TKonsult

applied
advanced
analytics

a³

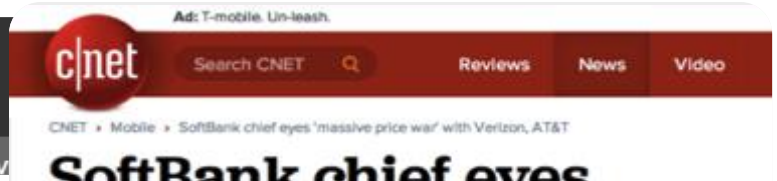
Real data,
powerful
decisions.

Breaking Down Complexity in Pricing: An introduction to a³'s Pricing Knowledge and Simulation Platform

In the Telco world, casualties from price wars abound…

Investors flee telecom on price-war fears after AT&T price cut

BY SINEAD CAREW AND SRUTHI RAMAKRISHNAN
Mon Feb 3, 2014 5:58pm EST



SoftBank chief eyes 'massive price war' with Verizon, AT&T

Tight 3G race spurs price war

Firms slash rates for smartphone data plans

Published: 5 Oct 2012 at 00.00 | Viewed: 1,640 | Comments: 0

East Africa: Uganda Faces Telecom Price War As Kenya, Tanzania, Rwanda Cut Call Rates

BY ERIASA S. MUKIIBI, 8 SEPTEMBER 2010

Airtel's 4G at 3G price: Beginning of yet another telecom price war?

By Firstbiz Staff

February 26, 2014, 5:56 a.m. ET

Bouygues Raises the Pressure in French Telecom Price War

Traditional Data-warehouse solutions struggle to meet the demands of simulating pricing scenarios on complete Call Data Records

Too much...

Traditional Warehouse solutions struggle to keep up with volume and sources of data.

Too expensive...

Storing and processing costs per terabyte is high, in the thousands of dollars.

Too slow...

With the ever increasing velocity and variability of customer behaviour, marketing departments often left with the choice of making partially informed decisions, or taking leaps of faith.

Too restricted...

With a high cost per TB, there is a reward for performing analysis on samples rather than entire base. Client applications, are restricted to slice and dice. New analysis often requires new extraction and transformation.

Too many clients...

Serving both line and non-line, demands on DWH are often victim of both human and computational resource bottle-necks.

Too complex...

Proper sampling, data extraction and creation of “new reports” requires skilled Data Scientists, who are both rare and expensive.

a³s Pricing Platform is at the forefront of the Hadoop revolution bringing the power of Big Data technologies to Pricing analytics:

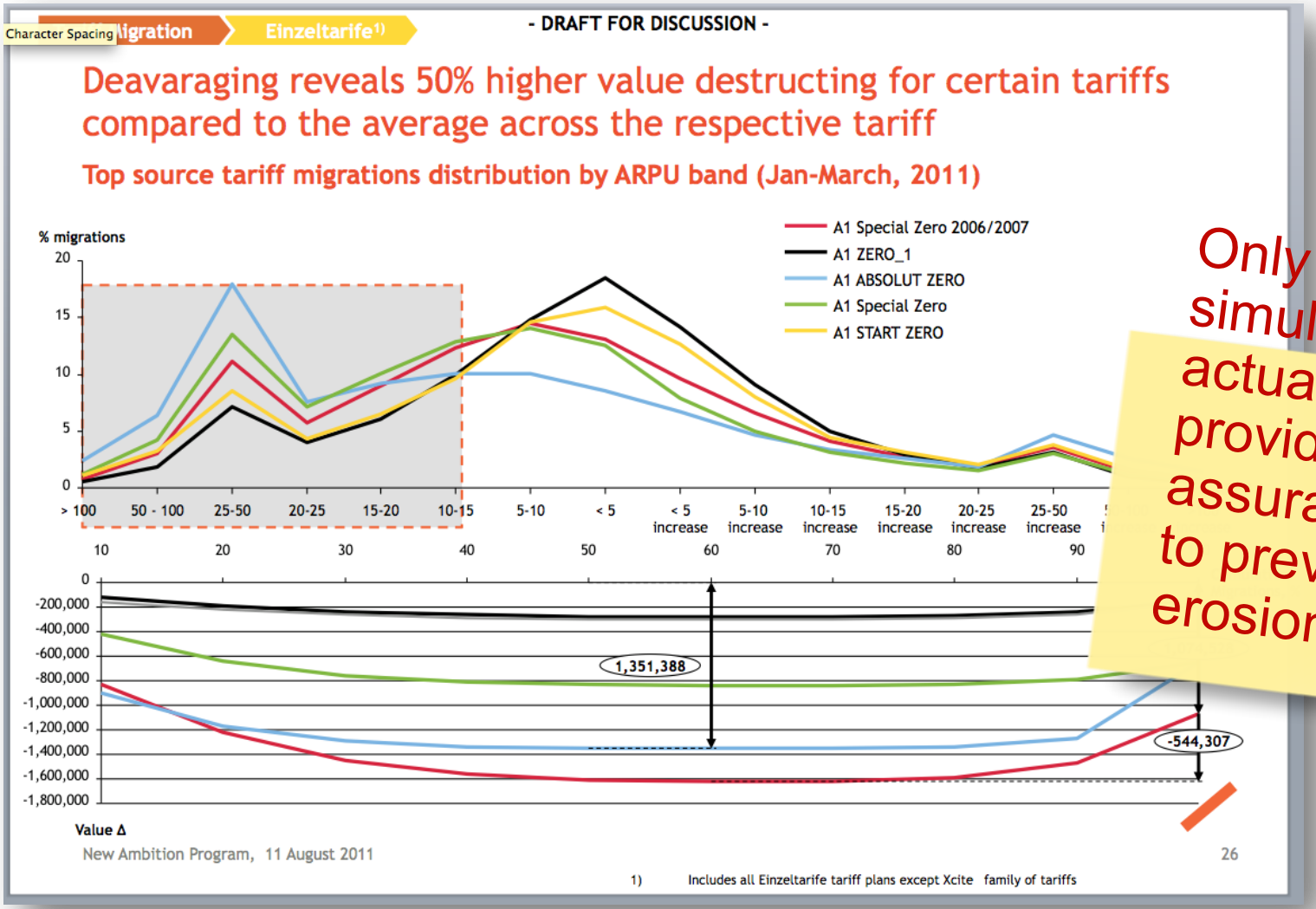
- ☑ **Designed for Business Users, not data analysts**
- ☑ **Interactive Tools – with an industry specific interface**
- ☑ **Focuses on a High Volume, Heavy Processing problem**

The challenge

- Pricing expertise and skills are hard to find and retain
- Dichotomy between product managers and pricing m
- Operators with a segment driven Organizational stru
  developed for one segment result in massive cannibalization of another
- Product driven Organizations can often neglect customer driven aspects and rules established with previous plans
- Within operations in the development of new tariffs and offerings, a full 360 view is not often taken into consideration – hasty decisions taken under the guise of NBA type campaigns can often result in unnecessary erosion
- Sharing experiences and expertise across the group is difficult – There is no central repository of pricing related knowledge and experience and we are all forced to reinvent the wheel
- Dearth of tools catering to both the strategic as well as the number crunching aspects of pricing
- Traditional Data-mining tools allow analysis based on averages at best, and are heavy on assumptions. Only specialized tools allow actual simulation based on CDR reprocessing

often put in difficult positions and pressured into manipulating assumptions to arrive at a "favourable" result

The skewedness and concentration of the traffic and revenue distributions make relying on average estimates or samples a dangerous proposition



Only direct simulation using actual CDRs provide the level of assurance required to prevent value erosion

Capturing, retaining and propagating pricing knowledge is imperative

Procedural Knowledge	Theoretical and technical knowledge, the **how-to of pricing.** Combination of **general and country specific knowledge** – not often documented. Currently resides mostly with individual experts
Empirical Knowledge	**Experience** relating to pricing plans and tariffs that have been **tested** in specific markets.
Business Intelligence	**Results relating to the simulation** of new price plans and tariffs in different markets and operations – both launched and aborted. Currently can not be carried out using CDRs but only at a 30K foot aggregate level or with limited samples.
Collective Intelligence	"**Universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills"** (Pierre Levy). Currently knowledge is very localised, sharing across the group is difficult, inefficient and costly.

a³ 's pricing platform looks to address this challenge by creating an eco-system in which pricing knowledge, experience and business intelligence can be shared globally

Procedural Knowledge

The cloud based user interface breaks pricing into building blocks ensuring that all tariff modifiers are taken into consideration and guiding through the creation of a tariff

Empirical Knowledge

"Published" tariffs are tagged at different stages of their life-cycle and experience can be shared across the group in a tariff "library"

Business Intelligence

The cloud based interface allows users to access tariff plans and knowledge from the cloud, and launch directly against Opco data.

Collective Intelligence

The a³ platform is central group wide repository of pricing knowledge and experience – the discussion and chat features in the next iteration will further enhance collaborative features

Agenda

I. The platform

I. The tool

II. The Technology

With 3+ levels of interaction the platform defines the parameters of usage for different levels of users

"Cloud" Knowledge: Pricing rules and published

Local Experimentation: Tariff development and testing

Academy (group):
Covers all operations group wide with a "library" of "Published" tariffs from all operations

Viewing: All

Edit: Group

Publish: Playground Monitors

Playground (Operation):
Playground rules (time and traffic rules and modifiers), that is what are the boundaries for the OpCo plans

Viewing: Group and specific OpCo

Edit: Playground monitors

Publish: Playground Monitors, sandbox and lab users

Sandbox (user):
Experiment with definitions of new tariffs (collection and prioritization of rules billing) in a private space within the playground

Viewing: Group and specific OpCo

Edit: individual

Simulation: all users group and OpCo

Laboratory (User): Group or OpCo users with special permission to experiment with not only new tariffs but new ru… private…

Vi…

E… group or ope… special authorization

Simulation: group and OpCo with special authorization

…ware the p… encourages sharing; it a… promotes innovation by providing priv… experimentat… spaces

a^3's pricing tool digitizes the tariff definition workflow, effectively guiding the tariff creation process

Define time and traffic rules → **Enter Tariff elements** → **Test tariff** → **Share to OpCo level** → **Share across group**

Interface		 **OR** 		
User	**Playground Monitor:** OpCo level lead and "champions" of the platform	**Sandbox or Lab users:** individual users with varying degrees of freedom of experimentation. A Lab user can also redefine the OpCo level time and traffic rules for the purposes of simulation. E.g. modify timings for off-peak. Individual users can experiment in their private spaces and publish to the OpCo level when satisfied. Tariffs can be published at different stages of the lifecycle	**Playground Monitor:** OpCo level leads and "champions" can select which tariffs to share across the group	**All users across the group** can "view" and copy published tariffs from individual OpCos
Location				

