What Does It Have That Others Don't?

Many of the features listed previously, such as 3D graphics and native database support, are also available in other mobile SDKs. Here are some of the unique features that set Android apart:

❑ **Google Map Application**s Google Maps for Mobile has been hugely popular, and Android offers a Google Map as an atomic, reusable control for use in your applications. The MapView widget lets you display, manipulate, and annotate a Google Map within your Activities to build map-based applications using the familiar Google Maps interface.

❑ **Background Services and Application**s Background services let you create applications that use an event-driven model, working silently while other applications are being used or while your mobile sits ignored until it rings, fl ashes, or vibrates to get your attention. Maybe it's an application that tracks the stock market, alerting you to signifi cant changes in your portfolio, or a service that changes your ring tone or volume depending on your current location, the time of day, and the identity of the caller.

❑ **Shared Data and Interprocess Communication** Using Intents and Content Providers, Android lets your applications exchange messages, perform processing, and share data. You can also use these mechanisms to leverage the data and functionality provided by the native

Android applications. To mitigate the risks of such an open strategy, each application's process, data storage, and fi les are private unless explicitly shared with other applications using a full permission-based security mechanism detailed in Chapter 11.

❑ **All Applications Are Created Equal** Android doesn't differentiate between native applications and those developed by third parties. This gives consumers unprecedented power to change the look and feel of their devices by letting them completely replace every native application

with a third-party alternative that has access to the same underlying data and hardware. Every rule needs an exception and this one has two. The "unlock" and "in-call experience" screens can not be replaced in the initial SDK release.

❑ **P2P Interdevice Application Messaging** Android offers peer-to-peer messaging that supports presence, instant messaging, and interdevice/interapplication communication.