ShoreTel®

Brilliantly simple ™

Reduce Cellular Spend With ShoreTel Mobility

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1. Executive summary

Organizations continue to spend valuable budget on international and long distance calls. This white paper provides a sample return on investment (ROI) analysis for an enterprise with U.S. headquarters and several international locations, and shows how ShoreTel Mobility can help lower costs.

The name of the customer and their location have been altered to create a generic form of the actual ROI case study.

2. Objective

To show how a multi-location organization can reduce cellular spend by leveraging current Wi-Fi and dual-mode smartphone deployments, and offloading expensive minutes from cellular networks to virtually free WLAN networks.

3. Situation

International cellular direct dial and roaming

The customer currently operates in four major cities: Boston, Los Angeles, London, and Osaka. Employees frequently use their smartphones to call between these different locations (referred to as international direct dial). The enterprise is then burdened with per minute costs in excess of $1 for calls between the U.S. and London/Osaka. When U.S.-based employees travel to the foreign remote offices (referred to as international roaming), they are charged in excess of $2 per minute for calls placed within the cellular network from their mobile devices.

Domestic cellular calls

Cellular plans typically offer three forms of tariff.

- "Unlimited" plans: Plans that allow unlimited calling for domestic calls (i.e., now famous $99 rate plans available from most domestic carriers). No overage minutes are associated with these plans.

- "Bucket" plans: These are tiered plans with a defined number of domestic minutes (i.e., 800 minutes) for a fixed fee. Usage beyond the defined number of domestic minutes results in more expensive "overage" minutes (typically around 25 cents).

- Open usage plans: These plans require some base fee (between $0 and $25 per month) and a fixed per-minute charge (typically 3 to 10 cents per minute). There is no minimum usage and each call is charged for actual minutes used, without limitation.

International calling and roaming rates vary by country and are not included in the domestic rate or tariff.

Power users might be tempted to buy $99 unlimited plans that offer a fail safe for overages, but these plans often include significantly more minutes than necessary.

4. ShoreTel Mobility designed to reduce costs

ShoreTel Mobility extends the full power of a desk phone and unified communications (UC) capabilities to a mobile and sets the user free to communicate from any location (office, home, hotspots) by enabling access to any network (cellular or Wi-Fi), simply and cost effectively.

ShoreTel Mobility is designed to reduce mobile costs with the ability to automatically select the most cost-effective method of routing calls.

Domestic dialing

The ShoreTel Mobility Router allows the seamless offload of minutes from the cellular network to the WLAN network. The reduction in minutes enables customers to downgrade their cellular plans.

Additionally, savings can be achieved through enhancements in productivity. Features such as one-number ringing that allow callers to reach employees the first time, enterprise-grade presence systems on mobiles that enable employees to choose the most effective means of communication, and Active Directory integration that provides access to a full enterprise address book, provide significant productivity benefits.

International direct dial

When making an international call from a domestic location with WLAN access, the ShoreTel Mobility Router can seamlessly intercept a call made on a smartphone and route it through VoIP instead of through the cellular network. Additionally, ShoreTel Mobility provides the added benefit of handover which is the ability to seamlessly transfer an in-process call from cellular to Wi-Fi once a network is detected.

When away from a Wi-Fi hotspot, the phone engages the router to make a call using VoIP to connect overseas. This still uses domestic cellular minutes, but avoids extravagant long-distance fees. The router seamlessly fuses the domestic cellular call to the VoIP international call.

The difference between a ShoreTel Mobility VoIP-enabled call and a regular cellular network call to an international destination can be orders of magnitude. Below is a comparison of international direct dial costs to Japan and UK, with and without ShoreTel Mobility.

Note: Costs derived from major US cellular carrier's long distance pricing at time of print.
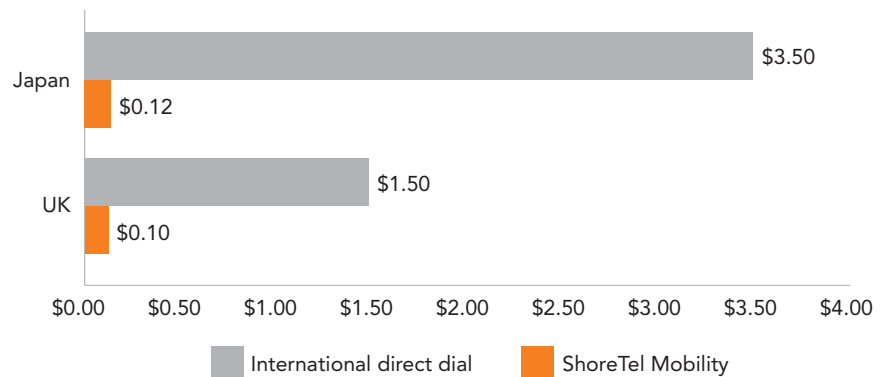
Japan	International direct dial	$3.50
	ShoreTel Mobility	$0.12
UK	International direct dial	$1.50
	ShoreTel Mobility	$0.10

