Future RAN Explorer: Spearheading strategic decisions in mobile network planning

Quick take

Jonathan Segel, Joseph Kang

In the dynamic landscape of mobile network planning, decision-makers are often faced with the challenge of not only making informed choices in the present but also forecasting an array of future scenarios. These decisions involve complex variables, including various real-network situations and intricacies involving business, technology, and financial domains.

Bell Labs Consulting presents the Future RAN Explorer (FRE), a revolutionary tool designed to help communications service providers formulate sophisticated network strategies swiftly and efficiently. FRE's multifaceted capabilities and attributes set it apart as a strategic decision-making tool.

Making informed decisions with Future RAN Explorer

Able to instantly generate a comprehensive and cost-effective network build plan based on various customer scenarios, FRE can handle hundreds of thousands of decisions in mere seconds. This allows strategic network planners to consider many different possible futures and quickly understand the implications of those different futures on the proposed path forward. It has been applied by operators to a wide range of decisions including, but not limited to:

- Anticipating site build needs up to 10 years out in order to make a current decision on spinning out tower assets to a TowerCo.
- Adjusting capacity build plans in line with higher-than-expected subscriber usage
- Determining the efficacy of deploying C band with a premium mMIMO radio for enhanced reach and spectral efficiency
- Assessing the financial implications of allocating a spectral band exclusively for private networks
- Strategizing the deployment of CBRS radios as either macro or small cells
- Simplifying supply logistics by identifying and eliminating less efficient radio options
- Analyzing the financial repercussions of advanced pre-provisioning
- Considering potential partnerships for peak load management to avoid network coverage and capacity expansion
- Assessing budget constraints on regional capital expenditure within a specified timeframe
- Projecting the costs associated with achieving superior coverage/performance quality
- Estimating limits to potential market share growth within a stipulated network budget.

Unique features of Future RAN Explorer

FRE distinguishes itself with an array of unique features, including:

Granular decision-making

Unlike many strategic planning tools that rely on a simplified aggregate view, FRE conducts decision-making at a specific and detailed level, mitigating errors associated with averaged forecasts and averaged data.

Innovative data sourcing

FRE leverages a multitude of data sources, such as crowdsource agents and census data, to derive mobile spatial traffic density distribution with machine learning techniques to better calibrate load density models.

Accuracy and validation

Although not a square-meter-accurate RF planning tool, FRE utilizes inputs from similar tools, amalgamated with internal algorithms, to accurately depict the geographic reach of each carrier at individual cell site levels, facilitating auditable and validated outcomes.

Versatile planning capability

FRE is proficient in devising plans for operators lacking actual network data, as well as orchestrating coverage for new entrants in the market.

Hybrid MVNO planning

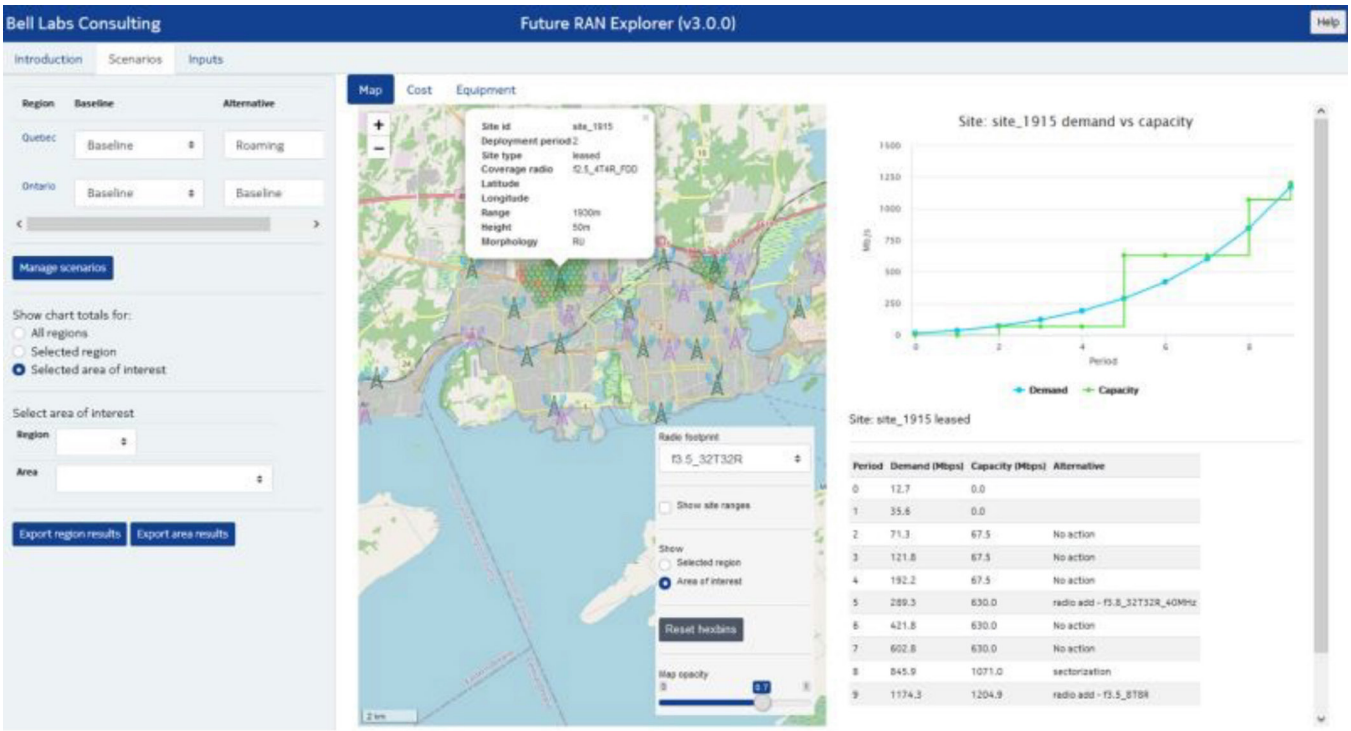
The tool is adept at planning for 'hybrid MVNOs', orchestrating seamless integration between their networks and roaming partners for enhanced coverage or overflow capacity management.

Customizable costing module

FRE houses a comprehensive costing module, encapsulating all network capital and operating costs, customizable to each operator's financial framework.

Technological versatility

With templates for dozens of technology augmentations, FRE simplifies the running of customized scenarios by enabling or disabling specific technological variants per run.



The Bell Labs Consulting approach

Bell Labs Consulting is proud to offer FRE as a versatile solution, either as a standalone tool or cloud-based application, accompanied by ongoing maintenance, support, and enhancement services. FRE can help operators to explore strategic avenues and make informed decisions with confidence.

For further information please contact us at info.query@bell-labs-consulting.com

Learn more about Bell Labs Consulting at https://www.bell-labs.com/consulting/

About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

Nokia OYJ
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Document code: 710301 (October) CID213559