

# Vertical Markets

*Vertical markets offer the possibility to open doors to activity sectors with less competition - a major advantage. This way a brand can be built easier and faster within a niche industry.*

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## Content

Vertical Market: Definition	2
Corporate Mobility	3
Supply-Chain Management	6
The Market Evolution and Complexity of e-Commerce / e-Business Development	10
Conclusions	11

# Vertical Market: Definition

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**A vertical market is a group of businesses, organizations or enterprises which are viewed as a classification of the larger group of all businesses, organizations or enterprises on the basis of the unique and specific nature of the products or services they sell on the markets of the world or of the activities in which they are engaged.**

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The activities of participants within any given vertical market are typically similar in that they are shared, copied, or cooperative. The activities of participants in vertical markets are typically competitive due to the overlapping focus of the products and services that are provided to the public by the participants.

A major advantage of the vertical market is that it has the possibility to open doors to some activity sectors with less competition. The notoriety of a brand can be easier to build and faster to achieve in a specific industry. The companies that work in a well defined economic field are given a higher degree of credibility by their counterparts, and their references, case studies or the press releases and articles will have a bigger impact. By directing the traditional methods of marketing to a niche market, new opportunities can be created. Moreover, clients are willing to pay more for an application if it's created exclusively for a single sector and also implemented by reputed companies.

According to the latest studies, the software distributors define a vertical market as a group of clients with similar needs or requirements. The software applications dedicated to provider companies are the best example. On the vertical market, a company can cross from doing "full services" to "being efficient". An exhaustive approach to the market can deliver a big number of prospects, numerous press articles, and some good ideas for identifying weak points and possibilities for growth. A complete services and products portfolio can be a good indicator of the success, but a final analysis only takes into account the balance between the finished projects and the revenue.

The vertical market software is an application especially created for a specific industry (banking, insurance, construction). The ideal software for the vertical markets stores the information common for the entire network in a source code (for speed and simplicity). It has tables that can be configured (for flexibility) for all the variables created by the organizations or companies in the system.

# Corporate Mobility

The corporate mobility is yet another system - next to CMS, CRM and ERP (enterprise resource planning) - created for vertical markets.

The corporate mobility is one of the fastest-growing segments within the overall IT market. Specialists are estimating the global corporate mobility market at \$16.0 billion in 2004 and they predict that it will reach \$23.2 billion by 2008, growing by 10% a year.

Corporate mobility solutions are defined as mobile technology platforms which allow

for applications that process transactions in real time. The transactions may be processed in real-time, intermittently or in batch-mode. These systems include mobile computing devices, application software, connectivity solutions (wireless and wired) and connectivity infrastructure. The enterprise can be a retail store, a manufacturing plant, a distribution facility, or a hospital.

Enterprise Mobility System Growth by Vertical Market (2004-2008 CAGR)	
DSD/Route Accounting	15.5%
Field Service/Sales	9.2%
Government	7.3%
Health Care	14.8%
Manufacturing/Assembly	8.7%
Professional Services	13.2%
Retail In-Store	7.4%
Transportation/Logistics	14.1%