Chart 1 - International direct dial cost per minute to Japan and UK, with and without ShoreTel Mobility

International roaming

The ShoreTel Mobility Router allows smartphone users to seamlessly connect to any available Wi-Fi network and securely place VoIP calls. This means that the international travellers can place inexpensive VoIP calls from a hotel room, international enterprise location, or another available hotspot.

If Wi-Fi is unavailable, ShoreTel Mobility uses reverse dialing and SIM swap to further negate international roaming charges. SIM swap utilizes a local SIM card to reduce costs. The ShoreTel Mobility Router automatically forwards calls to the new SIM in the same manner it would forward calls to the original SIM card. Reverse dial allows smartphone users to take advantage of international asymmetrical pricing plans. In many countries, it is significantly less expensive to receive a call than to make one. In this case, the smartphone client makes a dummy call to the router. The router then calls the intended recipient and simultaneously calls the user back.

Once again, the differences in cost can be staggering. Below is a comparison of international roaming costs for Japan and UK, with and without ShoreTel Mobility.

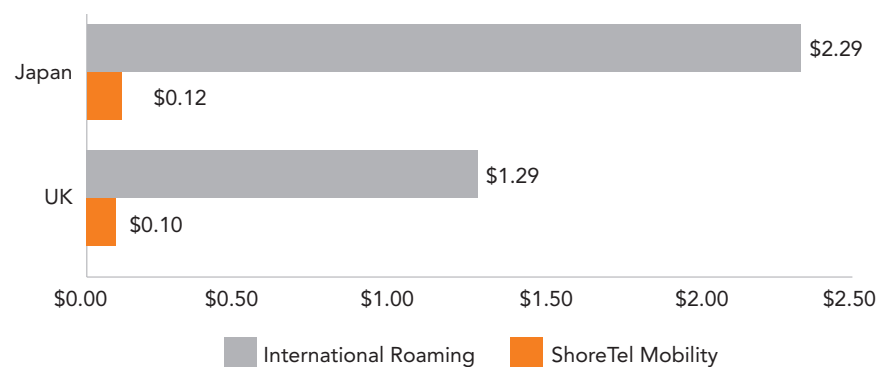*Note: Costs derived from major US cellular carrier's online pricing sheet at time of print.*

Chart 2 - International roaming cost per minute to Japan and UK, with and without ShoreTel Mobility

5. How ShoreTel Mobility works

Figure 1 below provides a high level view of how the ShoreTel Mobility solution integrates into a customer's UC infrastructure.

Wi-Fi Access from:
- Home networks
- Hotel Wi-Fi
- Hotspots

Ext. 1010

ShoreTel Mobility Remote Voice
SSL/AES-256 Encrypted

Internet

DMZ

PBX Dialplan Additions:
DiD #1 - Cell Access
DiD #2 - Handover
DiD #3 - Reverse Dial

