

Project Experience | TollFree Cellular, Seattle WA

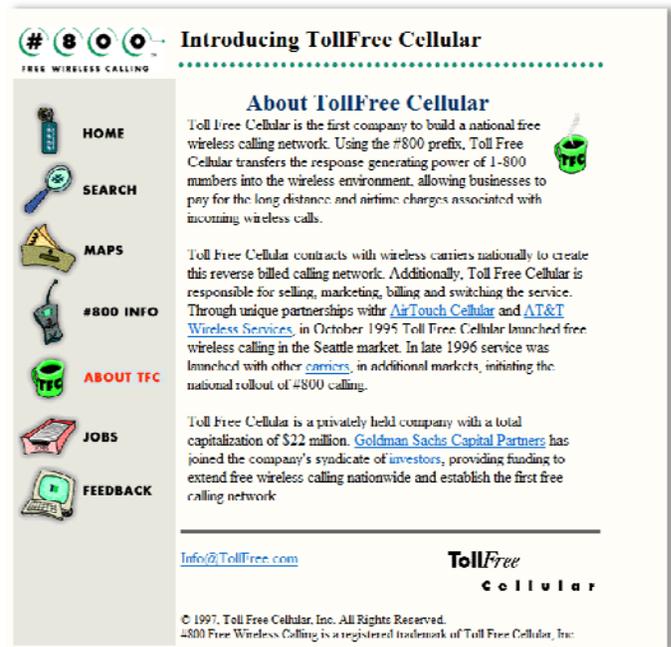
Earnest Development began working with **Toll Free Cellular** in July 1995 and over the course of 2 years was instrumental in development of technical processes and database systems, providing creative technical solutions, programming expertise and on-site support and training. Jacqui and Dennis provided more than 900 contract hrs working primarily on-site, and were an integral component of the IT team at this telecom start-up.

“Earnie” - MS Access database application for provisioning, call volume income and and commissions.

We were brought in initially to convert a small flat file into a simple relational MS Access database. Enhancements were added to begin tracking a growing customer base, assign new phone numbers, and we developed a methodology for importing CDRs from the switch (ICON) to monitor call volume and calculate carrier (AT&T) commissions. TFC founder and first CEO John Clark affectionately named this experimental/business-critical system after us.

“Earnie2” - MS Access database application for customer care and business information.

As TFC gained funding and momentum, we were contracted to provide requirements gathering, definition, development and implementation of a feature-rich customer care system to track accounts, phone number provisioning and sales performance for multiple markets. Jacqui and Dennis worked with TFC to specify and develop basic business metrics reports to track customer and line counts, call volume and income. The system also included telephone directory publishing routines. Earnie2 served as a prototype for specification of a third party billing vendor system (Saville).



Data Warehouse - MS Access and SQLServer database application for business information and reporting.

In Phase 1, we developed a MS Access database with import processes to enable TFC to upload, monitor and analyze CDR, customer and billing data from the Saville system. We developed an extensive set of business metrics reports and assisted in Ad-Hoc reporting to serve TFC's rapidly expanding operation.

In Phase 2, we converted the maxed-out Data Warehouse and its download functionality from Access v2.0 to a SQL Server database with MS Access 97 front end. Access queries and reports were upgraded to SQLServer stored procedures, and many new reports were introduced.

Pulse prototype:

We developed methodology to parse BCD format data into Access from a SS7 switch (Ram 7).

VRU reporting:

We wrote sales reports based on the Voicetek Oracle database.

Client: TollFree Cellular, 900 Fourth Avenue, Suite 3400, Seattle WA
Jurij Pikas,CIO; Mike Adkins, IT Project Manager; Tovin Monaco IT Project Manager
Associated consultants: John Blanchard, Barkley Associates
Total 4,000 hours/2 people

Background information about TFC:

[ICB Toll Free \(800/888\) News](#) by: [Judith Oppenheimer](#), Publisher, ICB Toll Free (800/888) News
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TOLLFREE CELLULAR

Borne of regulatory loophole -- and welcomed by cellular carriers -- TollFree Cellular and its telco partners will perhaps escape the greedy clutches of the FCC control patrol, currently wreaking havoc in the wireline toll-free marketplace. (For more information see ICB Toll Free News Cover Story.)

New York, NY US - New York, NY May 5, 1997 (ICB TOLL FREE NEWS) Five years after its founding and just two years after its first service was introduced, TollFree Cellular is ready to go national.

TollFree Cellular offers literally just that: a reverse-charge cellular service that can be used either on a local or national basis. The Seattle-based service already is operating in the Seattle/Tacoma corridor, the Dallas/Fort Worth Metroplex, Atlanta, Kansas City/Wichita, Salt Lake City, Las Vegas, and Norfolk, Virginia. The service will debut in St. Louis, Denver, Minneapolis, and Philadelphia by mid-year. The company plans to expand into the top 100 cellular markets by mid-1998.

The time for the company's expansion could not be more perfect. U.S. consumers are turning to cellular services as an alternative to clogged hardwire lines in growing numbers. This represents a major change in cellular usage. Until recently, cellular phones were considered a business expense or a safety precaution - not a tool of everyday life.

Today, consumers are beginning to increase their cellular telephone use to include personal activity.

Enter TollFree Cellular, which has actively pursued the very companies consumers are likely to use: take-out food chains, banks, and other service-oriented industries.

