



Toll-Free Data For Global Mobile Markets
Where Subsidized Bandwidth Is Managed Exclusively
Within Each Individual App On An End-User's Device

www.freebyte.me

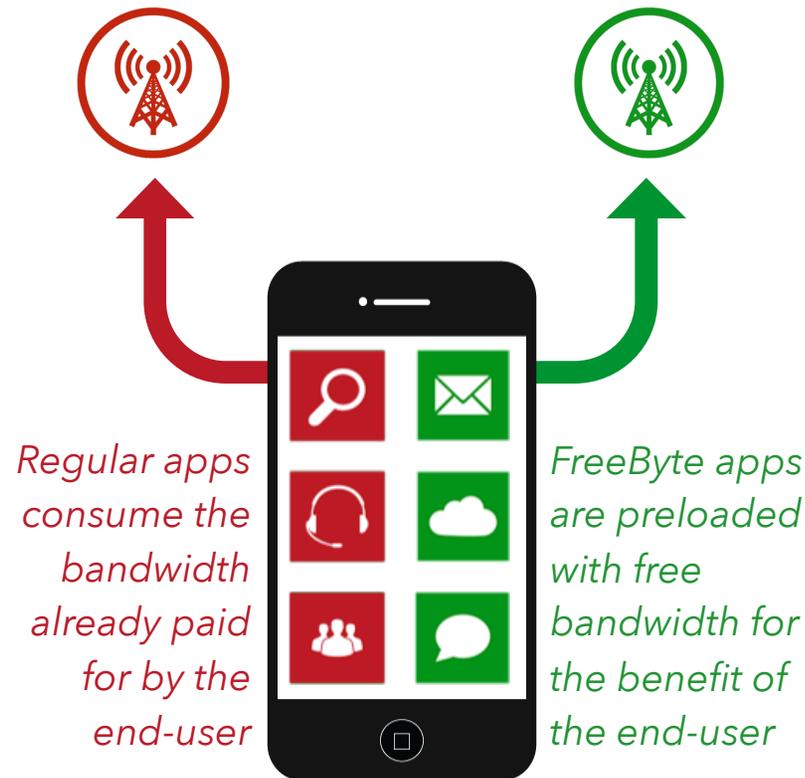
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What Are FreeByte Apps?

FreeByte* apps are a low-cost, secure, and scalable alternative to existing toll-free data / zero-rating programs currently in the market

Step One:

Mobile carriers sell their wireless access bandwidth directly to those sponsoring parties (content providers, advertisers, govts, etc.) that wish to "preload" free bandwidth into their own mobile apps



Step Two:

Mobile consumers are then free to use any of these "green" apps preloaded with free data (each a FreeByte app) and consume the embedded subsidized data without incurring access charges

*Formerly marketed as "FreeBand".

How Do FreeByte Apps Work?

FreeByte apps are programmed by the app provider to be free in circumstances determined by that specific app provider

App Provider Objectives

Encourage customers to try mobile app

Incentivize customers to use their app during specific times

Motivate customers to download high bandwidth content during "off peak" hours

Reward the highest value customers for loyal app engagement

Ensure that the app is device-type neutral (iOS and Android) and app store friendly



Sample FreeByte App Solutions

Embed free bandwidth for trial period

Embed the app with free bandwidth on weekends only

Embed the app with free bandwidth only for downloads during morning weekday hours

Increase the level of free bandwidth for best app customers

Use of FreeByte SDK for iOS, Android, and other operating systems

FreeByte Apps Are **NOT**

Forced on customers – All end-users are free to ignore FreeByte apps and continue engaging with standard apps

Discriminatory – All app providers may choose to participate and give subsidized data to their customers

Conflicting with "Net Neutrality" – FreeByte apps cannot slow down or alter the quality of another's mobile service

Are FreeByte Apps Unique?

Yes. There are many ways to offer toll-free data "in-network", but carriers need to foster an "app-centric" ecosystem to make the market really scale