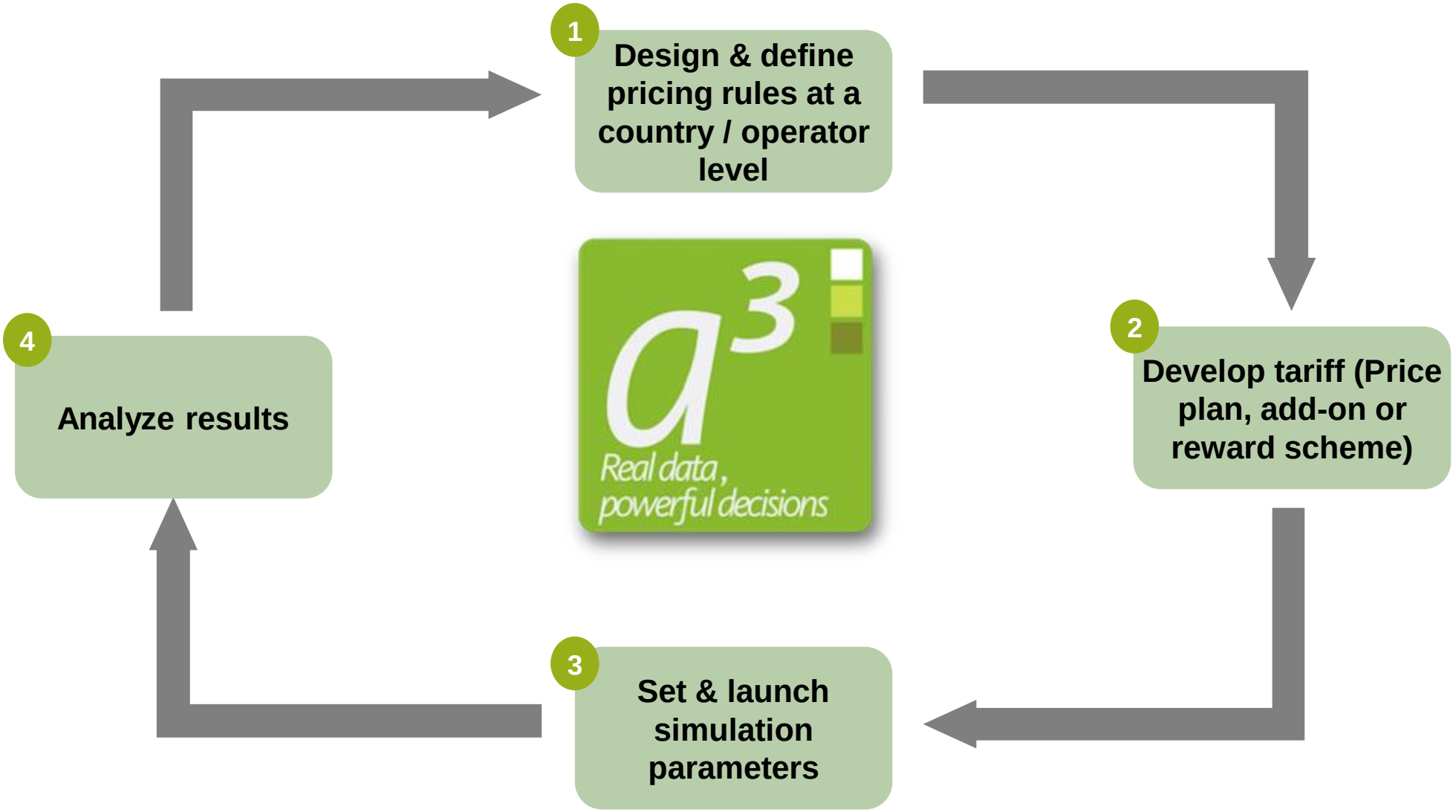
Agenda

I. The platform

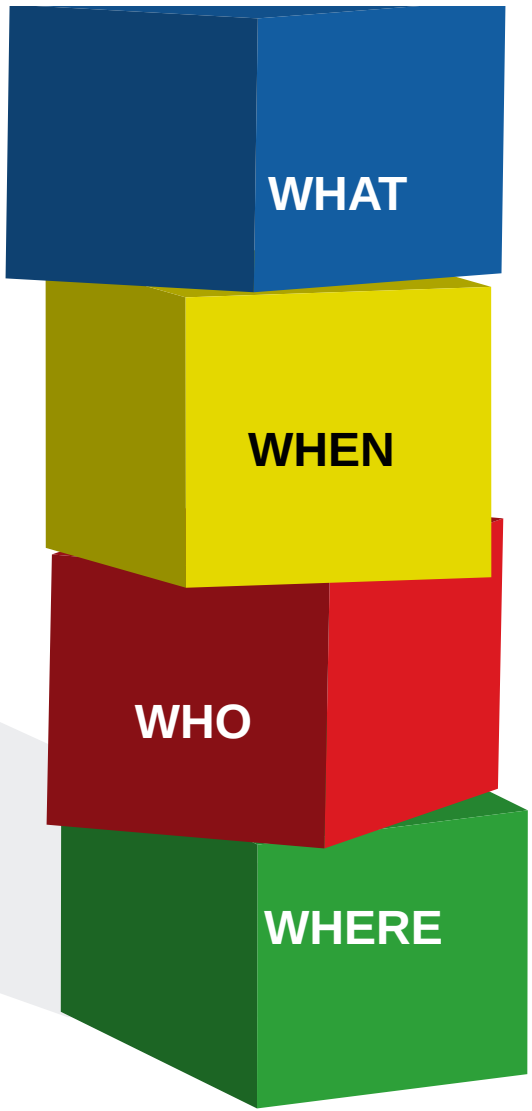
I. The tool

II. The Technology

Our Pricing Platform is a stand-alone application for the design, development and testing of new pricing schemes



The interface breaks down pricing and tariff structures into basic building blocks



Traffic type (Voice, SMS, MMS, video, data)

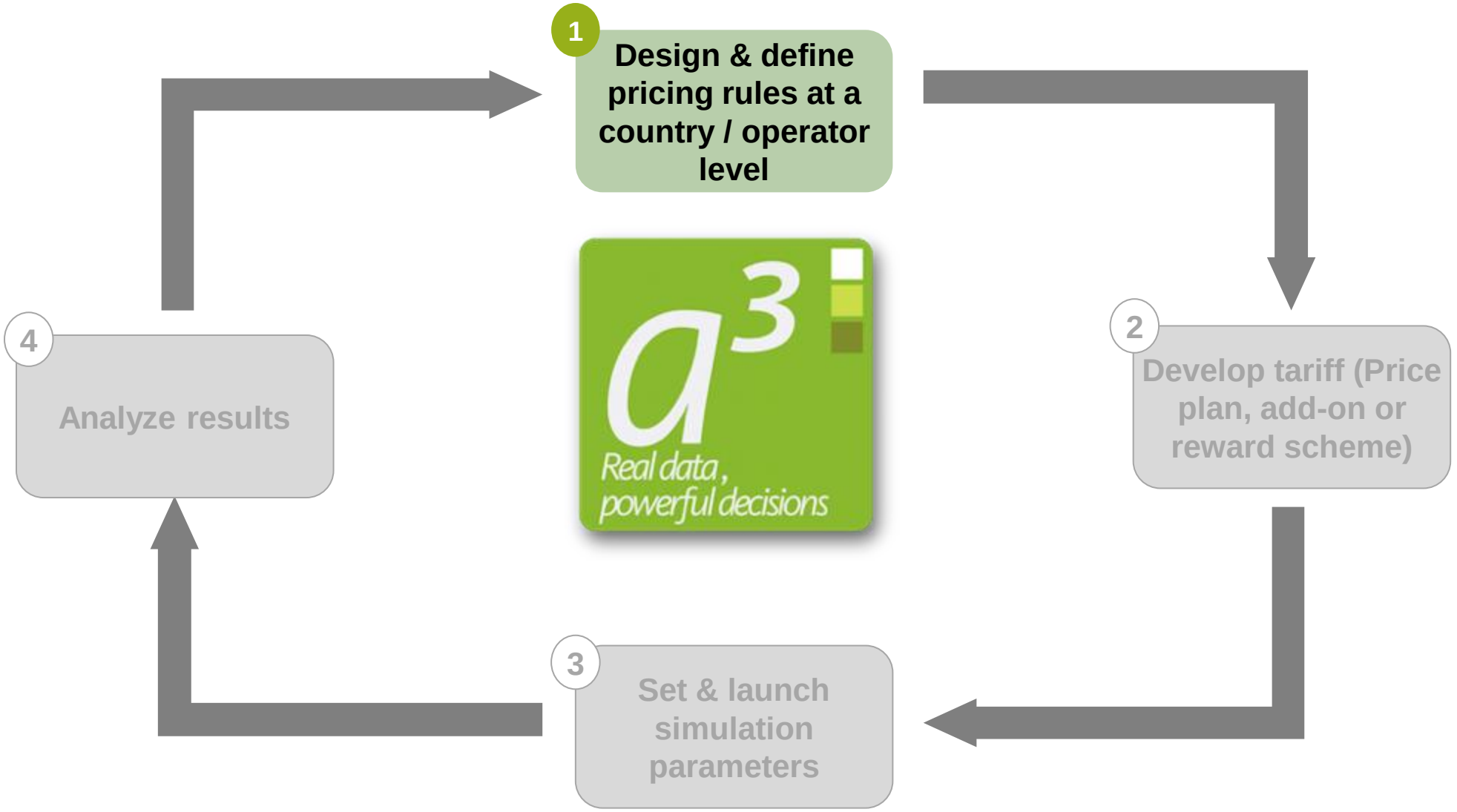
Time rules (peak /off-peak , weekend, nights, happy-hours etc)

Destination rules for B party (onnet/offnet but also specific e.g. Friends and family, MSISDN based rules or broken by service, URL, QoS for data)

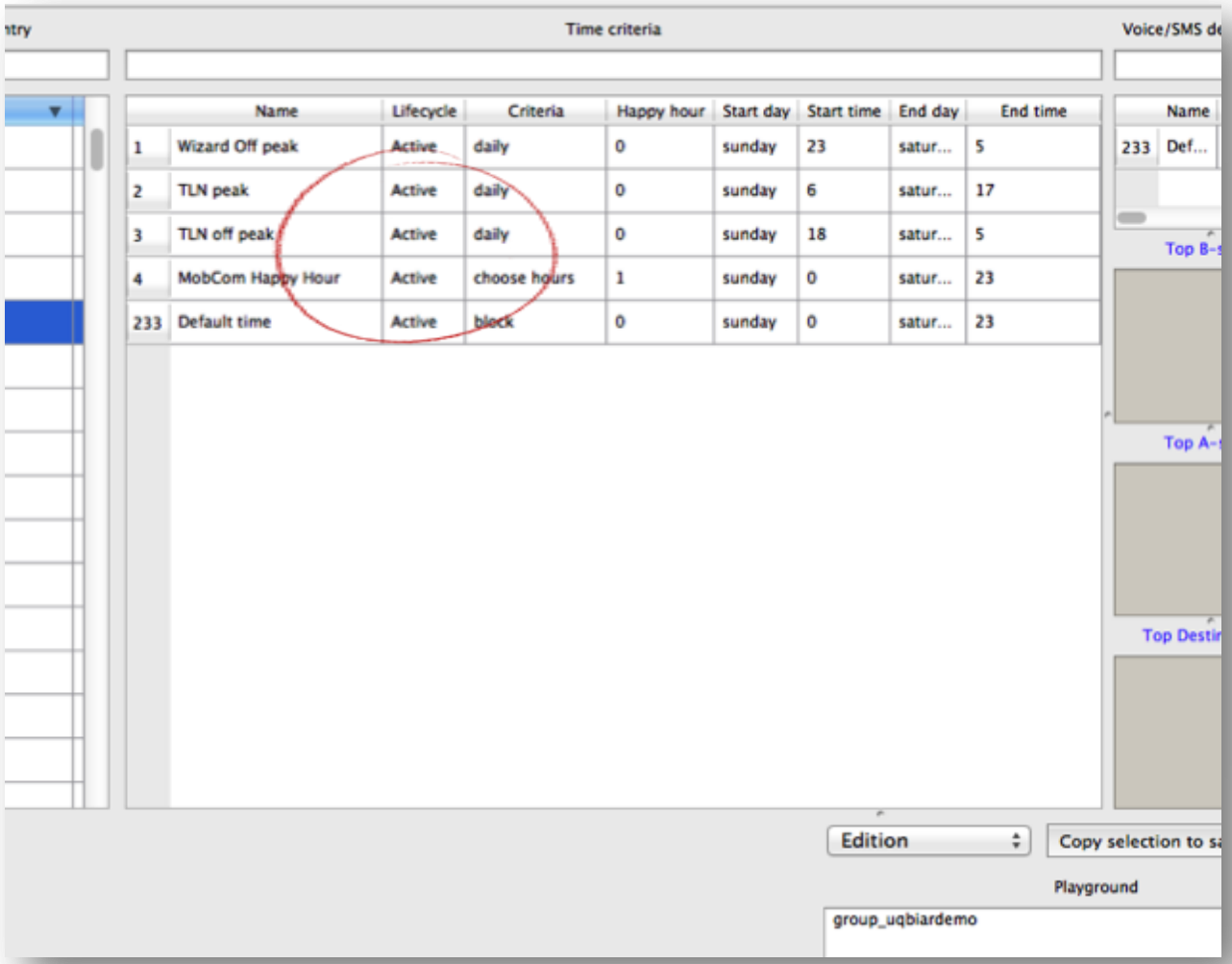
A and B party (when applicable e.g no b party in data) **location** (cell site (e.g. “home”), area, city etc..

