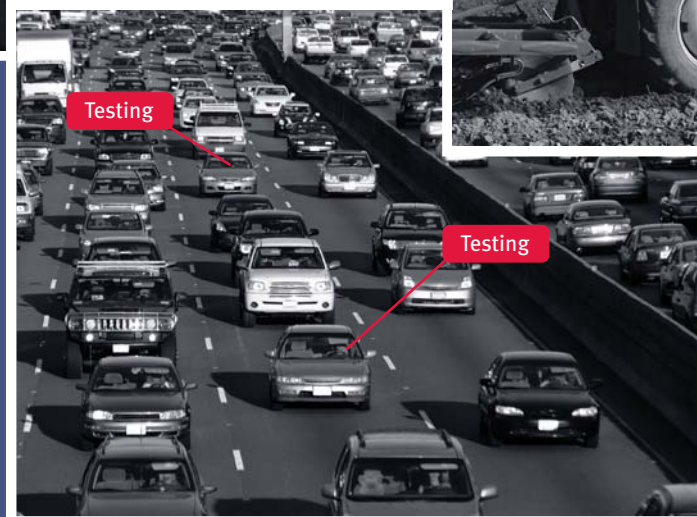
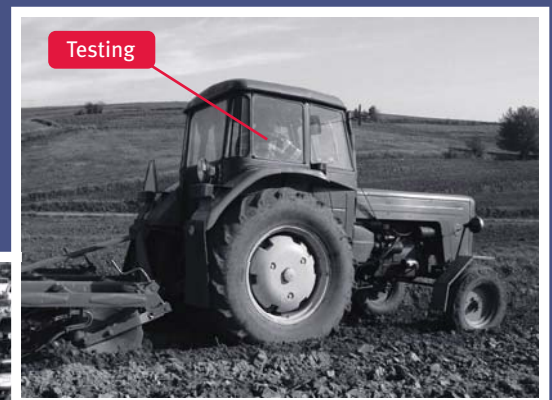


Crowd-sourcing

A Whole Network solution for 2G, 3G & 4G
Service Optimisation



Crowd-sourcing

Managing Customer Experience When & Where

With Mobile Broadband services being taken up by subscribers at a fantastic rate, having the right amount of capacity where and when it is required is essential for meeting customer expectations.

The challenge faced by MNOs is acquiring network-wide performance intelligence, in real-time, such that subscriber 'Quality of Experience' (QoE) can be managed effectively and efficiently.

Crowd-Sourcing

Crowd-sourcing, in the context of service optimisation, is a means of collecting QoE data directly from subscriber's handsets and computers. By testing thousands of cells, crowd-sourcing collects the breadth and depth of intelligence required to fully optimise a network.

QoE data is collected from an "every-ware, any-ware" software application that deploys to thousands of subscribers and tests typical web activities such as;

- File downloading
- Web Surfing
- Email
- VoIP
- Video Quality
- Voice Quality

With its ability to scale without restriction, test around the clock and upload data over the internet, crowd-sourcing has a distinct advantage over traditional drive test/walk test methods.

Coverage

Traditional testing is based on either walk/drive testing or static test probes which have limited coverage, resulting in business decisions that are made with incomplete information. As crowd-sourcing covers all cells in the network the scope of intelligence covers the whole network.

24 x 7 Data Collection

In the case of walk/drive testing, a limited snapshot of measurements is taken at any time. Crowd-sourcing data builds a complete picture based on 24x7 data collection.

Deploy Now

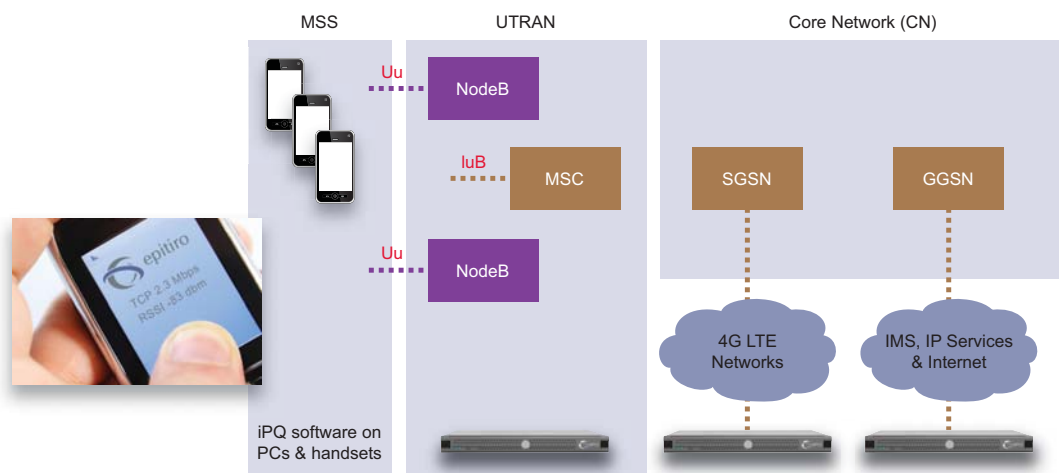
Deploying drive test vans, walkers and fixed probes takes considerable time. Crowd-sourcing software apps can be readily deployed across a country or new location via an over-the-air upgrade.