App-Centric Characteristics

App provider responsible for programming "freeness" levels via "parent" SDK

Updates to app features and freeness easily adjustable by app provider

Fraud resistant

Easy to maintain millions of unique apps

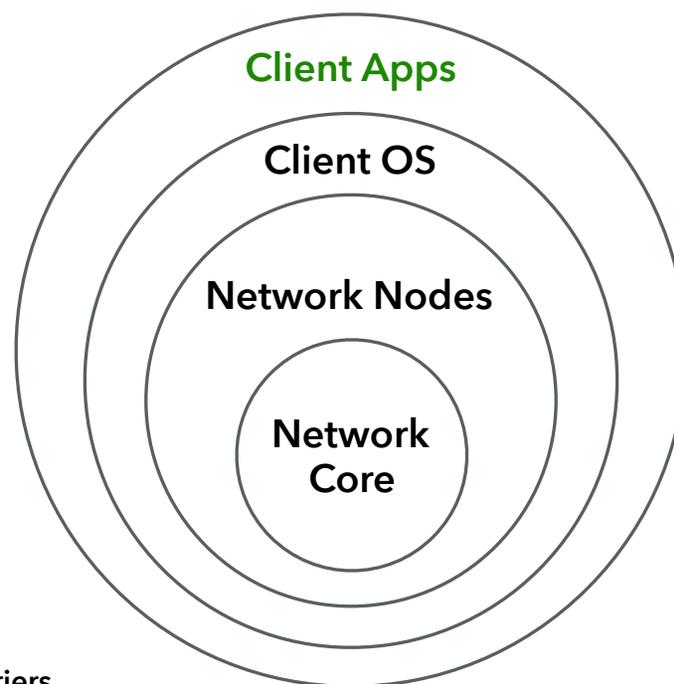
No invasive packet inspection

- Better privacy for mobile consumers
- Lower cost to carrier
- No latency impacts to mobile network

One BaaS* provider to support multiple carriers

- Lowest cost to build
- Lowest cost to maintain

Straight-forward value proposition



The App-Centric Model

Toll-free services will work best where transparency, competition, experimentation, and diversity are enabled and encouraged

Network-Centric Characteristics

Carrier support team required to program "freeness" levels into network core

Need to avoid "knock-on" effects from in-network performance adjustments

Fraud resistant

Difficult to maintain millions of apps

In-network packet inspection

- Privacy concerns for mobile consumers
- Higher cost to carrier (more servers)
- Some latency effects on mobile network

Each carrier has its own solution

- Highest cost to build
- Highest cost to maintain

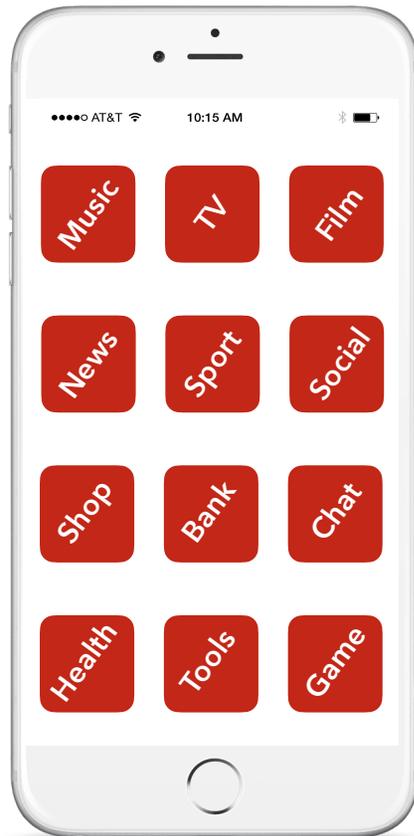
Mobile consumers remain confused by toll-free offerings

* "Bandwidth as a Service"

Will Markets Embrace FreeByte Toll-Free Data Apps?

Given the choice between similar apps, the FreeByte apps win every time

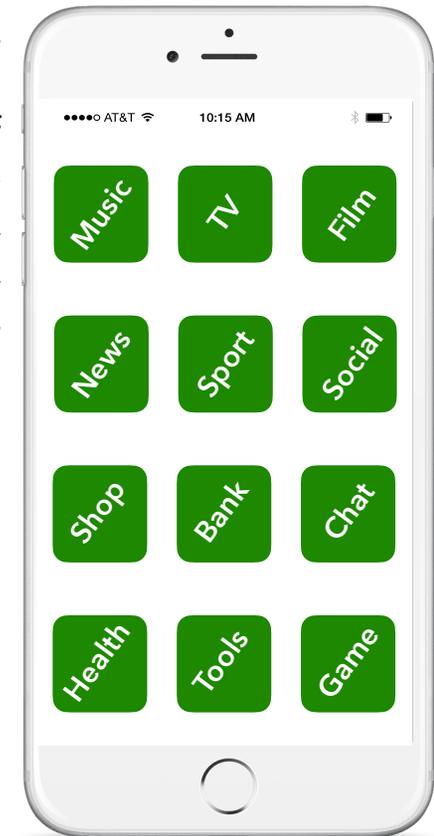
User Pays For
Bandwidth Consumed By Each App