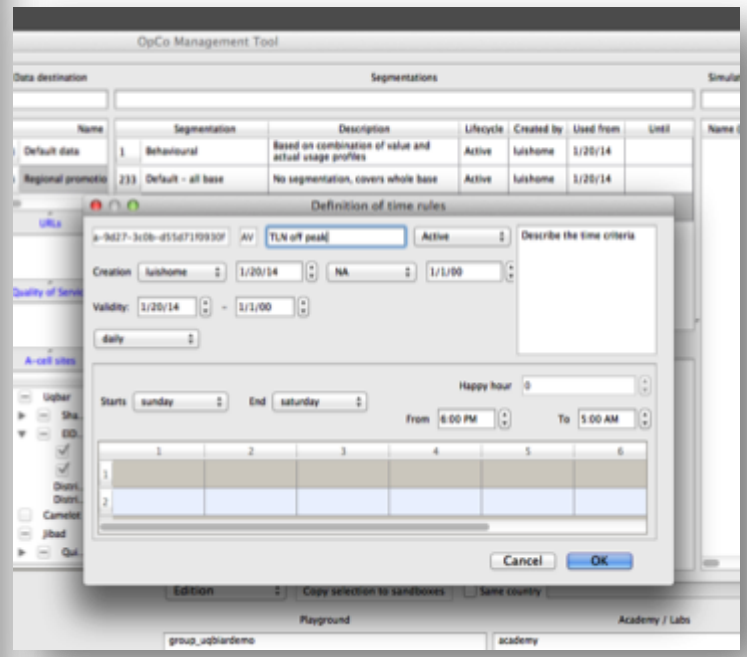
The interface captures best practices and functions as step-by-step guide. The ABC of pricing!

