - -
40	Miscellaneous	34 - - - - -	63 - - - - -	30:36 - - - - -
41	Weekly expenses	39 - - - - -	64 - - - - -	31:18 - - - - -
42	Saving	42 5 - - - - -	16 65 - - - - -	10:25 31:49 - - - - -
43	Purpose & Source of Borrowing	31 - - - - -	17 - - - - -	11:07 - - - - -



Screen

Time Spent

Screen Visit Order

Time Since Start

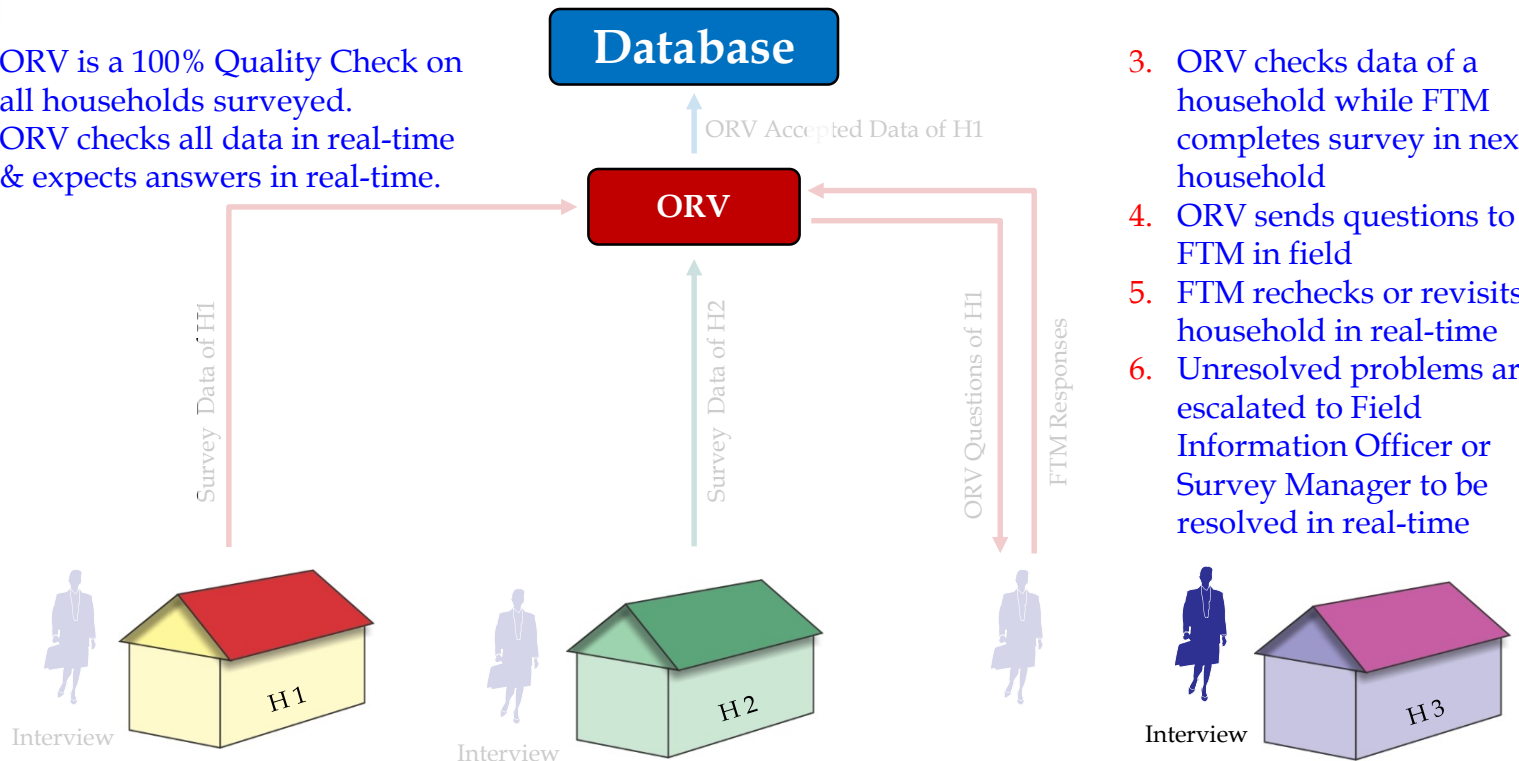
Switch / Idle Time

Data of household surveyed on July 21, 2016 is compared to data of same variable from same household surveyed on March 18, 2016.

