



## **Fraud Management System – Selection and Retuning**

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# Presentation Outline

- Some facts about Telecom Fraud
- ROI of Fraud Control System
- Available products
- Cost of Implementation
- Product selection criteria – technical capability
- Product selection criteria – business functionality
- Product limitation
- Conclusion

# Revenue impact of Telecom Fraud- Source



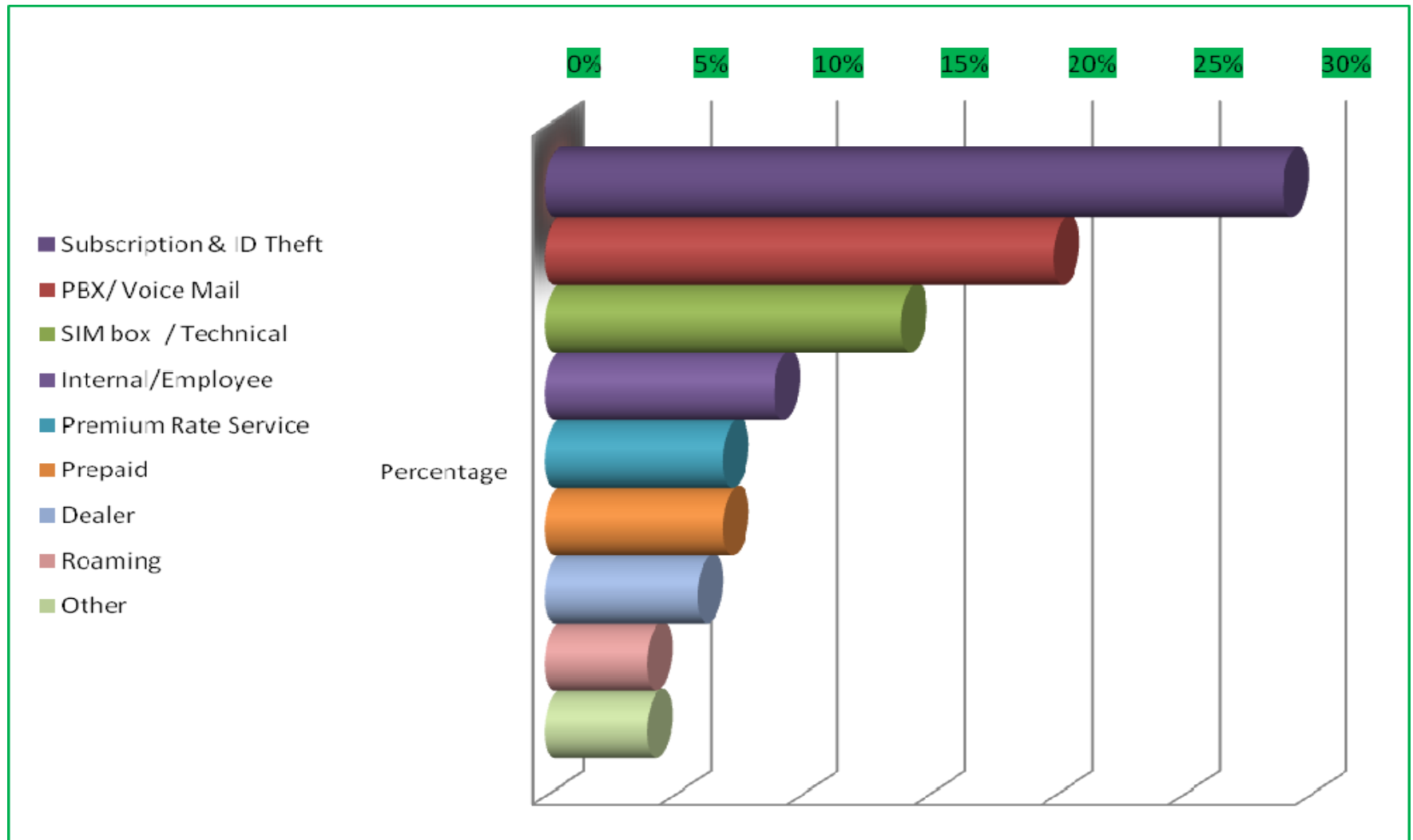
Estimated global fraud loss (Survey included 123 operators and more than 30 countries):