Designing and defining pricing rules

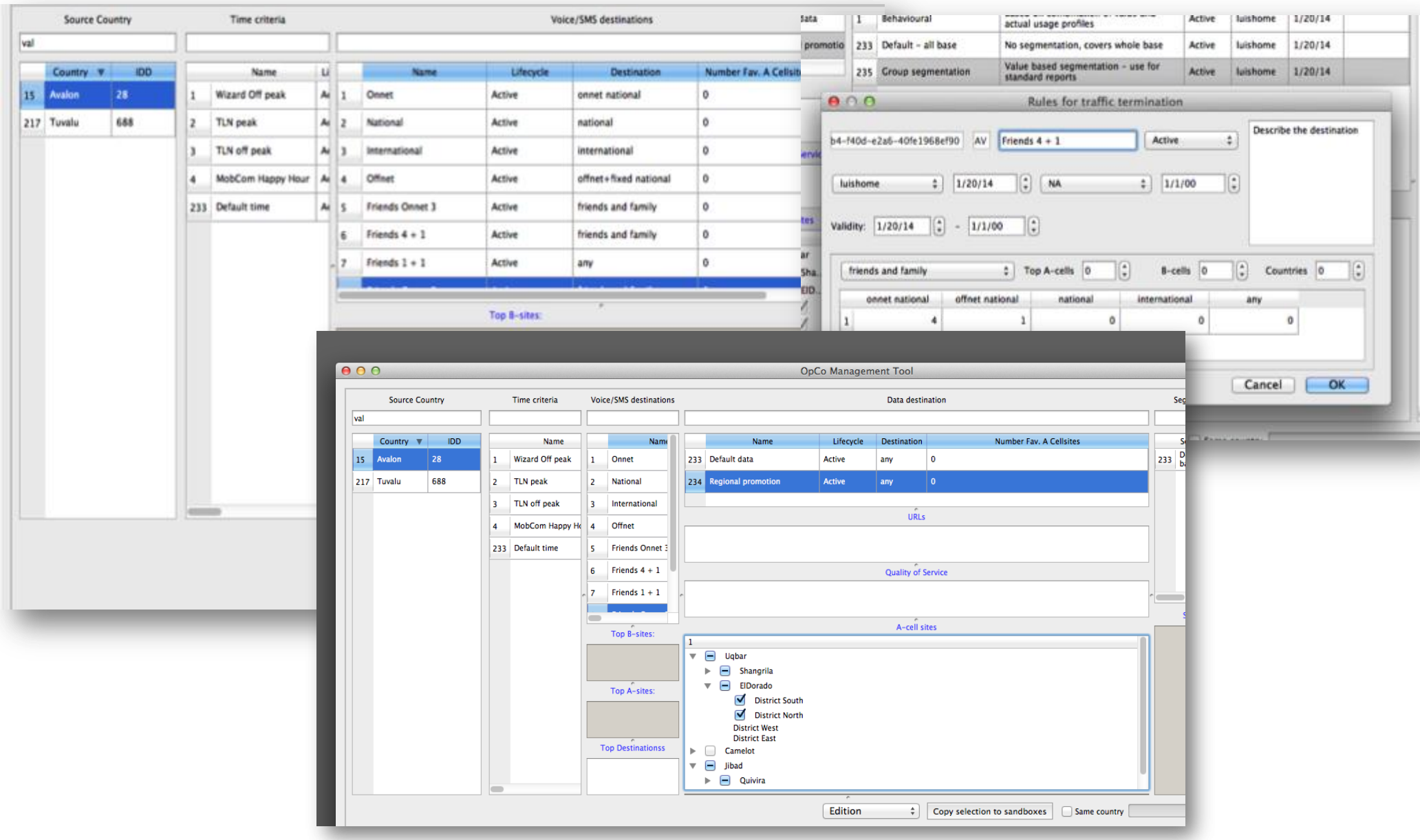


Designing and defining pricing rules: Time criteria

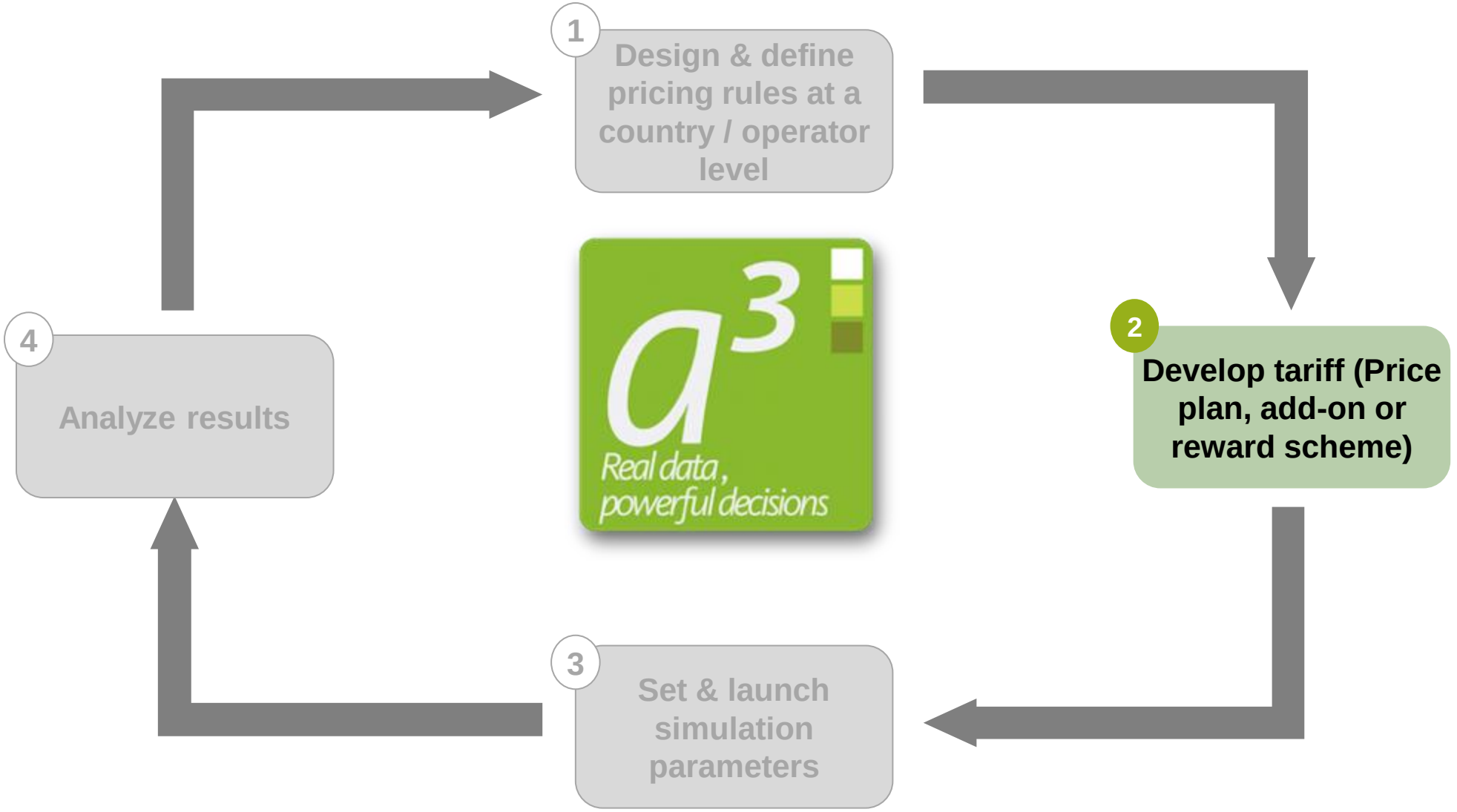




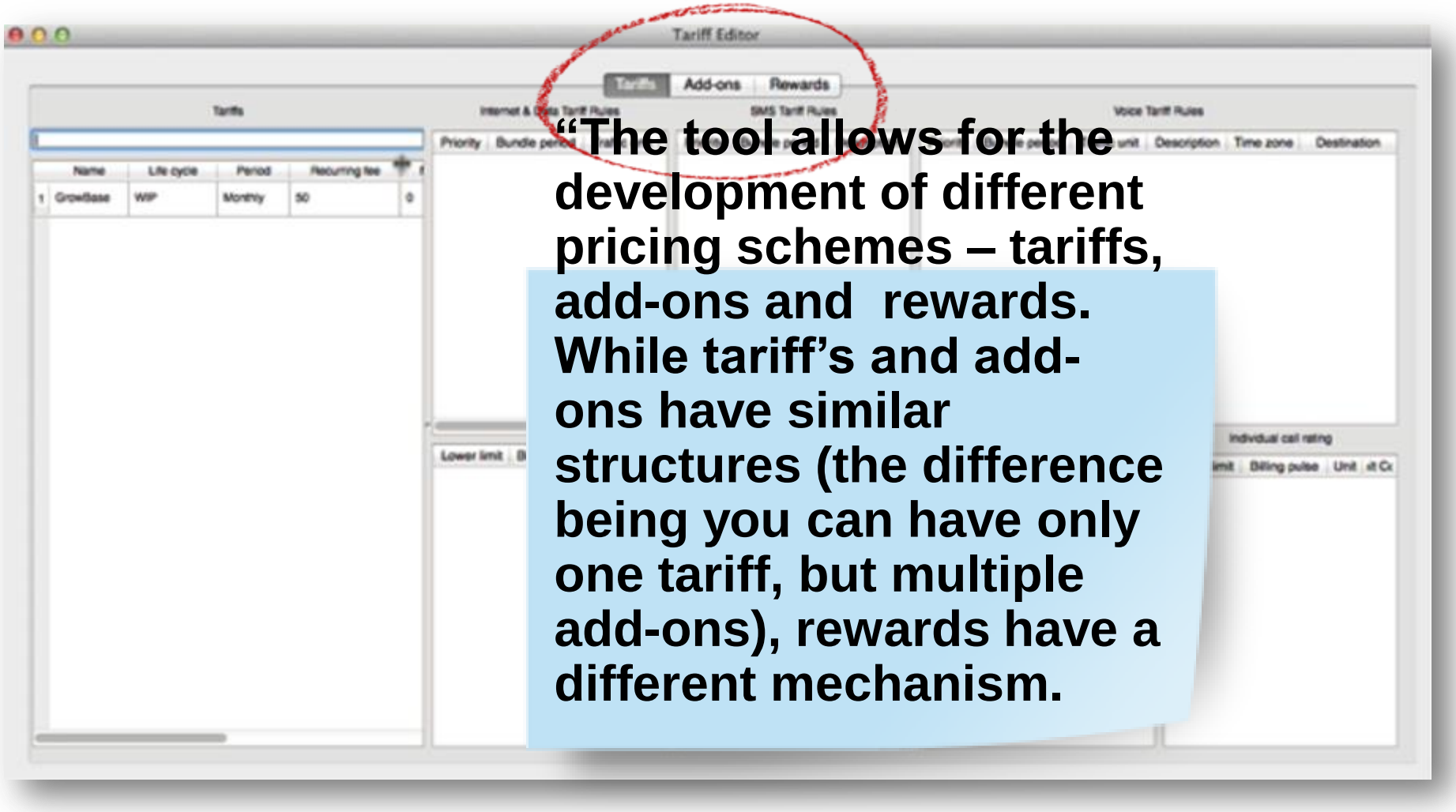
Designing and defining pricing rules: Origin & destination criteria



Developing tariffs, add-ons and rewards

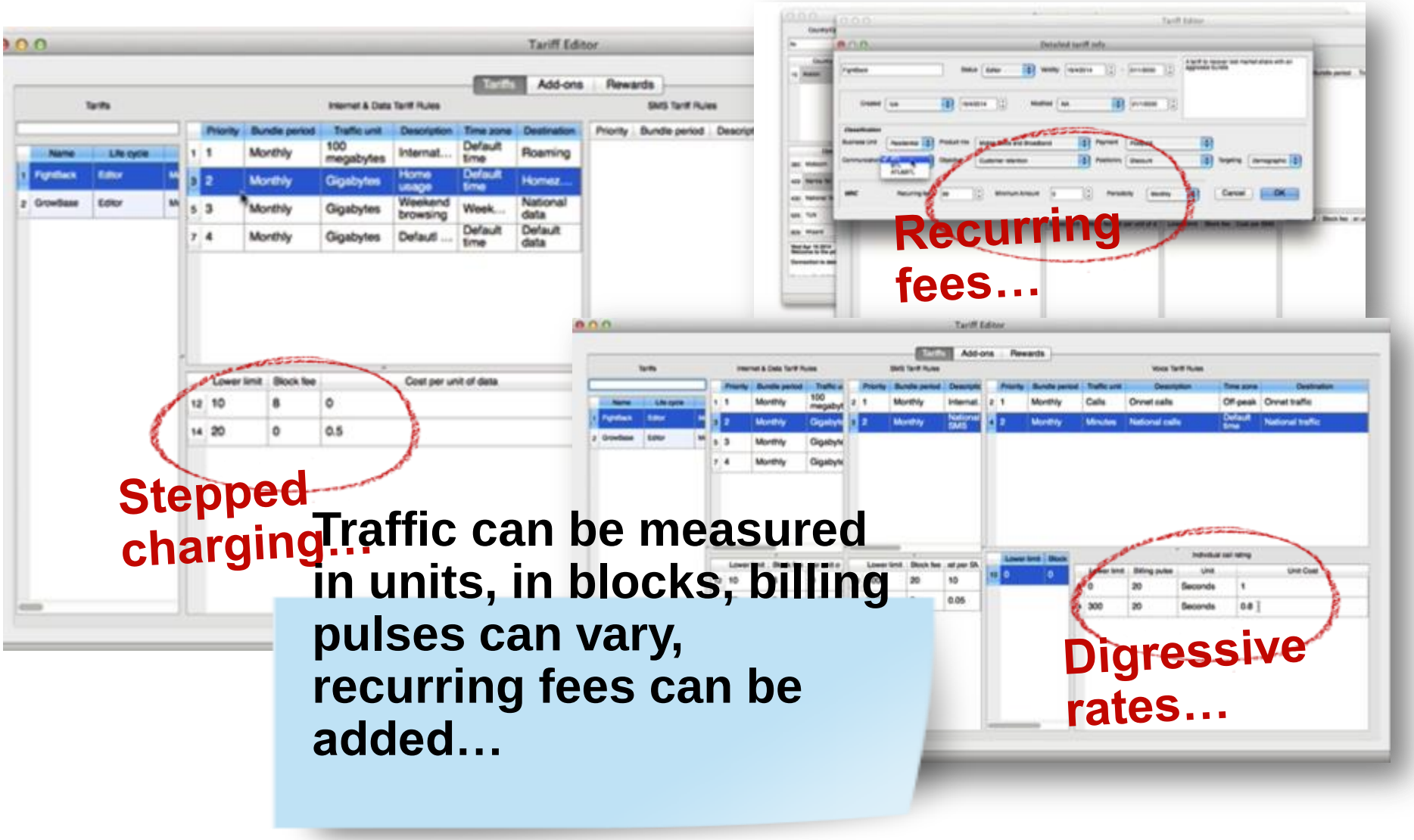


Developing tariffs, add-ons and rewards
Adding a tariff, add-on, or reward

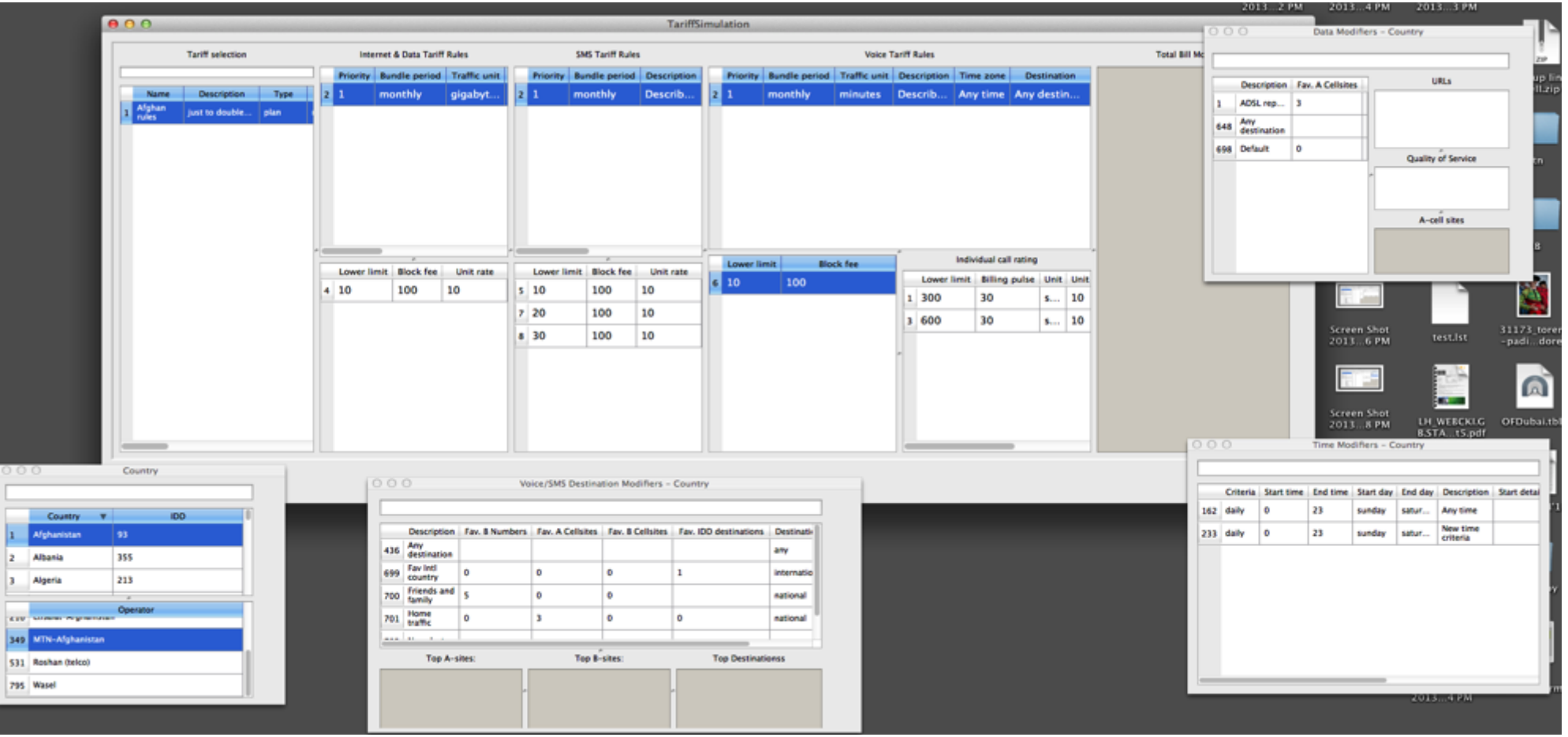


“The tool allows for the development of different pricing schemes – tariffs, add-ons and rewards. While tariff’s and add-ons have similar structures (the difference being you can have only one tariff, but multiple add-ons), rewards have a different mechanism.