These companies offer services that customers are most likely to use while driving home from work. For example, a pizza place might advertise their pound-800 number on a billboard, or buy time on the radio during drive-time hours. Capturing the user's attention is only half the battle, however. TollFree Cellular believes that, if the call is free and simple to place (i.e., only four digits), the consumer will be more likely to use the cellular phone to call and order a pizza (or whatever) on their way home. This increases billing for the cellular companies, increases business for the advertiser, and earns TollFree Cellular a monthly fee.

TollFree Cellular is not an actual cellular service in the traditional sense of the word. The company was built to circumvent FCC anti-monopoly regulations that forbid the cellular services from joining forces. The TollFree Cellular founders discovered that, although the cellular companies could not work cooperatively, they could be joined by a third, non-cellular party. Hence, TollFree Cellular was born.

Here is how it works, technically: TollFree Cellular buys time from all of the cellular carriers in a given market.

TollFree Cellular then provides the company with software that enables them to reverse charges (charge the company instead of the caller) and also to handle calls from all of the area's cellular carriers. (The software was originally developed by AG Communications Systems of Phoenix, a joint-venture of AT&T and GTE.)

TollFree Cellular then markets the #800 service to businesses within the service area. The company offers four, five, seven, and eight digit numbers, including vanity numbers, to customers. The company is able to make-up any number it wants, as long as it begins with a # sign. The # sign is not a recognized character in the North American Numbering Plan, and therefore is not reserved by the government. (The FCC controls distribution - and use - of hardwire 800 and 888 numbers.) This also means that calls placed to a # number would not be completed - unless the telephone companies involved in the call had previously agreed to recognize the number.

#800 numbers operate essentially the same way. TollFree Cellular creates a number and then asks all of the area cellular carriers to recognize that number. The cellular companies in turn set up the #800 number in their systems to switch calls to whatever the corresponding terminating number really is.

Because all of the numbers are preceded by the # sign, they are not part of the North American Numbering Plan. Therefore, the company is not regulated by the FCC. This means that the FCC has no say in TollFree Cellular's numbering assignment plan.

Also, TollFree Cellular is immune to the FCC's recent crackdown on alleged 800-number "hoarding" activities.

The practice is legal, as long as TollFree Cellular does not violate any branding issues, said Ben Levitan, Principle Telecom Engineer and former member of the State Department's U.S. Delegation to the ITU on the development

of Global 800. "Legally, they can do it as long as they don't violate any branding issues," he said. "Technically, # numbers are not really numbers in the FCC's view. They are not in the (North American) Numbering Plan." Currently, TollFree Cellular is the only company offering such a service anywhere in the U.S. Therefore, the company pretty much has the entire range of potential numbers at its disposal. The company has built-in some safety nets to protect customers, TollFree Cellular said.

"For anyone with a 1-800 (hardwire) number, we match that number by adding a pound sign to the beginning (in place of the 1)," Kregor said. "The pound sign is what tells the cellular switch that this is a unique number, and sends it to the special switch." Potential customers must prove that they already own an 800 number before TollFree Cellular will award the corresponding toll-free cellular number, Kregor said.

TollFree Cellular is reserving all of the existing 800 numbers, and will not assign them to anyone other than the company that owns the corresponding hard-wire number, he said. This is because of the value of vanity numbers (e.g., 1-800-FLOWERS). To help preserve these numbers, TollFree Cellular has developed a new set of numbers. "For someone who has never had a 1-800 number, we've developed a simplified four-digit string," he said. "The purpose of that is, one, to keep it ergonomically easy to dial; and two, it opens up a whole new realm of vanity numbers (for local businesses)."

In both cases, the customers do not own the numbers. Instead, they essentially lease the numbers from TollFree Cellular, which acts as a go-between for the cellular companies and the customers. TollFree Cellular guarantees that customers can keep the number for as long as they want, Kregor said.

The company has exclusive rights to the numbers by default. There are no competitors fighting for the same numbers, leaving the entire range of numbers available to TollFree Cellular. (It appears that TollFree Cellular did not acquire the numbers from any other entity. It simply stepped up and claimed them.) Kregor declined to comment on what would happen if another service stepped up to the plate, noting that it is not a concern right now. Presumably, if another service arrived on the scene, the new company would have to work cooperatively with TollFree Cellular to determine what numbers had already been claimed. Kregor also declined to comment on how much the numbers cost, but noted that the price range varies by contract.

After a company acquires a toll-free cellular number, the process is fairly automated. A typical call would go somewhat like this: * A caller dials a toll-free cellular number, which always begins with the # sign. * The call is connected to the appropriate carrier's switch. * The # sign tells the switch that this is a reverse billing call, and routes the call through the TollFree Cellular SS7 infrastructure to a customized translation database housed on a Tandem Service Control Point operated by Illuminet. * The #800 number is translated to the destination number at the SCP, and the routing information is sent back through the original switch via SS7 links. * The call is completed and charged to the recipient.

TollFree customers (i.e., the companies) pay for the cellular calls and also pay a monthly leasing fee to TollFree Cellular. The company declined to comment on how much the monthly fee was, and also did not say how much a reverse-charge call might cost the customer. Both are negotiated on a case-by-case basis.

Currently, TollFree's service is available solely as a local service. Many of the company's early adopters have been in the food and service industries, including individual locations of Godfather's Pizza, Boston Market, and SeaFirst Bank. The company plans to offer nationwide toll-free service after a wider roll-out of the service, possibly beginning in 1998 or 1999.

TollFree Cellular is privately held. The company received a cash influx from investor Goldman-Sachs in October, which is being used in part to finance the national roll-out of TollFree Cellular's service.

Author/Correspondent's Profile: [Judith Oppenheimer](#), Publisher, ICB Toll Free (800/888) News