- \$72 -\$80 billion (USD) annually (34% increase from 2005)
- Approx. 4.5% of telecom revenues
- 91% global fraud losses increased or stayed same
- 78% Fraud increased or remained same

## Top 3 Fraud Types:

- \$22 billion –Subscription/Identity (ID) Theft
- \$15 billion –Compromised PBX/Voicemail systems
- \$4.5 billion –Premium Rate Service Fraud
- Terrorist organizations
  - Raise fund & Hide Identity

# Fraud type survey Wireless & Wire-line



# Why do we need Fraud Control System

- Potential of minimizing revenue loss
- Complexity of Products & Services
- Changing Fraud behavior
- Smishing & Spamming
- SKUKU USB SIM phones (No roaming charge for terminating calls)
- Soft SIM – Multiple copies, Roaming location
- Migration of computer related frauds
- Trojan attack (Mobile game –Anti 3D)- Makes PRS calls/ SMS/ MMS
- DoS attack on SMSC - worm sent SMS at number +3396003964
- Telecom Distributed Denial of Service (DDoS)
- M-commerce frauds

# ROI of Fraud Control System

- Do we need to justify ROI of FCS to management
- Industry standard on calculation of averted loss?
  - Perception of Fraud Manager
  - How do you actually calculate the ROI
- Regulatory requirement?
  - Report illegal call routing
  - Report bulk connection
  - Stop grey market phones on the network (Cloning of IMEI)
  - Report cloned IMEI numbers
  - New DOT security and Network policy by Dec 2010
  - Term cells increased from 4 in 2004 to 34
  - Operators may be asked to use triangulation method
  - Unearth syndicate crime

# Regulatory requirement

41.19 (ii) The call detail records for outgoing calls made by customers should be analyzed for the subscribers making large of out going calls day and night and to the various telephone numbers. Normally, no incoming call is observed in such cases. This can be done by running special program for this purpose. The service provider should devise appropriate fraud management and prevention programme and fix threshold levels of average per day usage in minutes of the telephone connection. All telephone connections crossing the threshold of usage should be checked for bonafide use. A record of check must be maintained



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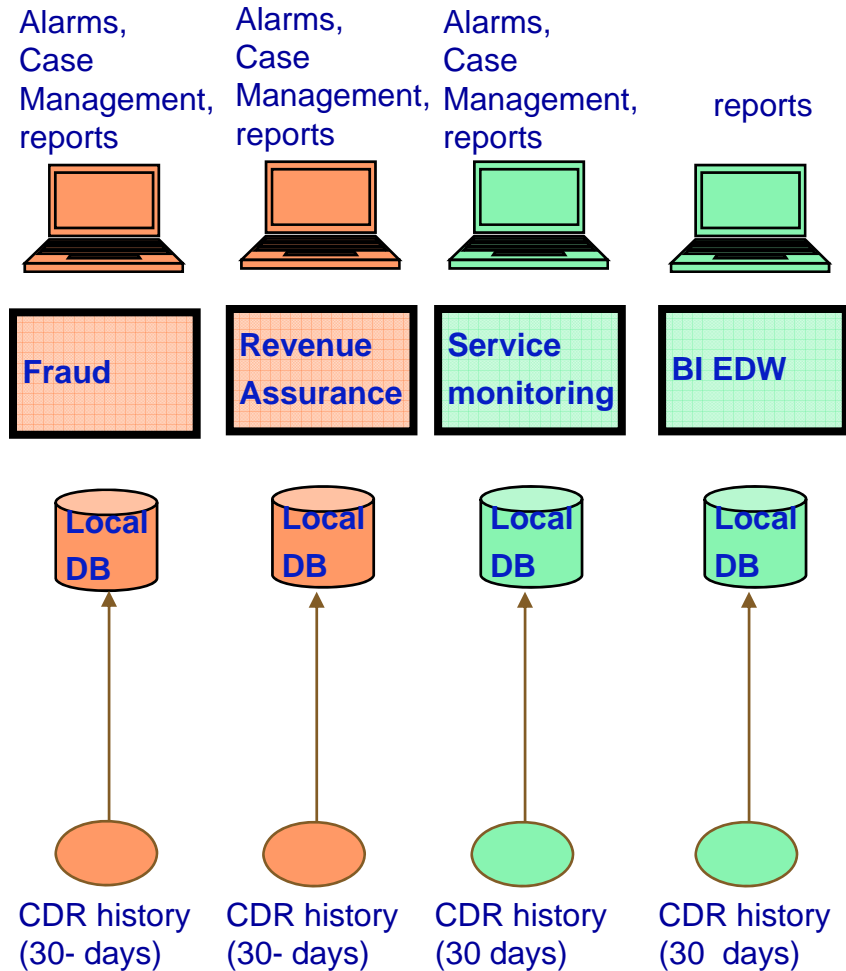
## Department of Telecommunication formulating security policy