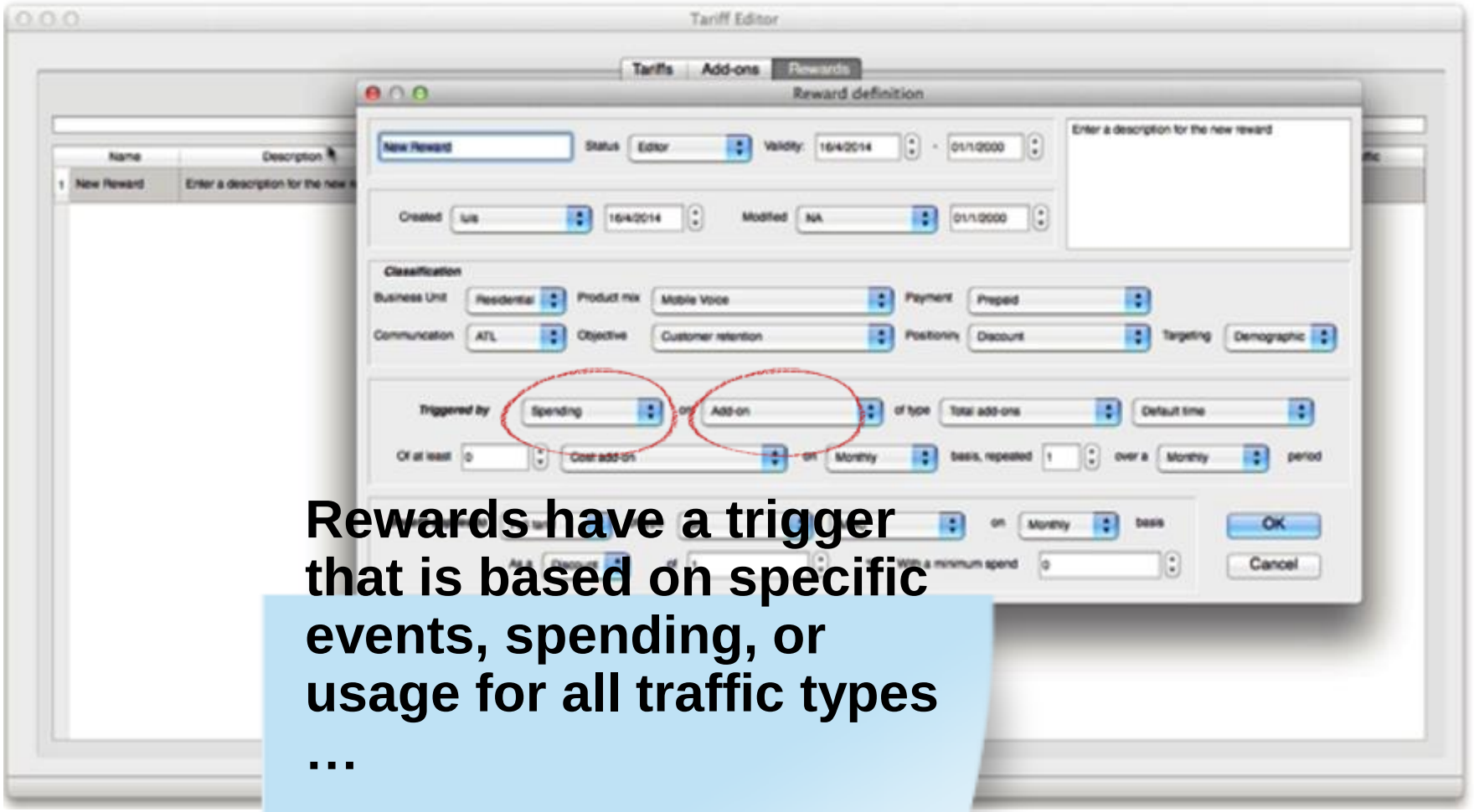
Developing tariffs, add-ons and rewards
Tariffs with complex structures can be designed



Developing tariffs, add-ons and rewards
Add-ons have similar structure to tariffs

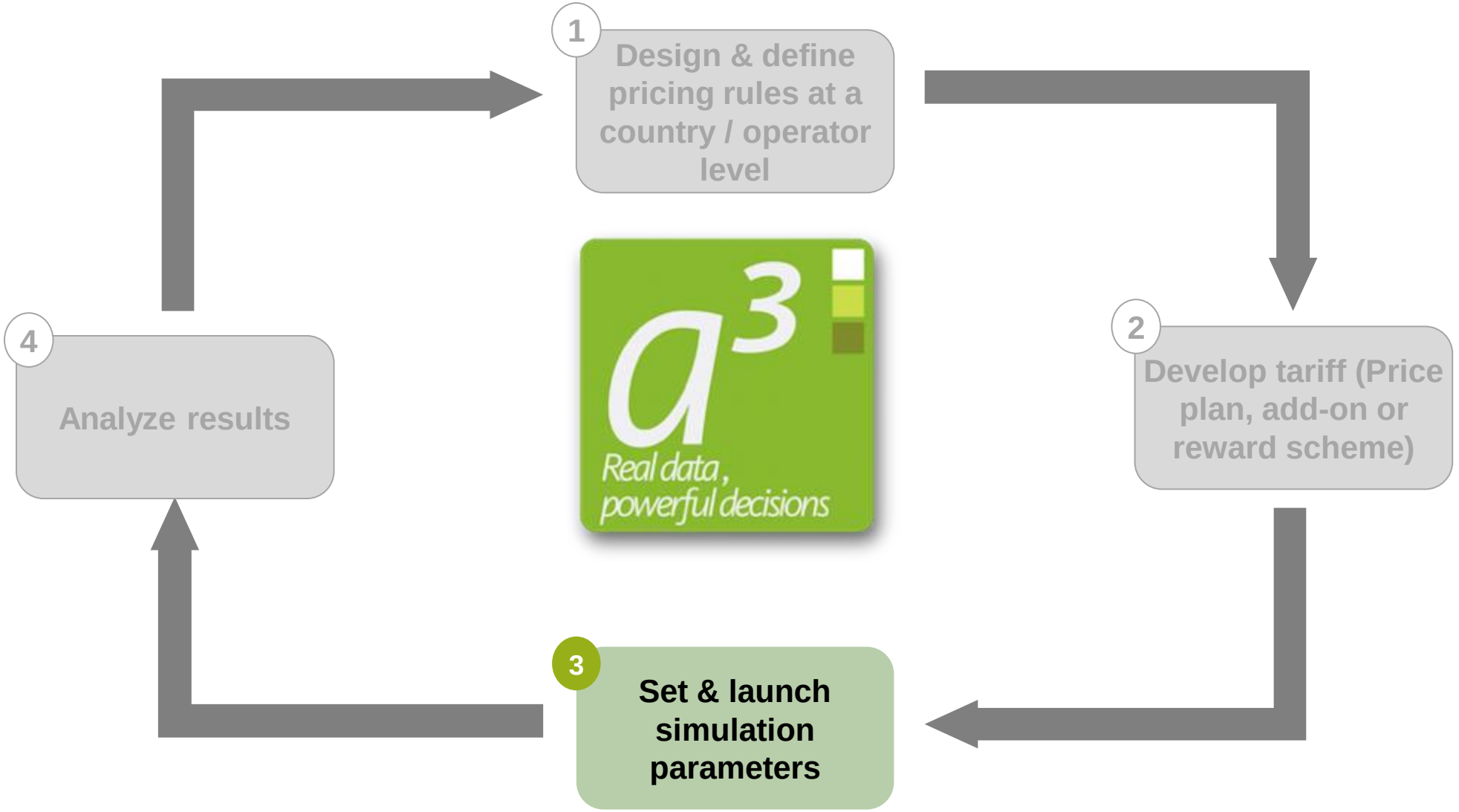


Developing tariffs, add-ons and rewards
Rewards are based on triggers



Rewards have a trigger that is based on specific events, spending, or usage for all traffic types …

Setting and launching simulation parameters

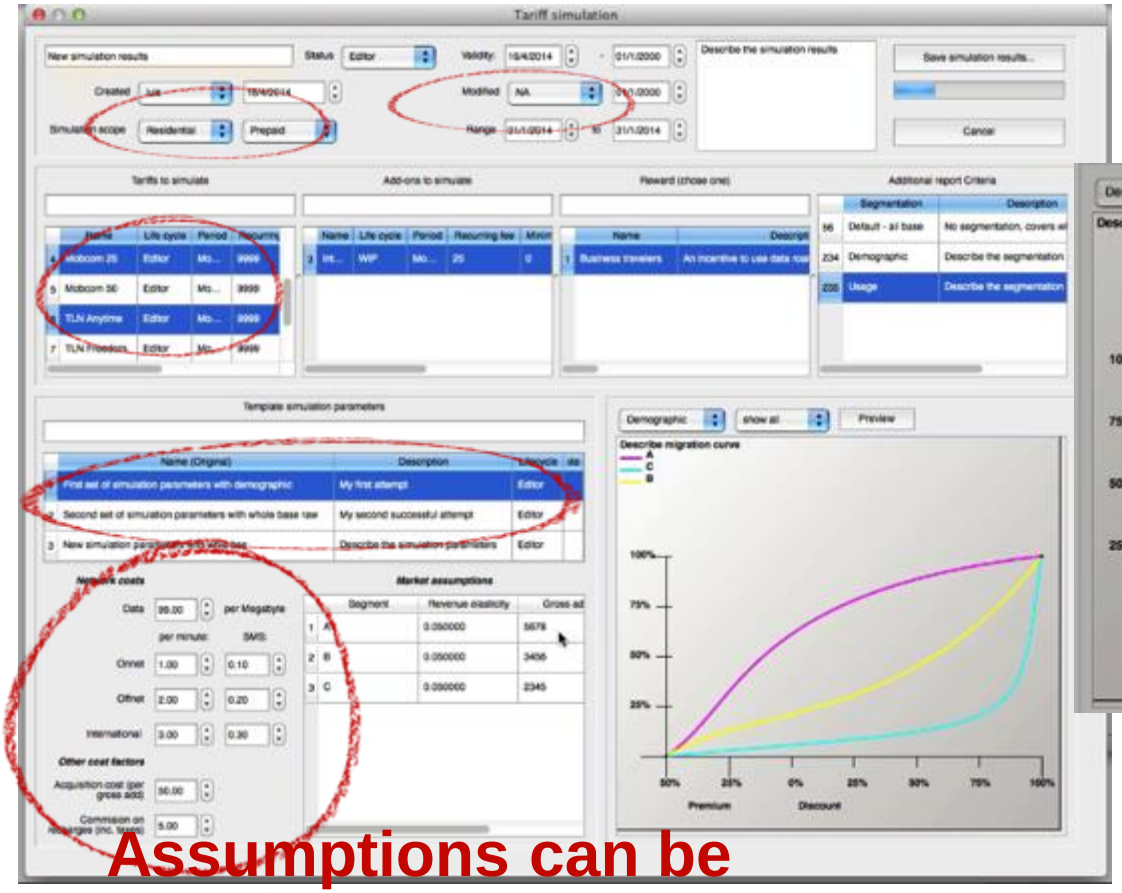


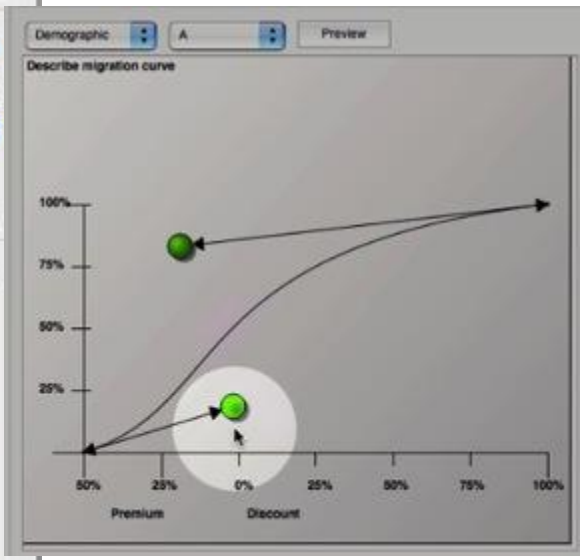
Setting and launching simulation parameters

