

PREDICTIVE MAINTENANCE FOR SERVICE ASSURANCE

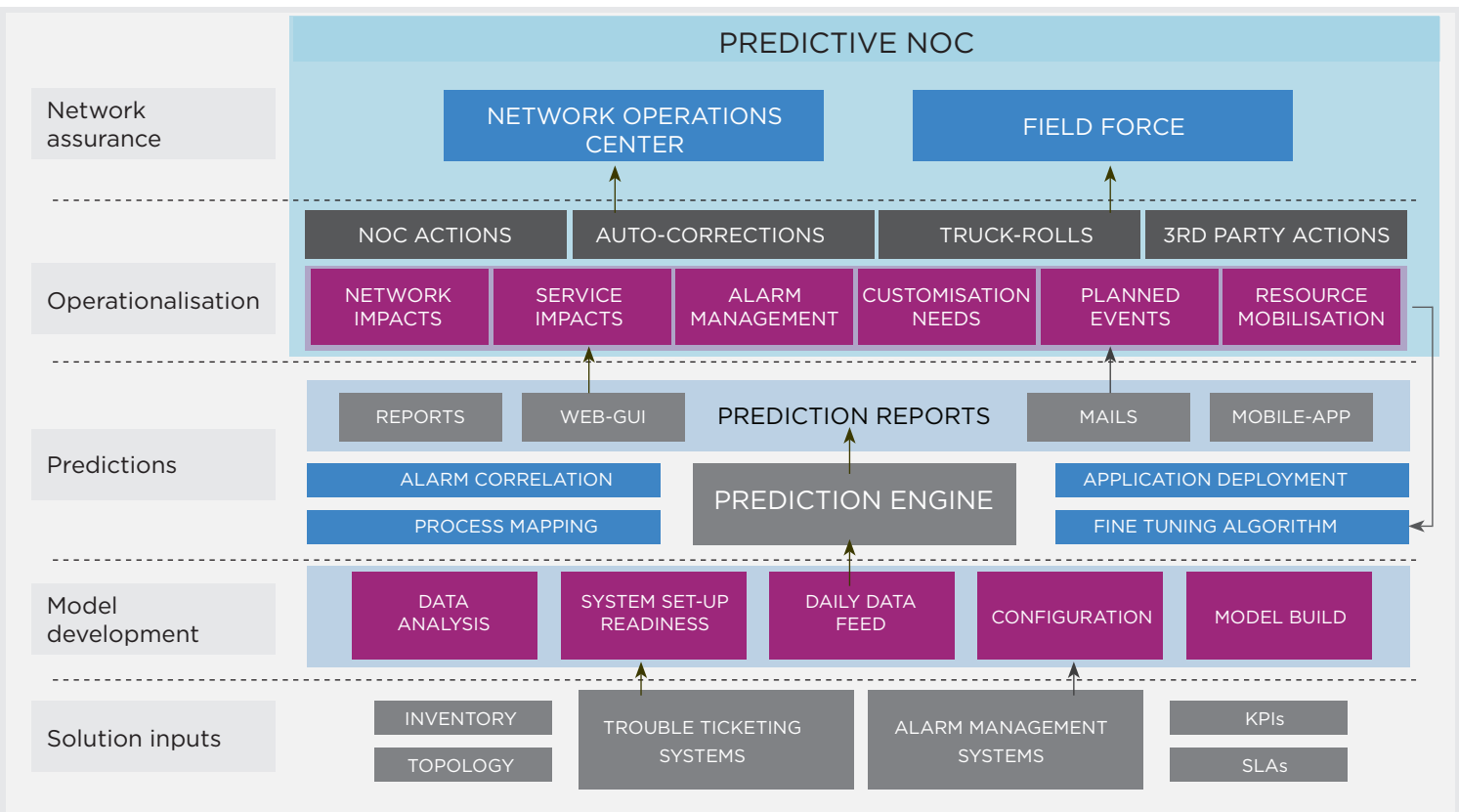
We use Artificial Intelligence to tell you where your telco network is likely to fail next... and what to do, before it happens!