Definition

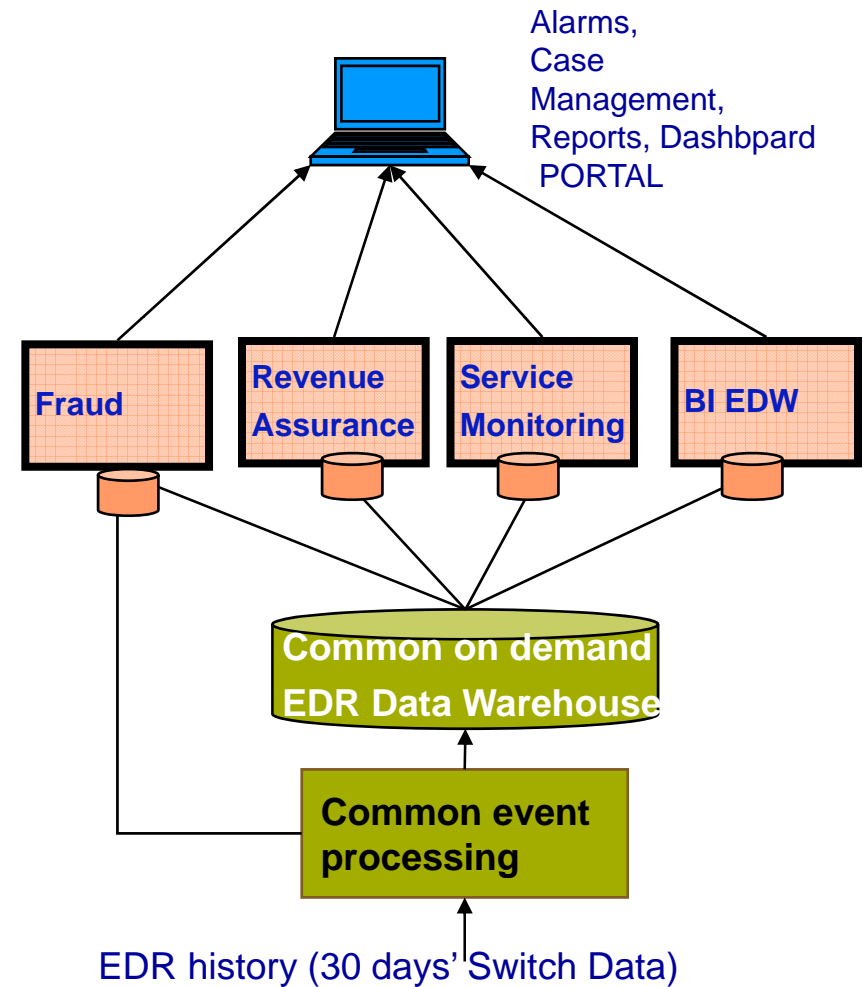
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By Nivedta Mookerji | Place: New Delhi | Agency: DNA