Scope and date range can be varied

Multiple tariffs can be simulated at the same time

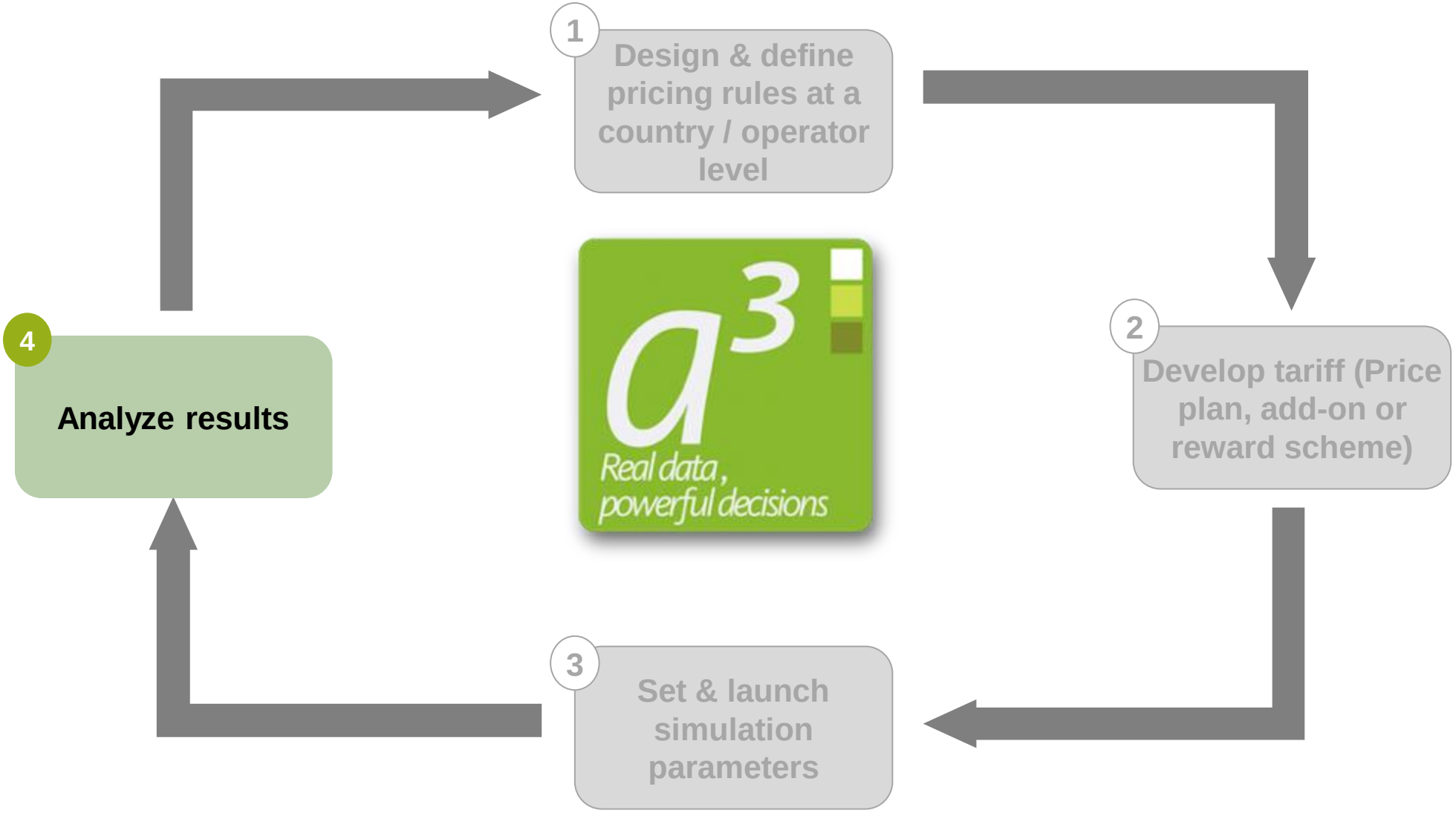
Migration curves can be graphically manipulated



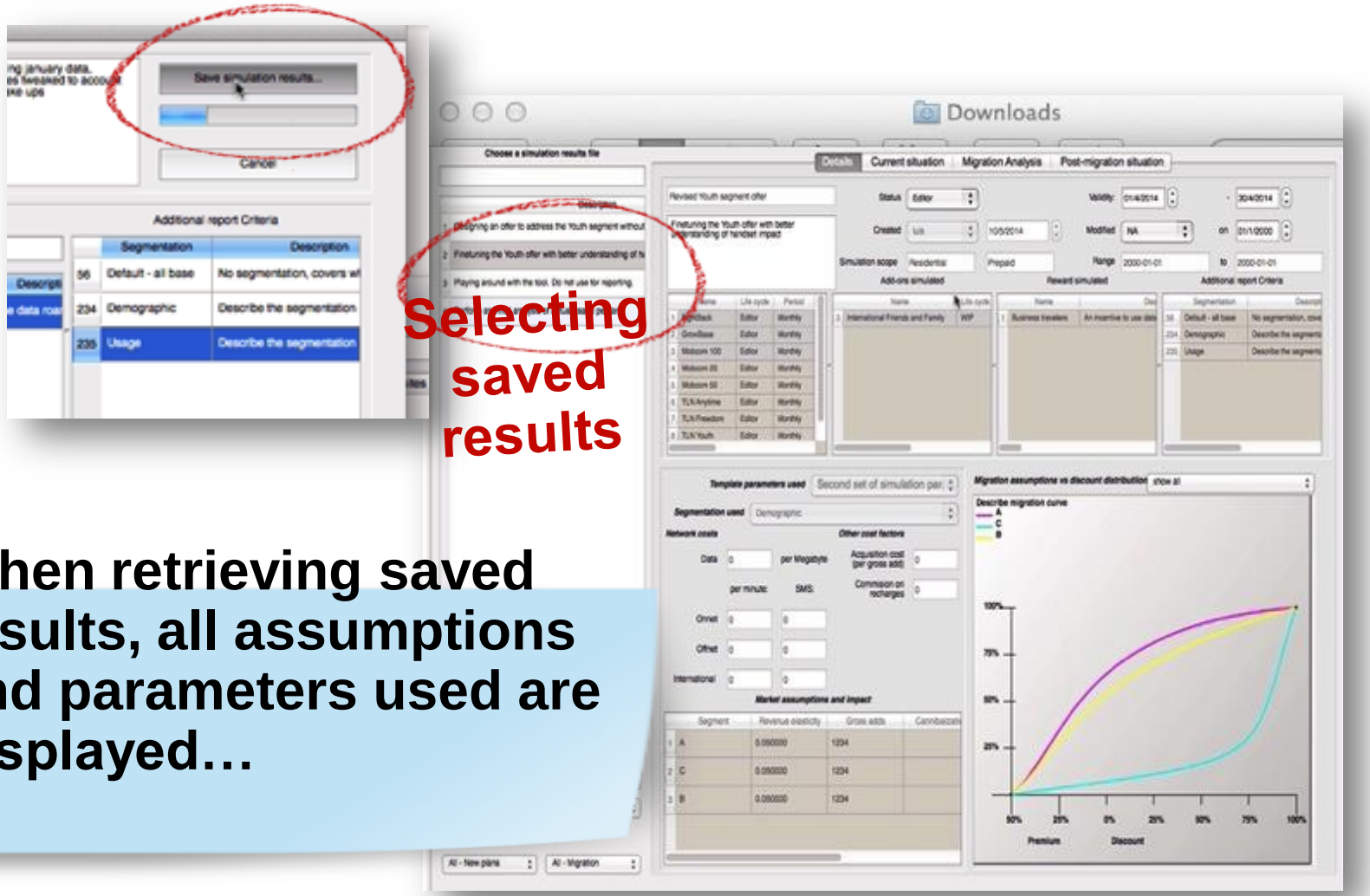


Assumptions can be pulled from template and modified

Analyzing results

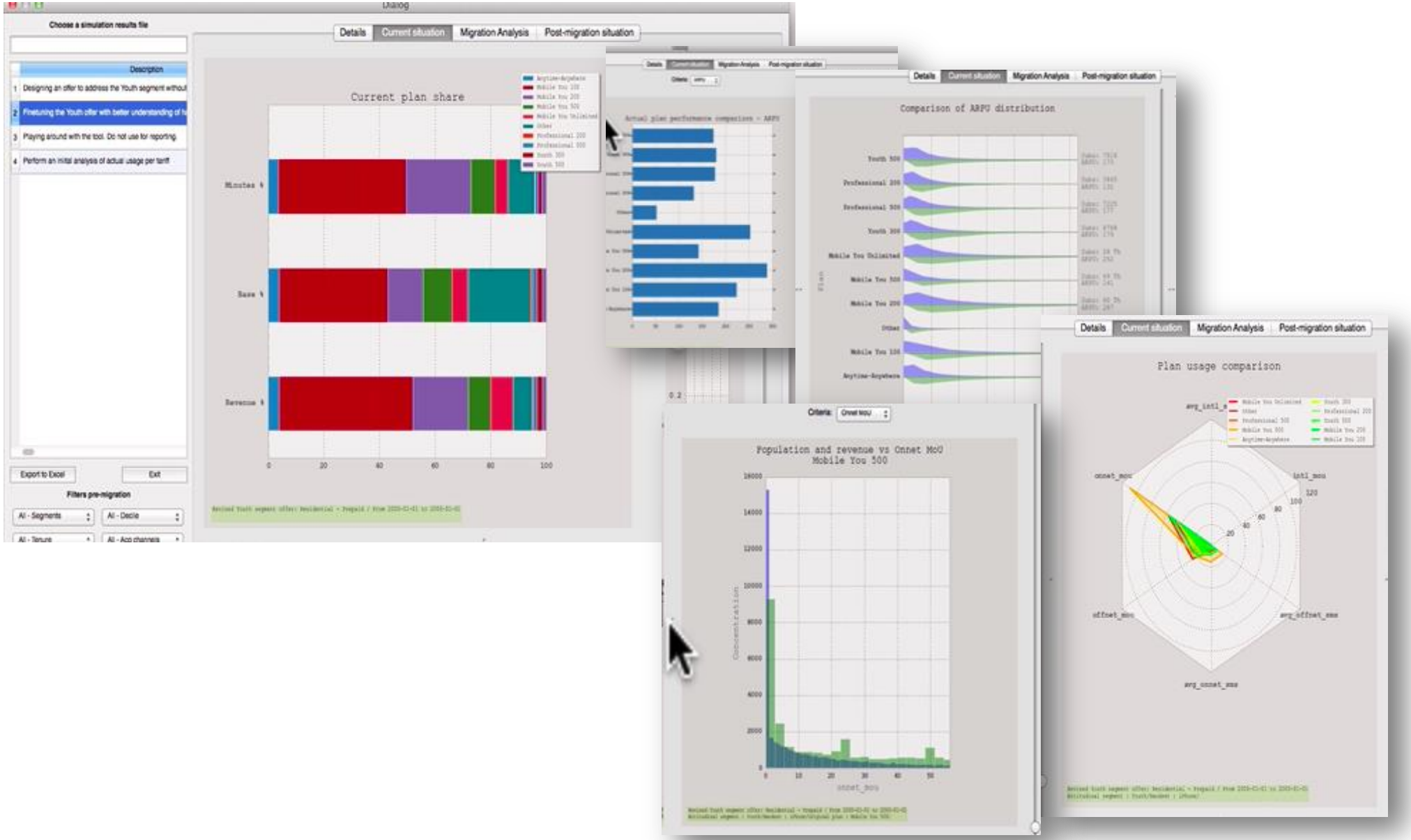


Analyzing results
Simulation results can be saved and retrieved at anytime



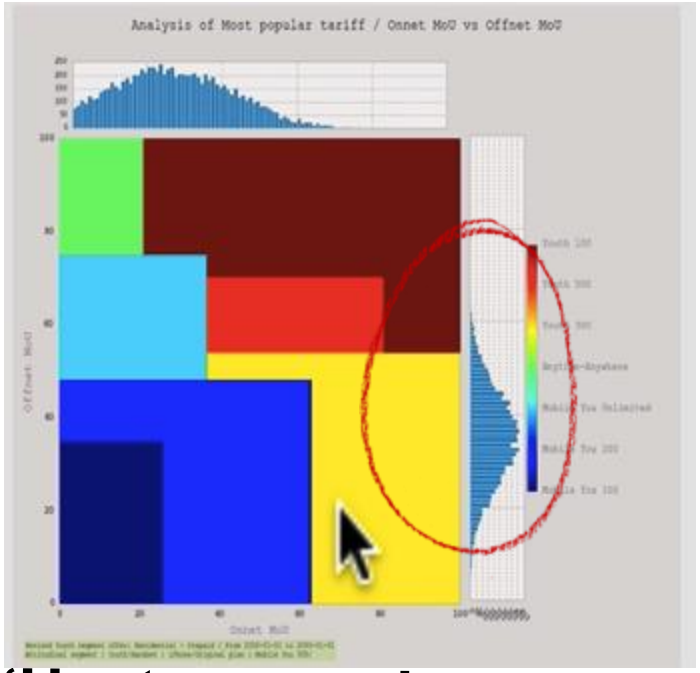
When retrieving saved results, all assumptions and parameters used are displayed…