This was a great model for the early years of the mobile revolution, but it does not reflect the actual price dynamic and value proposition of bandwidth provisioning

App Provider Pays For
Bandwidth Consumed By Each App

FreeByte brings dynamic pricing to all members of the mobile value chain – carriers, app providers, and customers



The FreeByte Challenge

Go ask any mobile user you know, all things being equal (same speeds, same content, same features), whether they would voluntarily choose to use the “billed data” red apps (left side) or the “free data” green apps (right side)

How Can FreeByte Toll-Free Apps Help Carriers & End-Users?

Creates upward demand cycles for bandwidth to benefit end-users

Global Mobile Carrier Revenues (Billions USD Per Annum)*

2016	2017	2018	2019	2020
\$1,222	\$1,260	\$1,299	\$1,340	\$1,381

Potential Accretive Toll-Free Revenue (Billions USD Per Annum)

Uplift %	2016	2017	2018	2019	2020
1%	\$12	\$13	\$13	\$13	\$14
2%	\$24	\$25	\$26	\$27	\$28
3%	\$37	\$38	\$39	\$40	\$41
4%	\$49	\$50	\$52	\$54	\$55
5%	\$61	\$63	\$65	\$67	\$69
10%	\$122	\$126	\$130	\$134	\$138
15%	\$183	\$189	\$195	\$201	\$207
20%	\$244	\$252	\$260	\$268	\$276
25%	\$306	\$315	\$325	\$335	\$345
30%	\$367	\$378	\$390	\$402	\$414

* Source: GSMA report "The Mobile Economy 2015" (forecasting 3.1% CAGR from base of \$1.15 trillion in 2014).

Note: In the opinion of the FreeByte team, early toll-free movers will see greater percentile accumulations (capturing more in terms of new and existing subscriptions, as well as seeing accelerated smartphone adoption).

Given that mobile operator revenue mix is rapidly shifting from voice+text to data, the importance to carriers of accelerating mobile data adoption while also fostering market-driven margins is critical. **As such, mobile carriers must explore new revenue models such as FreeByte toll-free apps that have the potential to optimize free market efficiencies and price transparency.**

In the process, carriers can continuously **improve the value proposition for their end-user customers** who will be the beneficiaries of increased amounts of free data in their daily lives.

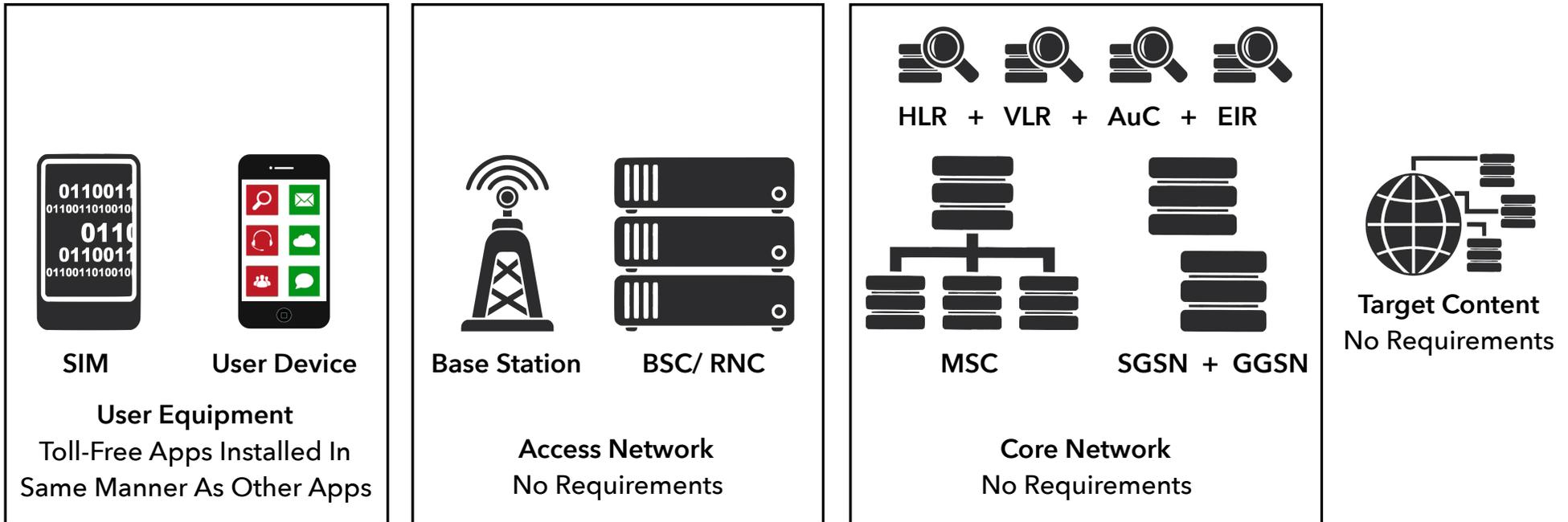
Are Mobile Markets Ready To Embrace Toll-Free Data Apps?