**THINK.
TRANSFORM.**

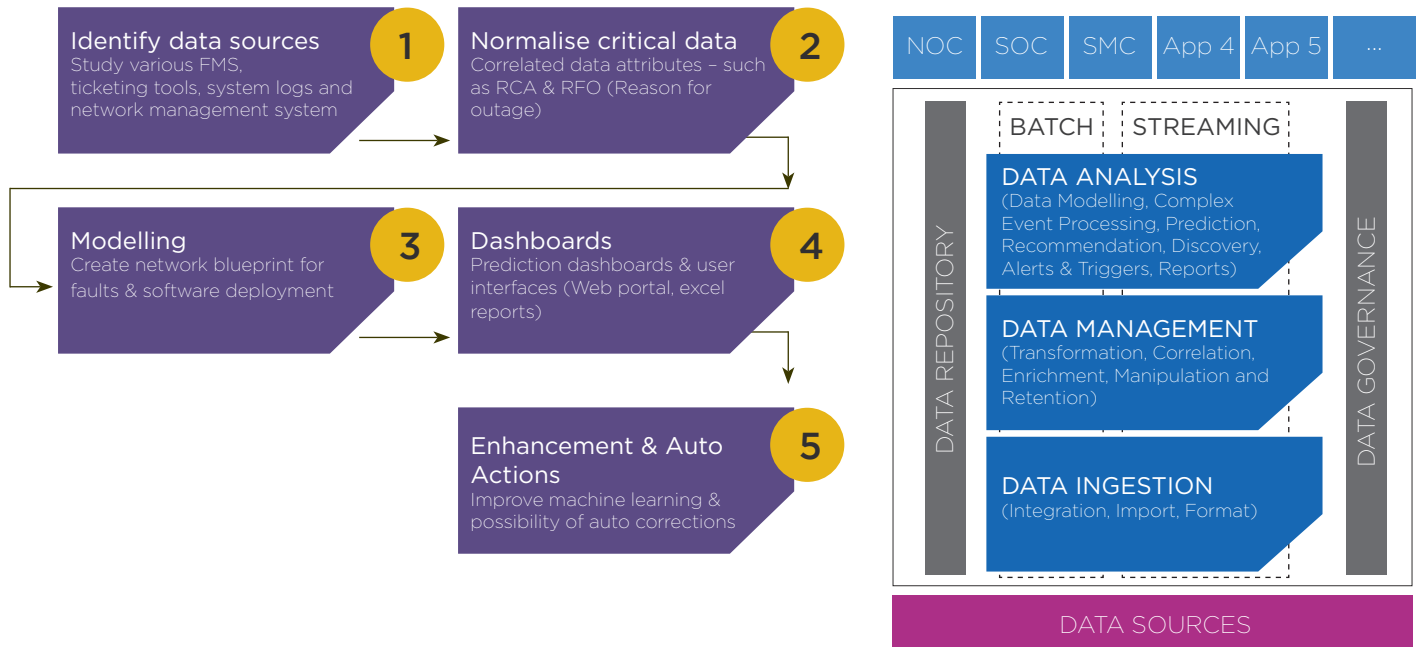
With the growing volumes and varying types of data to achieve competitive advantage, it is important for CSPs to adopt Artificial Intelligence (AI) and Machine Learning (ML) concepts. While managing large volume of alarms and tickets, CSPs find it difficult to predict where network faults will occur. Predictive Maintenance for Service Assurance solution offers operational benefits in network maintenance, providing flexible deployment options and easy-to-use software. The solution enhances customer experience and saves the operator's cost by reducing site visits for maintenance.

Predictive Analytics Solution learns patterns in historical data and uses statistical and ML techniques, to predict network outages and service impact in the future. The fault data in multi-vendor, multi-technology and multi-domain environments is acted upon using correlation, and actions are recommended on predicted outages (root-cause).