SIP Trunk   SIP Trunk

ShoreTel
Mobility
Router

PSTN

SIP Line

"Dial via Office"
cell call

SIP Line
Connections

Corporate
Wi-Fi
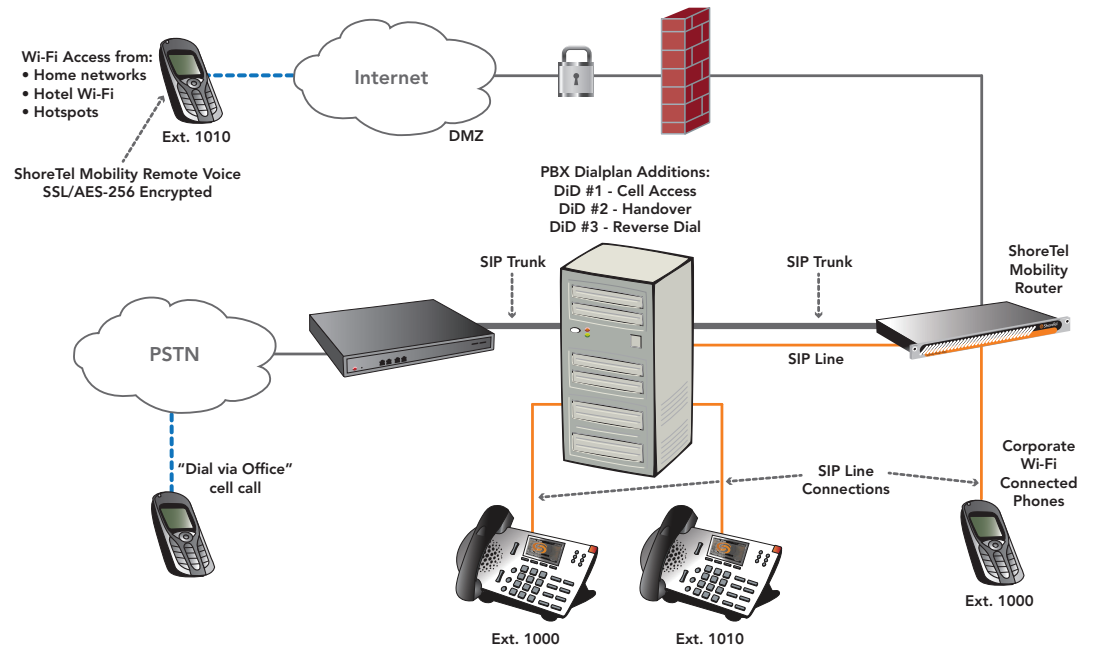Connected
Phones

Ext. 1000   Ext. 1010

Ext. 1000

Figure 1 - ShoreTel Mobility integrated architecture

The ShoreTel Mobility Router integrates with the PBX via session initiation protocol (SIP). A SIP trunk is required along with two dedicated direct inward dial (DID) lines per appliance. Note that the DIDs are needed per appliance and NOT per user. In addition, SIP line connections are used by the ShoreTel Mobility Router to integrate the mobile phone into the PBX. These SIP line connects appear as shared-line appearances or bridged-line appearances on the PBX.

VoIP calls made on the mobile phone via the Wi-Fi network are simple and straightforward. The mobile phone is SIP registered to the Mobility Router, and the Mobility Router, acting effectively as a SIP back-to-back user agent (B2BUA), is registered to the PBX. When the mobile phone places a VoIP/SIP call, the ShoreTel Mobility Router signals that call via the PBX using the shared/bridged-line appearance.

All call routing is handled by the PBX, using the PBX's existing route plan. This allows calls from mobile phones to be treated as if they are being placed from the user's desk phone. All existing call routing and toll bypass policies apply to the mobile phone.

Cellular network calls made on the mobile phone can anchor, or route through the enterprise PBX. This is commonly referred to as "Dial via Office". With the ShoreTel Mobility solution, policies dictate whether the cell calls are anchored or not. Cell calls are redirected into one of the dedicated DIDs mentioned above. This anchors the cellular call leg, and the mobile phone then signals the destination number to dial. Just as with the VoWLAN call, or a call from the desk phone, the PBX routes this call using existing route plans and toll bypass policies to the PSTN.

ShoreTel Mobility also supports voice over WLAN (VoWLAN) calls from outside the firewall using a feature called Secure Remote Voice (SRV). SRV allows the mobile phone to connect to Wi-Fi on home networks, hotel networks, and hotspot networks. In order to ensure the call is secure, the ShoreTel solution SSL encrypts the call using X.509 certificate authentication and AES-128 or AES-256 encryption. Note that this only secures ShoreTel VoIP and UC applications. Non-ShoreTel applications, such as the Web browser, are not redirected through the secure SSL tunnel. Once the SSL tunnel is established, the ShoreTel Mobility client SIP registers and can send and receive calls over Wi-Fi.

6. Proven cost savings

International roamer

An international roamer frequently communicates with foreign offices and tends to make at least one overseas trip a month. Users tend to make calls on their smartphones due to time differences and ease of use. Call volume is heavy due to the mobile nature of the international roamer.

International direct dialing 8%

International roaming 47%

Domestic dialing 45%

Chart 3 – Typical international roamer cellular spend

The following table shows the current cellular spend and applicable savings with ShoreTel Mobility for an International roamer who flies to Osaka twice a month and makes calls back the U.S. and to local Japanese numbers. The calls to the U.S. occur mostly either early in the morning or late in the evening. Due to the timing of these calls they mostly occur from a Wi-Fi-enabled hotel room. While in the U.S., this user makes calls to overseas offices to schedule meetings, follow up, and to plan a trip. The domestic cellular use averages about 800 min, and calls are made on the go, fitting things into a hectic schedule.