Carriers on every continent are already exploring /offering toll-free data



What Are FreeByte Toll-Free App Deployment Requirements?

Minimal requirements on mobile carrier infrastructure and operations



FreeByte Application Activity System

Each FreeByte app autonomously consumes data per its internalized rules (permission never sought from carrier network). All activity then reported to FreeByte system registry that audits the same and then forwards report to carrier CRM / OMOF.



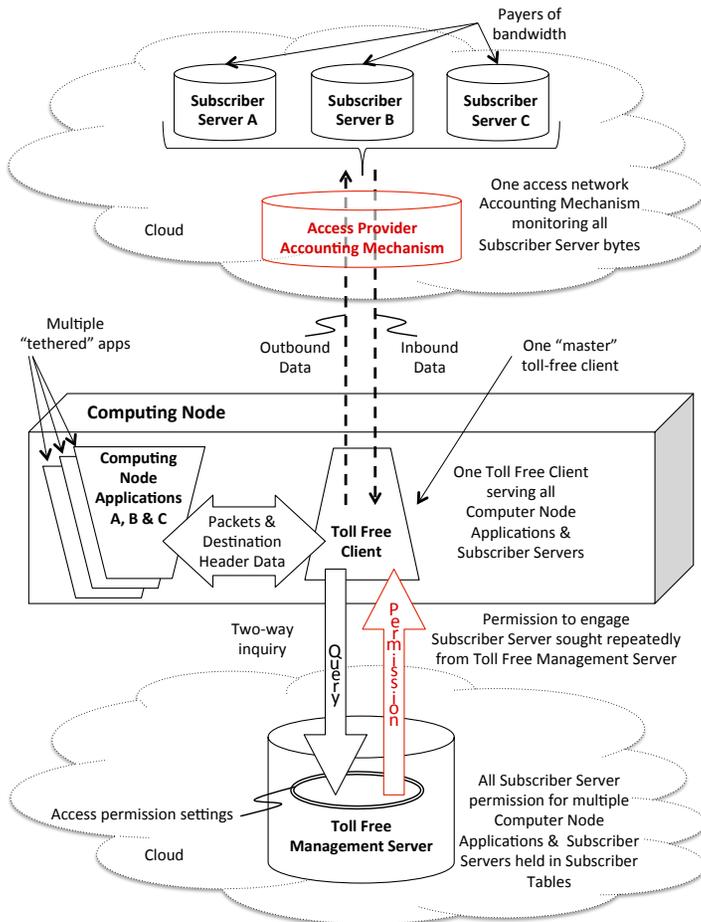
Carrier CRM / OMOF

Carrier inventory, provisioning, and billing system receives app activity system report data from application activity system registry and "tops-up" specific accounts (periodically / in near real-time).

What Are Some Of The Key FreeByte IP Advantages?

FreeByte enables each autonomous app to manage its own "freeness"