Intelligence Now

Drive/Walk Test data needs to be uploaded and post-processed resulting in a delay period that makes it unsuitable for proactive management. Crowd-sourcing can report findings immediately, empowering MNOs to swiftly respond to intelligence.

Automated Analysis

Often traditional data collection requires specialist labour, which is expensive, non-scaling and time consuming. Crowd-sourcing data is real-time and can be recalled from databases using an on-line browser.



How Can MNOs Benefit?

With real-time, comprehensive data from across every cell, crowd-sourcing intelligence empowers MNOs to;

- Instantly identify which cells are meeting quality targets – and which ones are not
- See immediately when cells or backhaul are at capacity
- Remove guesswork and speculative spend on maintenance, infrastructure improvements and wholesale bandwidth consumption
- Set, manage and meet Quality of Experience targets
- Compare performance against competitors
- Proactively make informed business decisions with intelligence presented simply and in real-time

Many different parts of an MNO business can benefit from the network-wide intelligence crowd-sourcing makes available.

Operations Managers can instantly address capacity constraints in the network and efficiently assign maintenance resources to customer-affecting faults. They can also manage upstream suppliers (email, filtering, DNS) to ensure they are meeting performance requirements.

Network Capacity Planners can use trend intelligence to accurately manage capacity requirements from wholesale supply to backhaul to any cell without unnecessary spending.

Customer Quality Managers can proactively manage quality of experience on any part of the network.

Business Managers can use actual performance data in SLA reports for enterprise and MVNO clients.

Marketers can monitor competitors in real-time and use empirical data as the basis for advertising.

See for Yourself

To see first-hand how crowd-sourcing solutions can be readily deployed to help you manage Quality of Experience, contact EpiTiro and arrange a demo.

Broadband Metrics	
TCP Throughput speed	
HTTP Speed	
HTTP Content Compression Ratio	
Latency	
Packet Loss	
Jitter	
Video Streaming Quality	
VoIP Quality	
GPS Information	
Latitude, Longitude, Motion Speed, Bearing	
Radio Frequency (RF) Information	
Location Area Code (LAC)	
Cell ID	
Received Signal Strength	
Access Protocol GPRS, EDGE, UMTS, HSDPA	



HTTP Detail Table						
Test	Test	Agent ID	HTTP Kbps	HTTP ms	RSSI	Bearer
1	Sep 18, 2010 2:05:07 PM	http://news.bbc.co.uk	2222	0.7	117150	-101 UMTS
2	Sep 18, 2010 2:29:13 PM	http://www.youtube.com	2222	3.37	46874	-101 GPRS
3	Sep 18, 2010 2:22:27 PM	http://www.youtube.com	2222	3.43	46002	-101 GPRS
4	Sep 18, 2010 3:29:01 PM	http://news.bbc.co.uk	2222	1.79	40756	-101 UMTS
5	Sep 18, 2010 3:44:43 PM	http://www.youtube.com	2222	5.6	43642	-101 GPRS
6	Sep 18, 2010 3:49:29 PM	http://www.youtube.com	2222	4.06	38895	-101 GPRS

About Epiro

Epiro is the global leader in broadband performance analysis providing customer experience insight to ISPs, cellular and fixed line operators, media providers, multi-national corporations and government regulators.

Clients such as Vodafone, Orange, Telefonica O2, Mobily, Virgin Media, Telecom New Zealand, BT, Ofcom, IDA Singapore, Tiscali, CTM China, KPN and many others benefit from Epiro's coverage of fixed and wireless broadband performance.

Founded in 2000, Epiro is based in Cardiff, Wales, UK.



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