Figure 1

**Worldwide Shipment Forecast for Enterprise Mobility Solutions  
Segmented by Vertical Market**

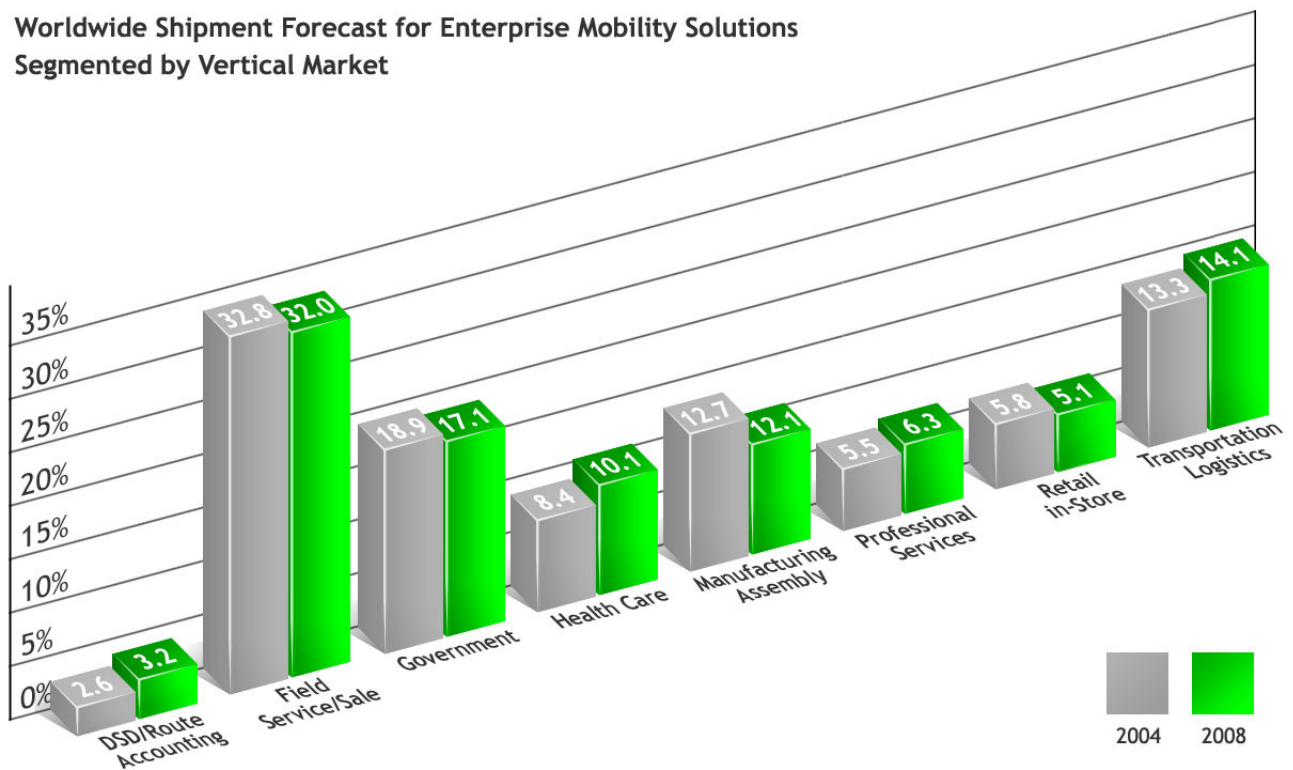


Figure 2

Deployments of corporate mobility solutions have evolved considerably. No longer are solutions being installed as point solutions or islands of operation, but rather they're being more tightly interwoven within enterprise IT fabrics. Driven by the perfect storm of technology maturity, standards acceptance and increased economic stability, the market is poised for long-term growth.

Although corporate mobility applications are expected to continue to be tied to specific vertical markets, corporations are taking a more centralized approach to system selection, acquisition and deployment. Moreover, enterprises are beginning to realize that enterprise mobility is more than just wireless email. The following table describes some of the major developments impacting the enterprise mobility market over the past 10 years.

