

Santosh Xavier delves into mobile device platforms

Consumers these days do a lot more with their mobile phones than just make and receive calls and send text messages. They play games, listen to music, take photos, e-mail, watch TV and a whole lot more. They view their phones not as communication tools but as electronic lifestyle devices, creating a demand for new features every few months. Device manufacturers, therefore, have to launch a multitude of models each year, meaning that the handset-development life cycle has been reduced to between four and six months.

But what is involved in that life cycle? The focus on features essentially means that integration is market-driven and top-down, starting with identifying the market requirements, defining the look and feel of the device, considering hardware and software requirements, and identifying the platform and components.

The handset approach differs from that of the PC market, where integration is centered on top of the platform (the hardware and operating system), since it is a shared device sold on the basis of the platform specifications.

In the phone and PC industries, the use of software in component form is high. The difference is that, in the PC environment, the components are at the application level and the integration is primarily done by the user, or from the bottom up. In the development of a phone, the core components are not available to end-users and therefore have to be integrated in the development stage itself.

The development of the phone starts after the hardware and software requirements are identified. A typical handset comprises several layers. An operating system sits on the hardware, and on top of that is the abstraction layer (which includes the device drivers), services layer (featuring codecs and stacks), application layers (which include browsers, messaging platforms and PIM functions) and a shell layer. The platform of these layers acts as a common base – akin to a layer of glue – and makes it easier to integrate third-party components.

Any new platform takes 18 to 20 months to develop and mature, and from that platform a number of device models can be developed. The first model, called the base model, takes between six and eight months to develop and launch. Models developed subsequent to the original platform, called derivative models, take four to six months from inception to launch.

Tier 1 companies tend to develop their own platforms and components, leading to a tight integration. Ideally, they have integrated platforms with the components identified well before a model-development cycle starts. Also, key decisions influencing performance are made well in advance, and service-level agreements for each component are signed.

The situation for tier 2 players is somewhat different. Platforms and components are generally acquired from third-party vendors. The developer then performs so-called gray-box integration to enable it to derive maximum benefit from each component and ensure that the components work together as a whole.

Another challenge faced in this process is coping with component redundancy, which arises because technology changes have taken place, vendors have discontinued support or components have been replaced by the OS or platform provider. More important, component firms need to understand product road maps, key market drivers, cost escalations and scope for customization.

Partners are key

The challenges are further intensified by the need to manage resource valleys and peaks because of the seasonal nature of mobile phone demand. The effects of seasonality are even more profound given that the device developer is likely to be managing the integration of two or three models concurrently.

Tier 1 players, which have complete ownership of components, face fewer difficulties than tier 2 vendors, which must manage the evolutionary road map and corrective maintenance of components. Smaller vendors have less control over the various parts they integrate and depend heavily on third-party component manufacturers. It is critical for tier 2 handset firms to identify which companies can fulfill their requirements.

Many tier 2 vendors employ consultants and outsourcing partners that already have knowledge of the relevant platform, framework and components. Outsourcing partners can help in controlling costs, quality and time-to-market while also offering flexibility and scale advantages.

But it is critical that these partners be identified based on their understanding of the handset ecosystem and evolving standards and on their prior experience and knowledge of integrating the specified set of platforms and components. The firms should also be able to provide the systems and process to maintain a tight control on the integration activities.

The emphasis should be on identifying key long-term outsourcing partners that seamlessly integrate the components while ensuring that product knowledge is retained in subsequent integration cycles. The right outsourcing partner can help address the integration challenges arising out of components acquired from various vendors.

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