Apps Must Rely On Network-Based Permissions

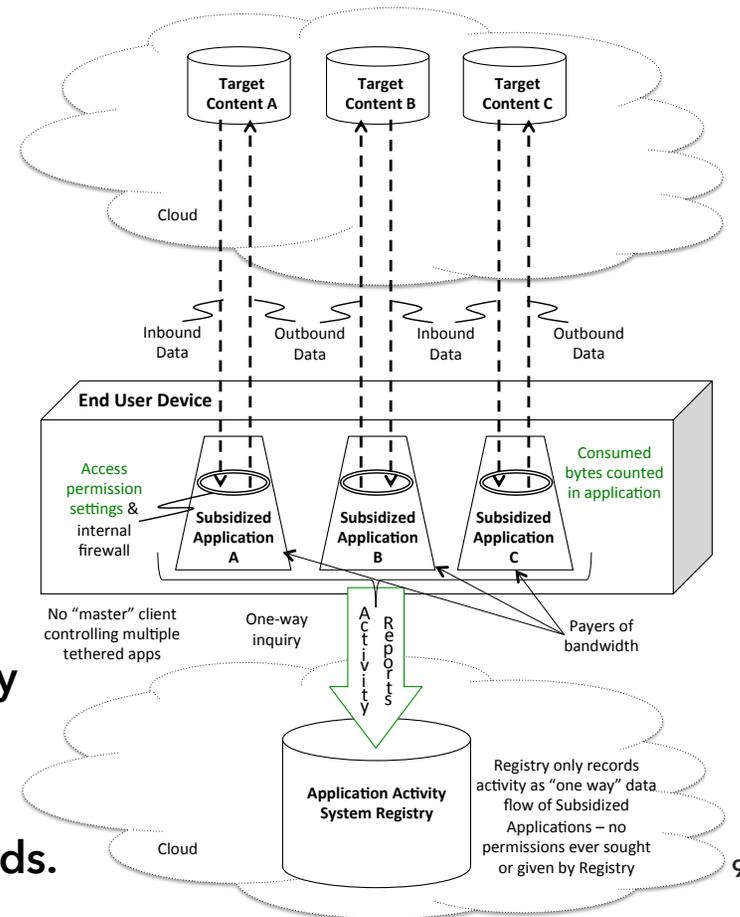


Toll-free markets started with costly and inefficient inside the network permission architectures . . .



. . . but will rapidly migrate toward autonomous app systems & methods.

Apps Need Only Rely On Their Own Internal Permissions



Are The FreeByte Patents Unique?

FreeByte is the only known patent holder for an autonomous toll-free app

FreeByte

Investment: \$0.5M (Founders)

Earliest Toll-Free Patent Filing Date - 8/9/2010

Patents Granted - **YES** - CHINA – **Granted On All Claims**

India, US & EU Pending (Patent Cooperation Treaty (PCT)

Opinion 100% Clean / No Claim Objections)

Notes:

- FreeByte has filed the earliest, most detailed, and likely most valuable patents in key global markets.
- FreeByte was also the first toll-free app tech to be vetted in meetings with the US FCC policy team (2011).
- FreeByte has avoided costly “cash burn” while waiting for patents to issue and global markets to embrace the toll-free model.
- FreeByte patents cover both wireless and wireline implementations, as well as those for client devices whether characterized as being mobile phones, computers, TVs, cars, IoT devices, wearables, appliances, and analogous.

Potential FreeByte Competitors*

Competitor “A” (USA) - Raised +\$75M

Earliest Known Toll-Free Patent Filing Date - 2013

Toll-Free Patents Granted - **None Known**

Competitor “B” (USA) - Raised +\$10M

Earliest Known Toll-Free Patent Filing Date - 2012

Toll-Free Patents Granted - **None Known**

Competitor “C” (USA) - Raised +\$10M

Earliest Known Toll-Free Patent Filing Date - 2013

Toll-Free Patents Granted - **None Known**

Competitor “D” (USA) - Raised +\$1M

Earliest Known Toll-Free Patent Filing Date - 2013

Toll-Free Patents Granted - **None Known**

Competitor “E” (USA & India) - Raised Seed

Earliest Known Toll-Free Patent Filing Date - **None Known**

*Sources: Competitors’ websites, Crunchbase, US patent office filings.

Why Is FreeByte Valuable?

FreeByte is the only patented tech that can be global and carrier agnostic

The collage consists of four main components:

- United States Patent Application Publication:** Shows a patent document for "APPLICATION ACTIVITY SYSTEM" by Sachson, filed on Aug 9, 2011. It includes an abstract and a flowchart diagram of the system.
- Chinese Patent Application:** Shows a patent document for "(12) 发明专利申请" (Invention Patent Application) filed on 2011.07.20. It includes a title in Chinese and a flowchart diagram.
- Espacenet Patent Search:** Shows the European Patent Office's search interface for application WO/2012/12560 (A2). It displays bibliographic data, application activity system, and classification information.
- Indian Patent Application:** Shows a patent document from the Controller General of Patents, Designs and Trademarks, India, for application number 1381/CHEN/2013. It includes a title in English and a flowchart diagram.



Pending



Granted



Pending



Pending

The FreeByte Team

The FreeByte team has been an early advocate for the open and unrestricted use of toll-free technologies and has considerable expertise in dealing with issues of technical requirements, market adoption, public policy improvements, regulatory permissiveness, and economic feasibility.