Analyzing results
Detailed analysis on usage, behaviour, revenue and customers is available



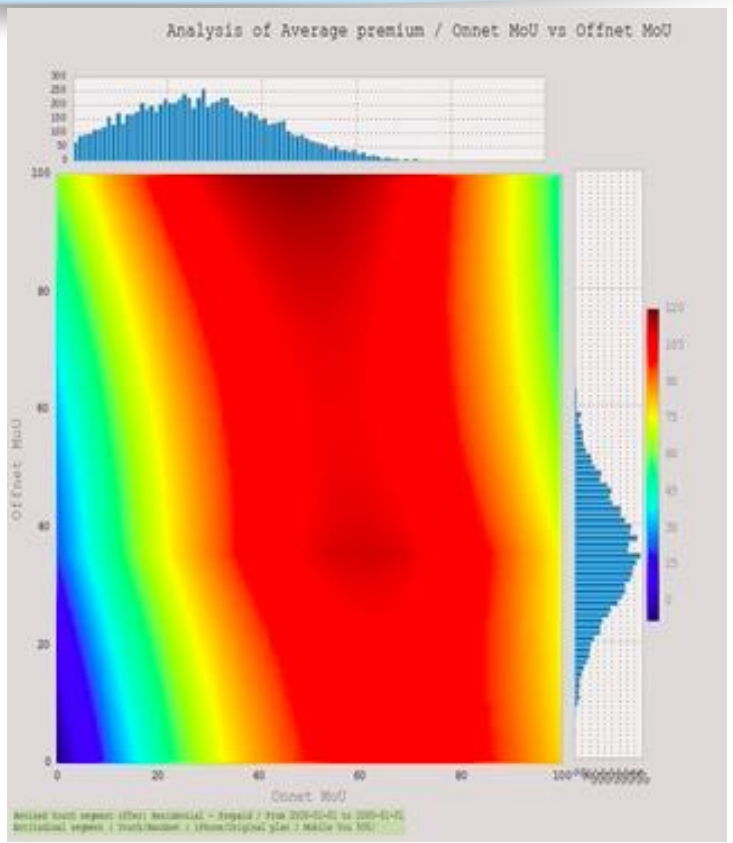
Analyzing results

Heat maps provide inside into competitive landscape



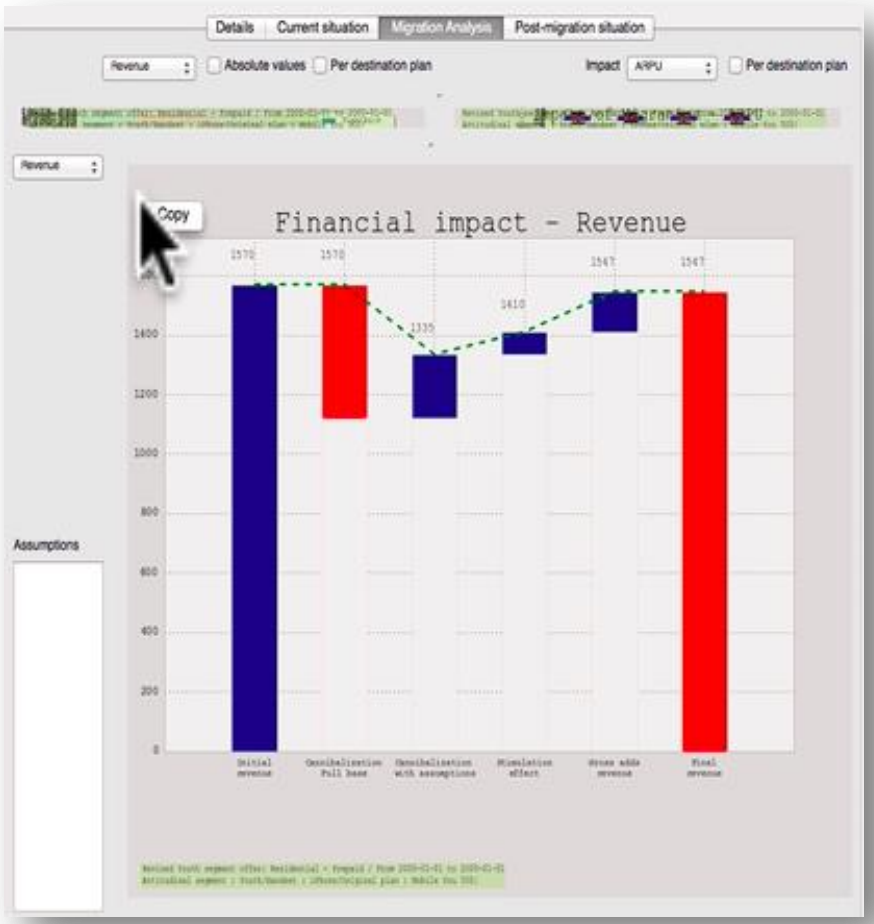
Histograms plot customer density on each usage axis

Heatmaps provide insight into not only competitive market coverage but also track the depth of premiums and discounts



"Heat maps show optimal plan for all customers based on their actual usage. Users can change x and y axis to map based on traffic of their choice…

Analyzing results
Migration impact is easily assessed



Key Features

- Different User levels – Given the different mix of pricing know how within the organization, Pricing Managers can give users different levels of access:
  - Sandbox: A Sandbox allows a user to enter a tariff within a set of established opco rules established by the Playground Monitor. This allows the pricing team to give product and segment managers access to the tool
  - Lab user: For members of the pricing tool, qualified to experiment with structural tariff changes (e.g. Time definition). Lab users can create an entirely different scenario for the Opco (e.g. what would happen if we changed our definition of Off-peak?)
- Maximum flexibility: the Tariff editor allows the definition of tariffs taking a variety of different elements, at a generic but also very specific level. Tariffs for specific BTS (e.g. Home BTS), for top numbers, for top hours (e.g. implementing a happy hour)
- Automatic tariff validation – Given the complexity of the multiple dimensions on which tariffs can be defined, the tool automatically checks that all traffic types have rules defined to cover them (e.g. “SMS tariff between 11 am and 12 pm on Friday is not defined”), or conversely are ambiguously defined (e.g. specific traffic covered by too many rules). This feature is particularly important when training users new to pricing and can help highlight possible ambiguities before implementing in the billing system and with communication.

Key Attributes of a Business Case

- Logical Assumptions: Assumptions need to be realistic and documented – the tool needs to ensure that it is the tariff that is modified to allow for a acceptable business case and not the assumptions
  - Graphical interface to enter migration assumption curves – the interface forces users to think of migration as a curve, and as a logical continuum
  - Saving standardized business cases: An standard format with pre-approved migration assumptions can be used
- Preview: While full re-processing of the entire base is recommended, give the processing time the preview tool runs on a sample to allow tweaking of tariff elements and assumptions
- Portfolio* – The simulation tool is capable of running a a portfolio combining multiple new tariffs at the same time – thus different scenarios can be created using multiple new tariffs (each simulation is saved under a specific name). Simulations are thus stored and available for comparisons to actuals once tariff is launched
- Easy to work with Results – Flexibility – top-line summary results are displayed on the interface however detailed results are exported to xl along with documented assumptions. The XL breakdown as well as the topline results can be customized at a group and even at an opco level
- Heat-maps – the tool allows users to check competitive positioning against specific tariffs selected on multiple dimensions (e.g voice vs data but also International voice vs Onnet voice)

* For the purposes of the demo this feature has been disabled as it requires heavy processing)

