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Telecommunications

Living in a device-centric world

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The current market focus on the "three screens" of the consumer—a television in your family room, a PC on your desk and a mobile phone in your pocket—is a new, device-centric way of seeing the digital services ecosystem. It's a view with the potential to dramatically change the way in which people work, seek out entertainment and interact with one another.

The idea is that each of our screens would have full access to all our digital assets—files, content, applications and so forth. We could view the same content from any screen or, even better, we could use whatever screen was appropriate for the content and for our needs, based on where we were and what we wanted to do. Unless we were cast away on a desert island, we would probably not read a novel on a wristwatch-sized screen—but the idea is that we could if we wanted to.

A device-centric world presents both challenges and opportunities to the industry players involved. Some analysts have predicted that services that cross the three screens of the consumer—at work, on the road and in the digital home—will soon be a multitrillion-dollar business. However, the technology architecture that brings the three screens to life is complex. It's important to understand both the technological and business changes occurring today if a company is to take advantage of device-centric opportunities to achieve and sustain high performance.

Big change: Trivergence and tridgets

The communications, high-tech and media industries are currently struggling to get out in front of a wave of change that may be unprecedented. Competition has always been fierce, but at least the marketplace boundaries were clear. No more. Today, software companies are creating development platforms for wireless communications services. We can buy a phone from a company better known for its airline service. Content companies look like high-tech companies, which look like phone companies. It's not a marketplace; it's a rugby scrum.

As the various players try to move the ball forward, all are looking for surer footing. One place to begin is with a better understanding of the device architecture that will make three-screen services possible. Accenture calls this emerging architecture "trivergence," because its distinctive character is in using the network to separate (1) the physical device from (2) its data and (3) its controls.

To appreciate the importance of the trivergence architecture, compare a portable CD music player with an Apple iPod. The CD player has mechanisms inside that access the data, translate it into sound and send that to your headphones. On the unit itself are various controls that let you choose music tracks, adjust the volume and so forth. Everything is contained within the device.

The iPod, on the other hand, is dependent on the network for its data and controls. You download data—your media files—through a network, and then you control and manipulate those files using a web-based, soft-panel application. Without the network, the iPod is just an expensive paperweight. Accenture refers to these trivergent devices as "tridgets," and more of them are entering the marketplace almost every day. Apple has very successfully demonstrated that devices, data and controls—when fully networked—can work together

to produce a compelling user experience.

But the tridget opportunity is too large to be dominated by any one company. David Clark, one of the architects of the original Internet and now a professor at Massachusetts Institute of Technology, has predicted that *1 trillion* networked devices will be in the marketplace in less than 20 years. If this prediction proves accurate, then a dizzying array of things—from children's toys to light bulbs to golf balls—will evolve into tridgets.

The right screen for the right task

The fact that any screen will be able to display almost any content or data does not mean that some devices aren't better at certain tasks than others. For example, if you want to read a novel electronically, the new Amazon Kindle, which is a tridget engineered from the ground up, allows you to read a wide variety of books on a screen significantly larger and with a better display than the one on your mobile phone.

And, sure, you can take pictures with your cellphone, but people are still buying standalone cameras in record numbers. In fact, the digital-camera market is growing at about 15 percent per year—perhaps in part because the camera has better photo manipulation controls than a phone, something especially important as consumers use networks and websites to organize and share photos. Different devices serve different purposes, even if they look the same in the spec sheets.

If the idea of three screens seems like a radical change, bear in mind that it doesn't begin to capture the potential complexity. Any one type of screen might well integrate with others in innovative combinations. It would not be surprising if Amazon built a communications capability into its book reader, or if Canon incorporated a media viewer into its camera. At some point, people will be interacting with and through dozens of screens as they go about their daily lives, as well as hundreds of intelligent objects or tridgets that may or may not have a screen.

Opportunities and challenges

Tridgets are a great opportunity for the communications industry. They pose the sort of scalability challenge that can best be addressed by the companies that own the network infrastructure and have the power to optimize it. Here are some specific industry opportunities and challenges when it come to supporting the flow of data and communications across the three screens and, eventually, across all digital devices.

Content delivery networks

Traditionally, network operators have left content delivery to third parties such as Akamai and Limelight. However, these companies are motivated to optimize their own costs, which do not necessarily reflect the underlying network costs. In fact, Accenture studies show that the carriers are losing hundreds of millions of dollars annually on these services. If only to protect their own financial viability, network operators may be forced to bring content delivery in-house and, in turn, to develop an architecture that will revolutionize content delivery.

Open billing systems

It is no accident that much of the talk lately has been about advertiser-supported offerings. One of the reasons that companies such as Google, Microsoft and Yahoo have gravitated toward an advertising-based business model is that they have no easy way to bill the end-user. But some services, such as specialized information services and mobile banking applications, lend themselves more readily to a "user pays" business model, and this is an area in which the network operators could shine. They already have highly sophisticated billing systems; now they have an opportunity to extend those systems to additional players—with the proper security, of course.

Customer support

Delivering a great customer experience is another area in which the network operators have extensive facilities that could be opened up to other companies. Accenture's market research tells us that device, Internet, software and content companies feel constrained in their efforts by a lack of effective customer service capabilities. They recognize that more complex products and services demand more advanced customer support, but such support lies outside of their core capabilities. Accenture believes that companies have the opportunity to transform customer care into something that is not merely a cost center but also a revenue center. By incorporating customer relationship management processes and technologies, call center outsourcing, customer insight and web support, companies could offer a wide range of services to enterprises and to consumers in a digital home.

In addition to these opportunities, companies face some challenges in a device-centric world.

Serving the emerging world

If shortcomings in billing and customer support are problems in the developed world, they become almost impossible obstacles in developing economies. In the current state of affairs, it is extremely difficult for a device, Internet, software or content company to orchestrate a global rollout. There are simply too few resources and too many points of contact. Network operators will need to develop robust strategies for extending their developed-world sales channels into the emerging world.

Creating an effective development environment

Part and parcel of leveraging carrier resources such as content delivery, billing and customer support is attracting software developers. Network operators have sometimes been thought of as being difficult to work with, and many of their development tools have been off-limits to outsiders. New development platforms such as Google's Android are now coming on the scene to facilitate interaction with the communications network.

These opportunities and challenges are being driven by a trivergence architecture and the tridgets it supports. This is potentially a very large market. If 1 trillion tridgets will soon be available, and if one makes the modest assumption that each tridget will generate $5 per year in revenue from its purchase price and associated services, that translates into a $5 trillion business. For a visionary company, the device-centric world is a great opportunity to develop compelling new services that drive high performance.

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