# Optimize ROI --Suggested Approach

## Current Approaches



## Suggested Approach



# Available products

- Subex : Nikira Renamed ROC Fraud Management system
- Neural Technology : Minotaur
- Connectiva Systems : SENTRY
- Hewlet Packard : HP FMS System
- Agilis International : Netmind
- Alcatel : Alcatel Fraud Management System

# Cost components of FCS

- Varies from vendor to vendor
- Depends on the negotiation skills
- Volumetric and scope of future business
- License component varies from few modules to complete suite
- License cost for full suite varies from USD 0.8 million to 1.5 million
  - Number of subscribers (25 million subs)
  - Number of data sources (25)
  - Additional data source adapter (USD 10 K)
- Application IT support USD 350-550 mandays
- Implementation cost 4-6 months 4 resources
- AMC: 15% - 25% of license cost (24x7 to 8 hours 5 days week support)

# Cost components of FCS – contd...

- Complete Managed services (USD 2-3 million for 3 year contract)
  - Requirement gathering to Implementation of product
  - Rule configuration / Rule Management
  - Alarm investigation – Action – Closure
- Partial Managed service
  - IT outsources – development, operations, maintenance with SI
  - Alarm investigation and closure
- Hardware cost – Depends on the configuration
- Software cost – Operating system (Oracle / DB2)
  - Cost involved at each upgrade
- Total implementation cost varies between USD 1.25 to 2.5 million

# Product selection criteria - Technical

- Performance
- Scalability
- Data parser
- Data interface capability
- Cross reference data interface capability
- Remote procedure call (RPC) – to take action on other application
- User friendly GUI
- Drag and drop rule configuration module
- Web based access
- Ability to directly integrate with SS7 probes

# Product selection criteria – Technical –Contd..

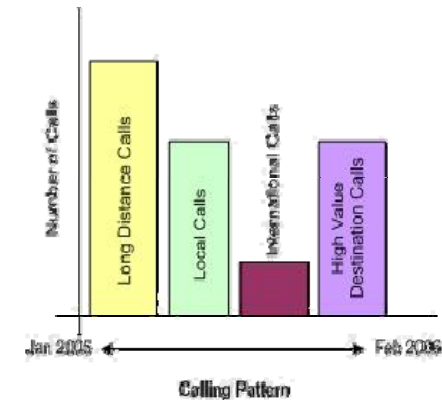
- Online subscriber update using middleware
- Online display from HLR triggers
- Product implementation time frames
- Delayed CDR support
- Asynchronous CDR support
- Backup and trend analysis
- Addresses security concerns
  - Idle session timeout
  - Supports sftp
  - Proper Encryption of Subscriber data
  - Information sharing between client and server in encrypted mode

# Product Selection criteria - business

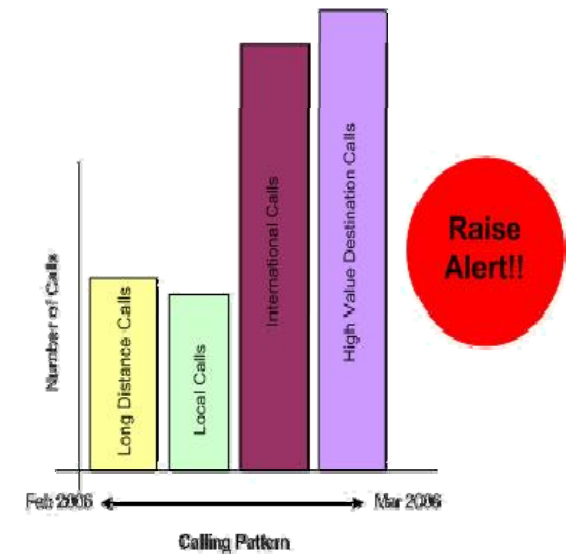
- Subscription fraud
- Identity theft - Duplicate detection
- e-Finger printing & Call profiling
- Real time usage vs. Credit monitoring
- PBX Fraud detection module
- Internal Fraud
- High usage fraud
- PRS fraud
- Hotlist capability
  - Calling Number
  - Called number / Translated number
  - Forwarded number
  - Credit card