International roamers experience the most dramatic cost savings through the ShoreTel Mobility solution. Conservative calculations indicate that deploying ShoreTel Mobility for this international roamer may save as much as $950 a month, a 75 percent saving.
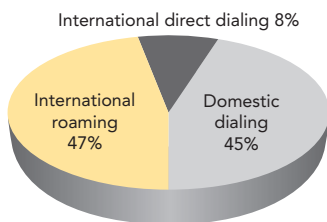
With cellular only				With ShoreTel Mobility	
Type of call	Minutes used	Cost per minute	Total	Cost per minute	Total
International roaming	700	$2.00 (350 minutes in Asia) + $1.00 (350 minutes in EU)	$1050	$0 (560 minutes on international wi-fi) + $2.00 (70 minutes in Asia) + $1.00 (70 minutes in EU)	$210
Domestic dialing	800	Included in plan	$0	included in plan	$0
International direct dialing	120	$1	$120	$0.05	$6
Base unlimited plan	–	–	$99	–	$99
Total	**–**	**–**	**$1269**	**–**	**$315**

Table 1 – International roamer's current cellular spend and applicable savings with ShoreTel Mobility

Sales or executive

Sales and executive users tend to have a heavy domestic travel schedule, and make a significant amount of international calls to other offices.
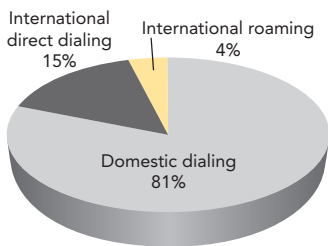
The following table shows the current cellular spend and applicable savings with ShoreTel Mobility for a sales executive who does not travel overseas, but still makes a variety of international calls to develop and cultivate relationships. The domestic cellular use is high due to the mobile nature and preference for using a smartphone. The executive relies on a smartphone to keep life organized. It is home to contacts, calendar, email, reminders, notes, etc. The convenience of being able to click 'call' from an email or calendar appointment is significant when compared to having to turn a PC on, log in, then transcribe a phone number from a screen then dial a desk phone.

The ShoreTel Mobility Router allows sales and executives to realize both productivity and cost savings by seamlessly shifting their international direct dial calls to international VoIP calls. In the example above, the executive could save over $200 a month just on international direct dial, a 66 percent saving.

International direct dialing 15%
International roaming 4%
Domestic dialing 81%

Chart 4 – Typical sales/ executive cellular spend

With cellular only				With ShoreTel Mobility	
Type of call	Minutes used	Cost per minute	Total	Cost per minute	Total
International roaming	0	–	$0	–	$0
Domestic dialing	1500	Included in plan	$0	included in plan	$0
International direct dialing	225	$1	$225	$0.05	$12
Base unlimited plan	–	–	$99	–	$99
Total	**–**	**–**	**$324**	**–**	**$111**

Table 2 – Sales executive's current cellular spend and applicable savings with ShoreTel Mobility
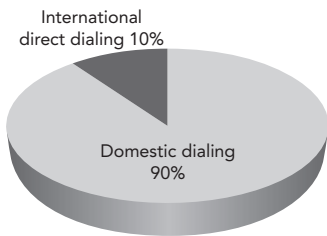
Chart 5 – Typical domestic corridor warrior cellular spend

Domestic corridor warriors

Corridor warriors are the typical knowledge workers. Connectivity is important for this group, colleagues rely on them for information and customers expect a prompt response. Calls directly to the cell phone often suffer from reception problems; this is particularly true in large office buildings. Missed calls can mean reduced productivity, or worse—a missed opportunity.

The following table shows the current cellular spend and applicable savings with ShoreTel Mobility for a for a domestic corridor warrior whose travel is minimal but is often away from the desk. This user makes few international and rarely roams away from the office.

With cellular only				With ShoreTel Mobility	
Type of call	Minutes used	Cost per minute	Total	Cost per minute	Total
International roaming	0	–	$0	–	$0
Domestic dialing	800	Included in plan	$0	included in plan	$0
International direct dialing	80	$1	$80	$0.05	$4
Base unlimited plan	–	–	$60	–	$60
Total	**–**	**–**	**$140**	**–**	**$64**

Table 3 – Corridor warrior's current cellular spend and applicable savings with ShoreTel Mobility

The ShoreTel Mobility Router can offload cellular minutes onto Wi-Fi by leveraging the existing enterprise grade Wi-Fi and also improve call reception quality and call quality. By leveraging their IP telephony systems while making cellular calls, the corridor warrior can save up to 54 percent.

Additional savings can be realized through the reduction of desk phones, increased productivity, and reduction in cellular minutes required.

Summary

The ShoreTel Mobility solution can dramatically reduce the most expensive cellular bills by effectively shifting cellular minutes to Wi-Fi minutes. As shown in the above examples, leveraging dual-mode smartphones and WLAN networks is a viable way to reduce enterprise cellular spend.

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

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