SOLUTION ARCHITECTURE



BUILDING NETWORK DNA & PREDICTION MODEL



SOLUTION SNAPSHOT

PROACTIVE MAINTENANCE THROUGH AI



- Model network DNA and behaviour via unique machine learning algorithms
- Prediction of faults for fixed & mobile networks
- Remedial recommendations
- Correlates data from various networks including 3G, 4G, Tx, IP to analyse impact of outages on QoS

MOBILE APP FOR FIELD ENGINEERS



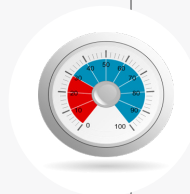
- Fault prediction
- Root-cause recommendation
- Map based fault display
- Pending fault alert from mobile
- Voice based fault closure command
- Field force productivity enhancement

FAULT PREDICTION DASHBOARD



- Prediction analytics
- GIS integration
- Predicts more than 300 fault types across transmission, IP/MPLS, RAN & passive infra
- Expanding to more and diverse networks
- Schedule automated actions on predicted faults

SMOOTH DEPLOYMENT METHODOLOGY



- Data identification
- Proof of concept within 8/10 weeks
- Commercial deployment within 12/16 weeks
- Flexible commercial models
 - Fully managed service
 - Build-run-transfer
 - Hosting solution

KEY BENEFITS

Turning reactive to proactive service assurance

- Manage incidents rather than alarms/alerts
- Preventive actions rather than reactive intervention

Higher network uptime

- Fault avoidance
- Reduced MTTR
- Increased availability

End-customer satisfaction & experience improvement

- Service uptime
- Analytical insights of network
- Decreased network faults

Optimum field operations

- Structured & planned visits increase productivity
- Lesser faults that require reactive approach
- OPEX & TCO Optimisation

CASE REFERENCES

Empowered an Indian network operator to predict faults and improve productivity using our predictive analytics solution

- Reverse estimation on ticket reduction in the first 4 weeks of operationalisation
- 10% ~ 20% increase in coverage of sites per engineer due to productivity improvement from mobile app



Implemented predictive analytics solution for radio access network (RAN) for a European telecommunications operator

- Alarm prediction with an accuracy of 67.07% within 7-day prediction window
- Alarm prediction coverage of 59.10% within radio access network
- Hosted solution within TCTS premises with data security control
- Go-live for ticket assignment to field force



Delivered predictive analytics solution for fixed line red stream – IP network to a European telecommunications operator

- Alarm prediction with an accuracy of 69.6% within 7-day prediction window
- Alarm prediction coverage of 27.1% within fixed line network domain
- Hosted solution within customer premises for 100% data protection
- Enrichment of predictive alerts with live ticket data for better handling of faults



Implemented predictive analytics solution for fixed access network for a European telecommunications operator

- Alarm prediction with an accuracy of 60.5% within 7-day prediction window
- Alarm prediction coverage of 37.8% within DSLAM network domain
- Prediction engine outputs integrated with automation engine, optical disconnect handling and power failure on REM



About Tata Communications Transformation Services (TCTS)

Tata Communications Transformation Services (TCTS), a 100% subsidiary of Tata Communications Ltd, provides leading business transformation, managed network operations, network outsourcing and consultancy services to telecommunication companies around the world. TCTS delivers operational efficiency, cost transformation and revenue acceleration solutions for all the stages of the carrier process lifecycle including but not limited to network engineering and design, implementation and operations functions.

TCTS is a part of the USD \$100+ billion Tata group. Tata group comprises of over 100 operating companies in seven business sectors. TCTS leverages the market expertise of Tata group's global telecom operation capabilities and globally established IT, process and consulting skills. It carries the rich traditions and business ethics of the Tata companies.

For more details on TCTS and how we can help your company build, operate and transform, please contact us at tcts.marketing@tatacommunications.com or visit www.tatacommunications-ts.com. To hear more from TCTS experts, join us on LinkedIn <https://www.linkedin.com/company/tata-communications-transformation-services> and follow us on Twitter https://twitter.com/Tata_TCTSL.