Name: John Patrick

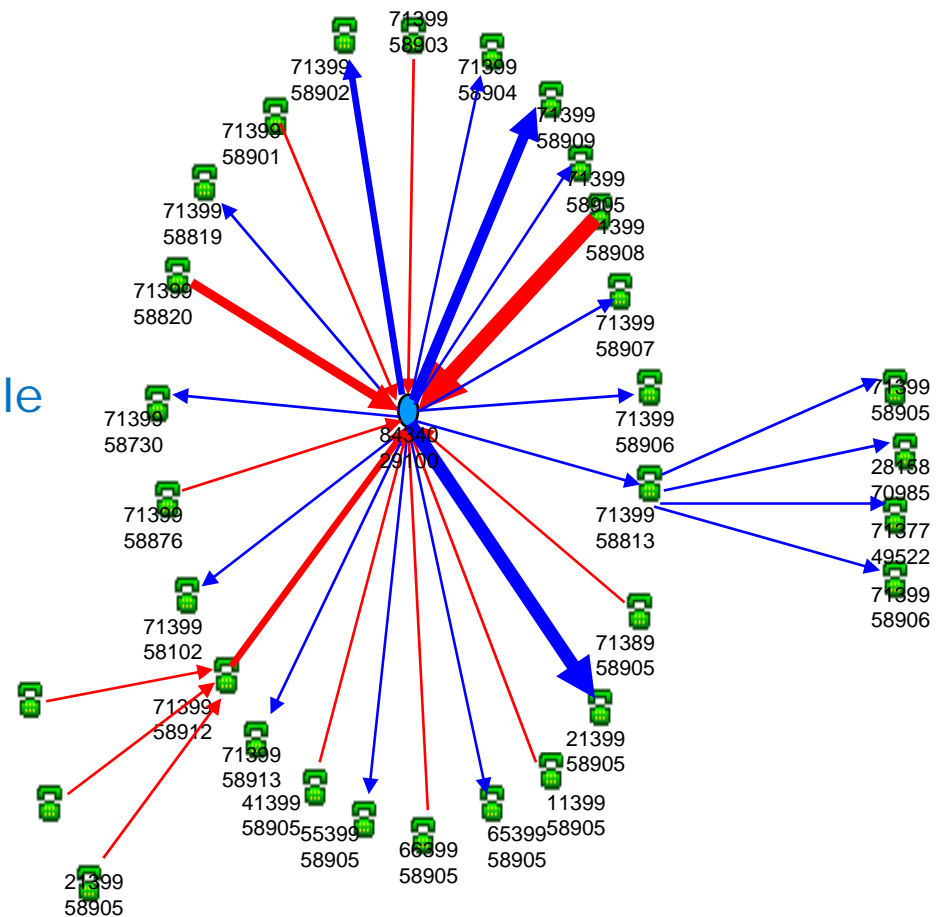


Name: John Patrick



# Product Selection criteria - business

- Cloning module
- SIM box detection module
- Call profiling
- Roaming high usage module
- Dealer fraud
- Subscriber Service violation module
- Artificial Intelligence module
- Pseudo rating module
- CRM, Billing and HLR view
- Alarm management
- Case management / Reallocation
- User management