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

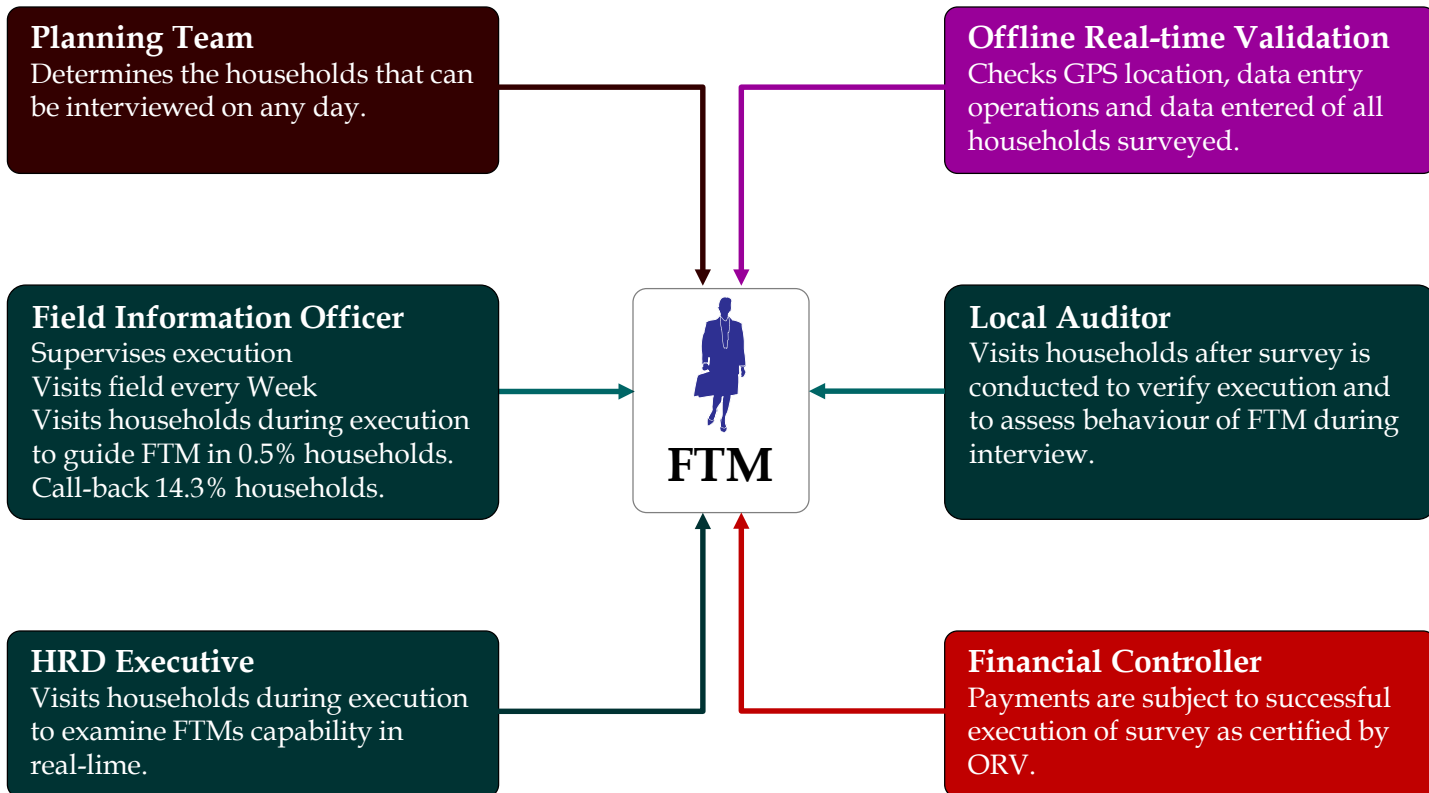
1. ORV is a 100% Quality Check on all households surveyed.
2. ORV checks all data in real-time & expects answers in real-time.



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

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Controls on the Interviewer (FTM)





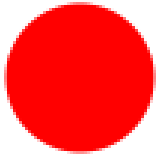
Consumer Pyramids Challenges & Future Course

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.



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Thank you

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Vision Be the most effective source of knowledge solutions

Values Independence, Integrity, Reliability



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