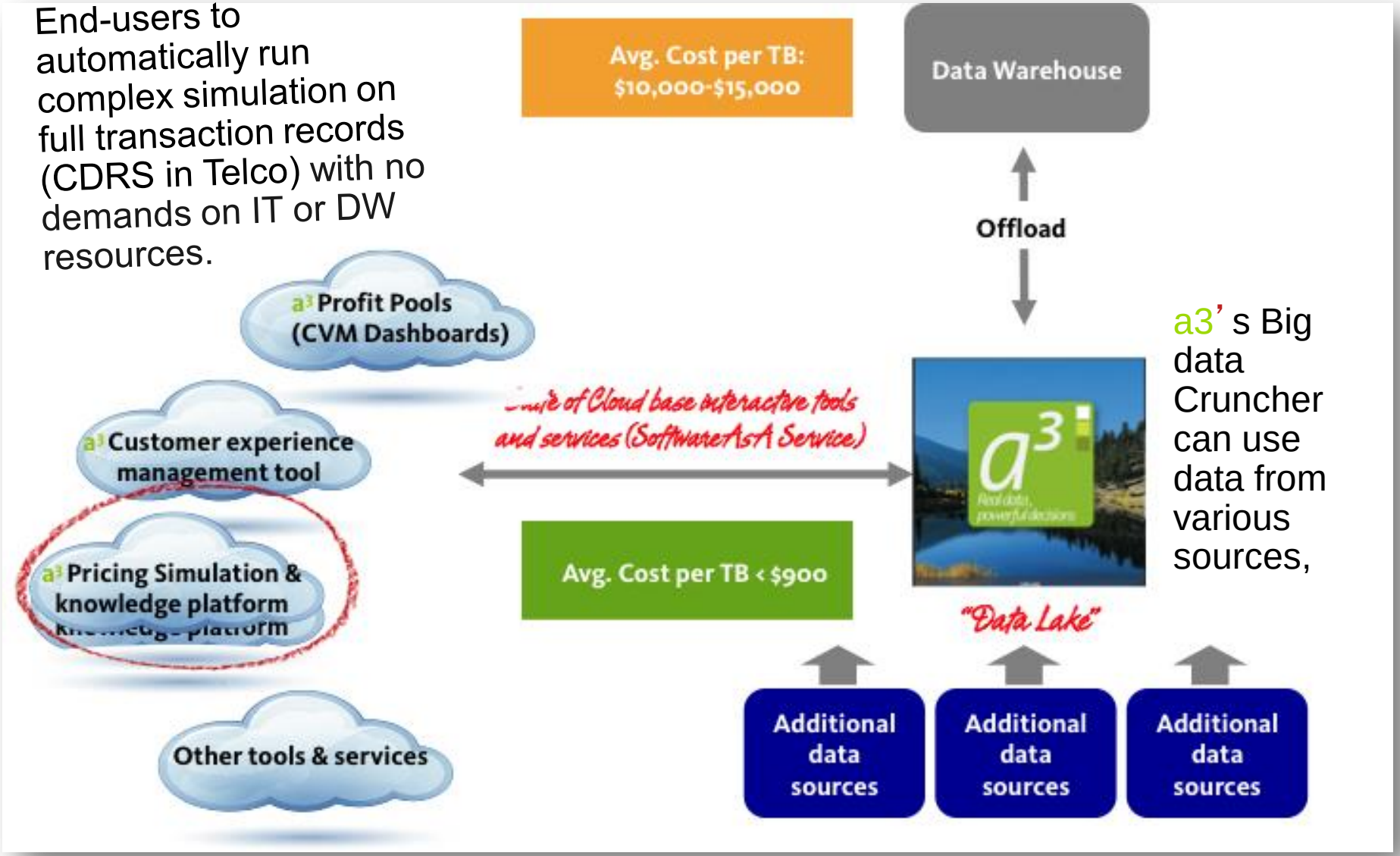
Agenda

I. The platform

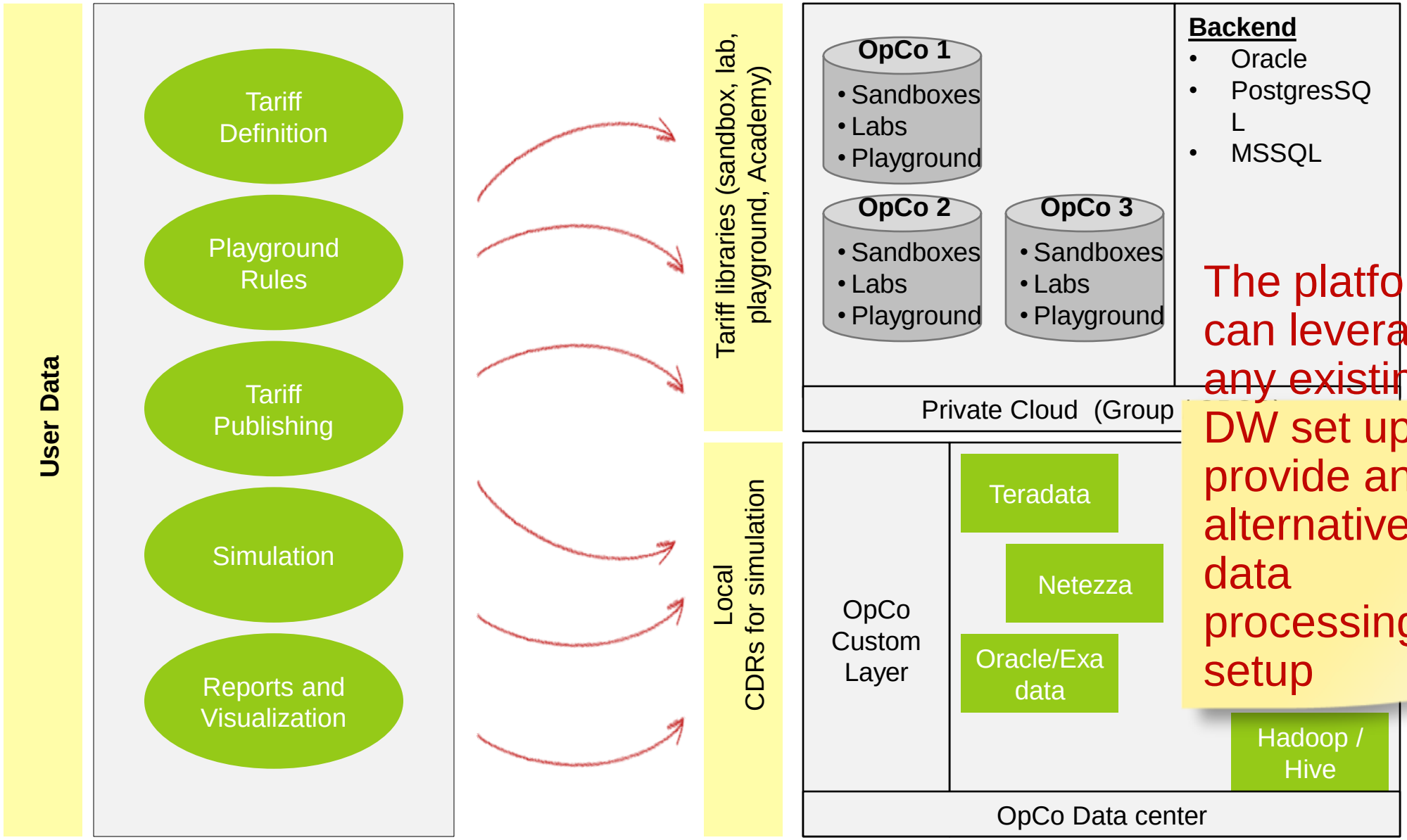
I. The tool

II. The Technology

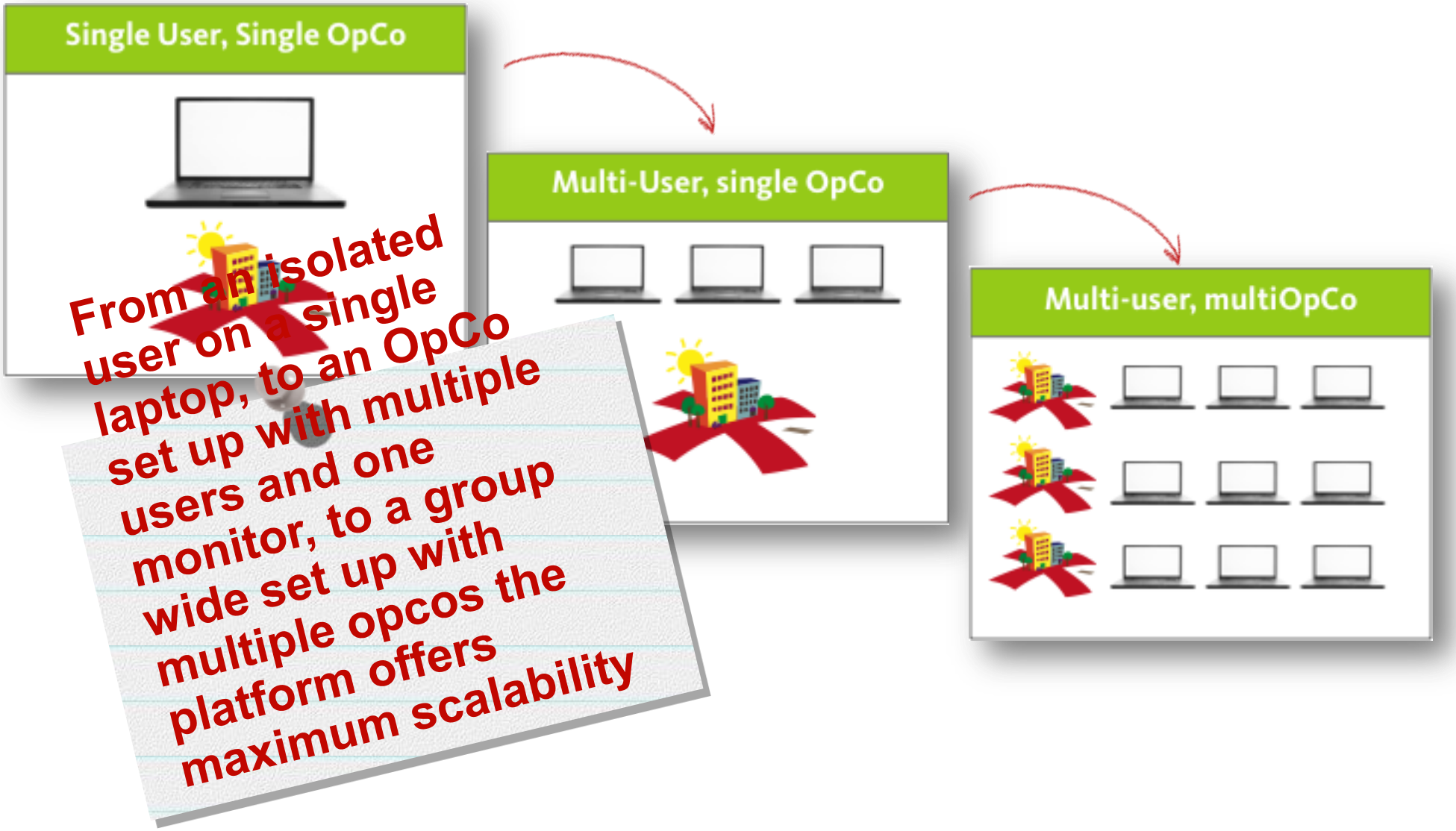
With the heavy cost of storing and processing data in traditional D/W the reward for off-loading resource hungry functions to a^3 Big Data applications is considerable…



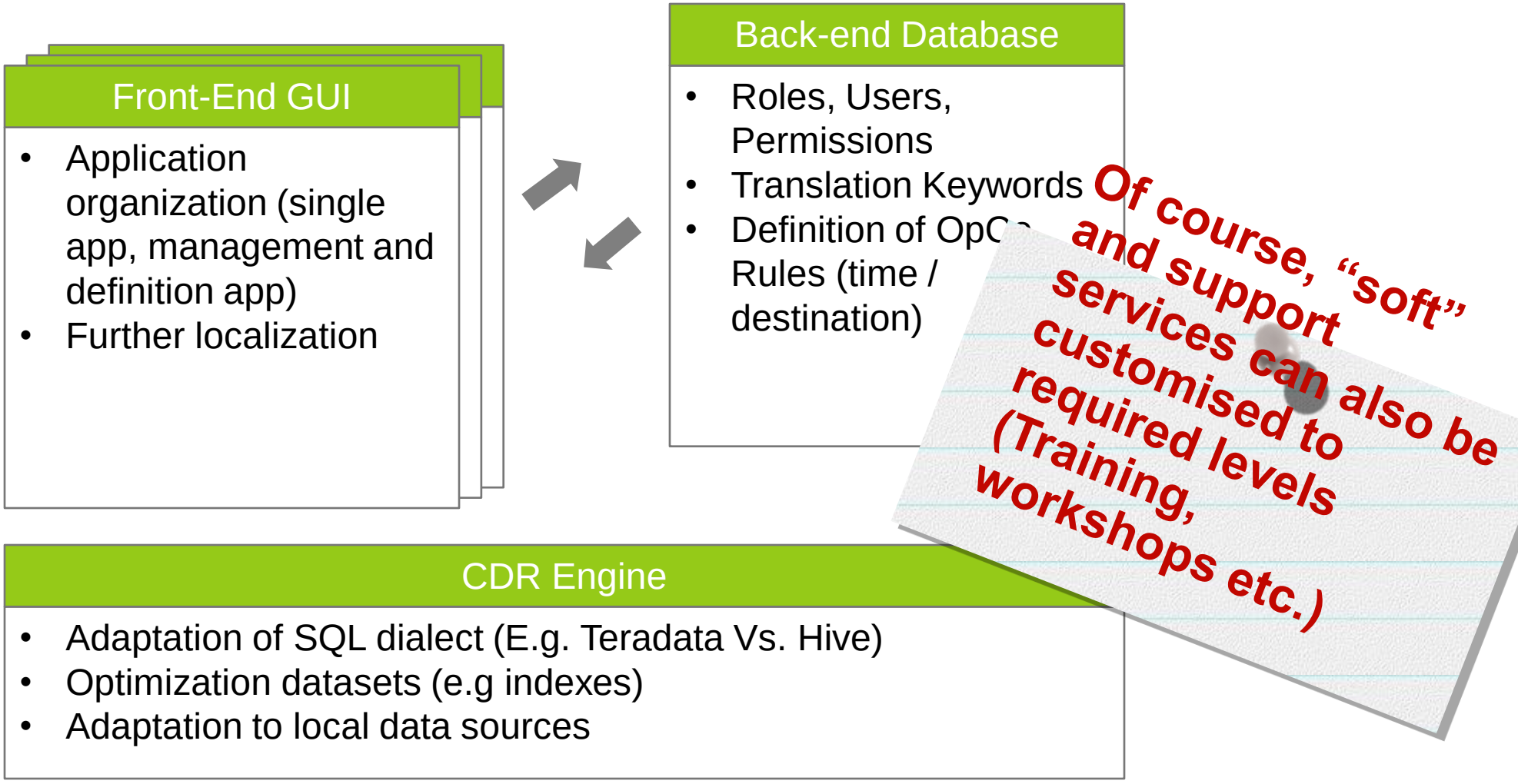
a^3 uses the power of “Big Data” and the cloud to create a hybrid global / local architecture…



…Which allows for multiple use cases



a³ 's Layered approach also allows for multi-level customization



a³'s Value proposition in a nutshell

Big data Technologies	We use the power of big data to offer solutions with low start up costs
Knowledge platform in the Cloud	The power of cloud computing to capture and leverage knowledge across organizations
Best practice inspired	user interfaced designed (based on our collective years of experience) to build-in sanity checks, and allow different usage levels to match different levels of expertise
Strategically relevant granular analytics	A meta-data configuration layer that allows for analysis at very specific levels of granularity to cater to creation and testing of very customised value propositions
Flexible and usable reporting	A flexible reporting engine that can be further customised to organizational needs