# Existing FCS products Limitations

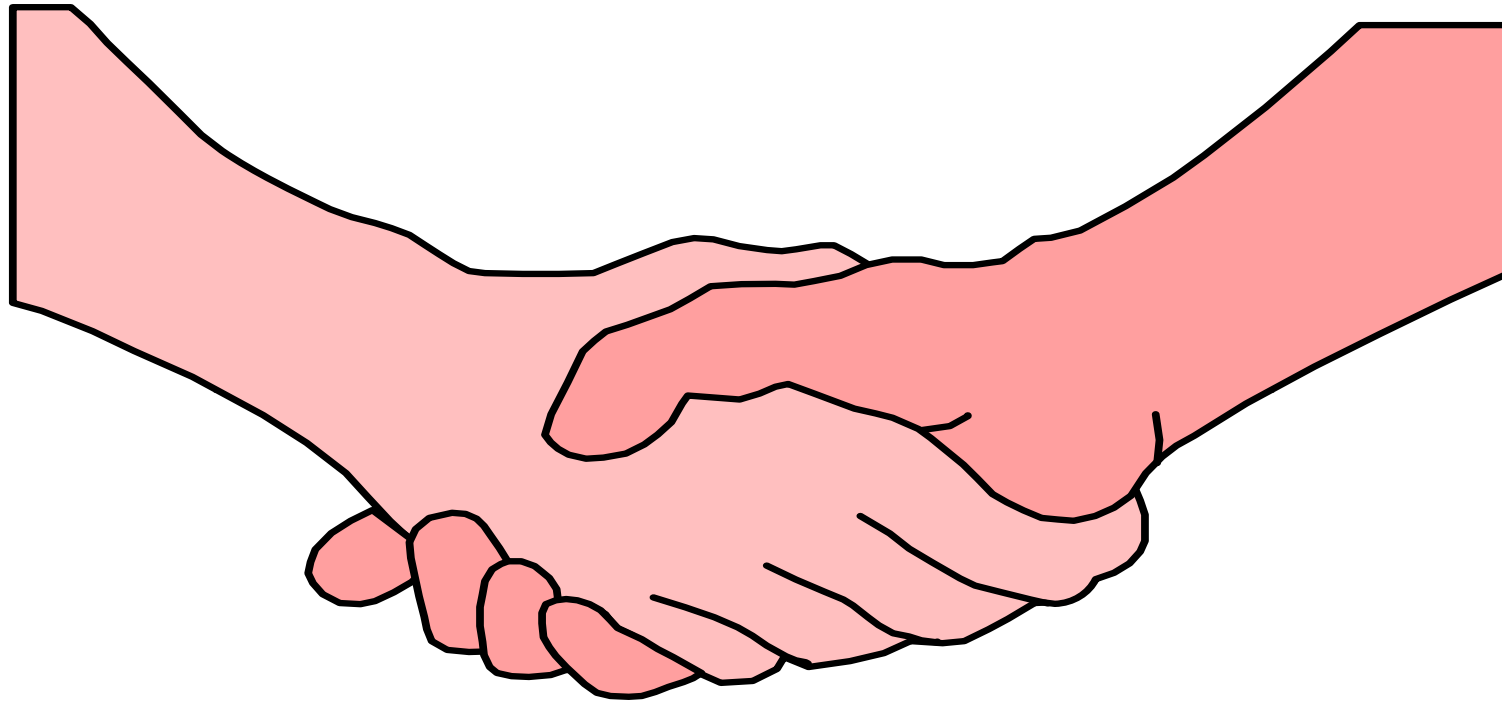
- Thin down version of De-dupe check
- De-dupe check not available on update record
- Pan- India De-dupe not possible on select data fields
- Call collision for delayed CDR
- Call collision between Voice and data
- Velocity check – Air distance violation & Road distance violation
- Pseudo rating
  - Not able to handle Unlimited rate plans
  - Rate plan with PRP not supported
  - NRTRDE only one rate is supported

## Existing FCS products Limitations contd..

- Alert based on HUR not directly supported
- Huge gap between actual usage and pseudo rated value
- Most of the tools are rule based
- AI rules very resource intensive
- Learning time of AI module is very high
- System based alert sharing between RA / Credit control etc.
- Rule simulation module
- All new age and computer related fraud
- Data encryption and security related concerns

# Conclusion

- What is Changing Communication method & “State of Fraud”
- “If the cost of airtime is dropping” is Fraud non-issue?
- Changing telecom ecosystem - Review Control methods
- National security - Tool
- Better design to minimize cost
- No easy path to Fraudster



**THANK YOU**

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