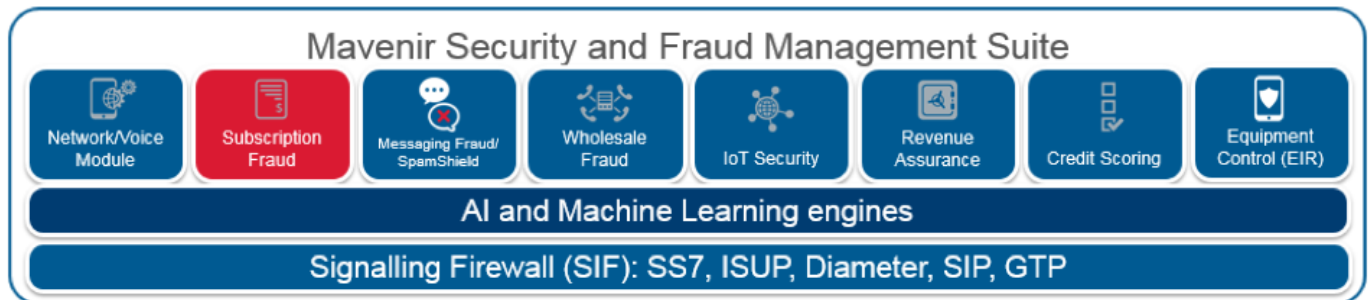


Subscription Fraud



Subscription fraud is different on every network, as some are more disposed for prepay or post pay connections. Blacklists of 'Hot addresses' are typically maintained but far from complete, and can't identify spoofed street names with no other customers

Example: A Fraudster will seek to gain a new SIM connection and/or handset by using forged or stolen identity + credit card + address or 'account takeover'.

1. Handset re-sale: The Fraudster may 'sell on' the handset for a profit, possibly to innocent 3rd parties
2. Free Usage they will ever pay for
3. Future Fraud: SIM may be used for other frauds (e.g.: IRSF)
4. Profile
5. Fraudsters may make no payments (categorized as Never Pay Fraud)
6. Fraudsters may make some to build up initial credit history, seeking to lengthen the time before the Operator will eventually terminate their account and loose custom.

The need for machine learning

Traditional detection provides alerts generated in-store based on customer history or credit checks, or against some known hot addresses or names but doesn't protect from stolen identify or address without previous known fraud. Alerts on high usage over time are too late to prevent handset loss.

Fraud never stops, it only changes. Fraudsters often change spelling of names and address, translate to another language, or type letters instead of numbers.

Benefit with Machine Learning Approach

A model is built for subscription fraud using connection data to 'learn' what subscription fraud looks like on each unique network. Machine Learning 'scores' each future connection against the known profile using proprietary 'features'. This allows fraudulent connections to be identified, while also identifying new fraud approaches such as spoofed address with no genuine customers

USE CASE: Tier 1 European Operator – ROI up to 2.5 M Euros

	EXISTING SYSTEM	MACHINE LEARNING
IDENTIFIED	22% (1500)	72% (4921)
MISSED	5000	1845
FALSE POSITIVES	10500	2461

Based on 120,000 connections

Summary:

Existing system: 120k subscribers connected through online portal of a Tier 1 Operator in Europe for one year.

ROI estimated by Mavenir to be up to 2.5 M Euros (based on handset cost /unpaid services)