Market Characteristics	1994	2004
Size and Growth	<ul style="list-style-type: none"> <li>- \$5 billion hardware device, software and service market</li> <li>- Average growth of 15-20% year over year</li> </ul>	<ul style="list-style-type: none"> <li>- \$16 billion hardware device, software and service market</li> <li>- Average growth of 10% year over year</li> </ul>
Industry Value Chain	<ul style="list-style-type: none"> <li>- Highly fragmented with limited collaboration</li> <li>- Primary source of value-add on device suppliers developing customized solutions</li> <li>- Lack of standard HW components and modular design platforms</li> <li>- Proprietary communications, operating systems (OS) and applications</li> <li>- Limited scalability to system design</li> </ul>	<ul style="list-style-type: none"> <li>- Standardized device platforms: OS, communication, mobile SW stack</li> <li>- More integrated value-chain including component suppliers, device suppliers and ODM's, OS suppliers, application platforms and development tools</li> <li>- Increased role of carriers, commercial grade device suppliers and ODM's</li> </ul>
Markets and Applications	<ul style="list-style-type: none"> <li>- Retail, distribution and transportation</li> <li>- Core material management/supply chain applications</li> <li>- Primary solution was terminal emulation; limited data content</li> </ul>	<ul style="list-style-type: none"> <li>- Enterprise-wide</li> <li>- Core growth in field force automation, mobile CRM and mobilizing other enterprise applications</li> <li>- Increased application functionality and data processing requirements - closer integration with enterprise systems.</li> </ul>
Distribution Channel	<ul style="list-style-type: none"> <li>- Emphasis on direct from device supplier to end user</li> <li>- Limited indirect channel infrastructure - fragmented group of small application - focused integrators</li> </ul>	<ul style="list-style-type: none"> <li>- Balance of direct and indirect sales channels</li> <li>- Emergence of strong OEM/ODM community</li> <li>- Tiered, value-based approach to indirect channel including broad enterprise integrators, value added dealers, ISVs and application - specific integrators</li> <li>- Increased participation of traditional NW VARs</li> </ul>
Device Selection Criteria	<ul style="list-style-type: none"> <li>- Functionality, ease of use and durability</li> <li>- Primarily key-based input</li> </ul>	<ul style="list-style-type: none"> <li>- Price increasingly decisive device selection criterion</li> <li>- Mix of rugged and commercial grade solutions</li> <li>- Additional criteria include system scalability, legacy application support and integration modules</li> <li>- Mixed emphasis on TCO and ROI</li> <li>- Decrease in brand loyalty</li> <li>- Multiple I/O options including pen/touch, voice, scanning, RFID and keypads</li> </ul>
Vendor Selection Criteria	<ul style="list-style-type: none"> <li>- Mostly application-specific rugged mobile devices</li> <li>- Ability to custom develop solutions</li> <li>- Little switching among vendors once initial system installed</li> </ul>	<ul style="list-style-type: none"> <li>- Global support capabilities</li> <li>- Application/vertical market knowledge and position</li> <li>- Broad I/O configuration options</li> <li>- Multi-radio wireless support</li> </ul>
System Architecture	<ul style="list-style-type: none"> <li>- Stand-alone solutions</li> </ul>	<ul style="list-style-type: none"> <li>- Integrated within enterprise systems including ERP, WMS, SCE, CRM, MRP, POS, etc</li> <li>- Increased demand for centralized system management, maintenance and deployment tools</li> <li>- Broad wireless adoption - moving towards seamless roaming among WLAN and WWAN</li> </ul>
Technical Standards	<ul style="list-style-type: none"> <li>- Few relevant technical standards</li> </ul>	<ul style="list-style-type: none"> <li>- Wireless communication standards: 802.11b/g/a; BlueTooth; GSM/GPRS; CDMA; etc.</li> <li>- Standard OS development: Windows Mobile; CE.net; Palm, Symbian</li> <li>- NEMA and IP rating ruggedization standards.</li> </ul>



# Supply-Chain Management

One of the most used solutions for vertical markets is the supply-chain management solution.

A supply-chain is an avenue where inter-organizational flows of material and information, as well as financial transactions take place. It is called a "chain" because traditionally all the flows were linear, starting from the suppliers, through manufacturers, distributors and ending with the final consumers.

The focus of the chain partners was managing the material flow - completing the process from inputs to products and delivering them to customers smoothly. Therefore, supply-chain management was very often equivalent to logistics management, mainly dealing with materials replenishment, warehousing and shipping.

As the Internet is a superior channel of communication, the old chainlike buyer-supplier relationship has been changed into a supply network where suppliers, manufacturers, intermediaries and customers are all connected and are able to interact with others directly (see figure 3). The image below illustrates the fact that the new supply-chain management shifts its focus from the old material flow management to a combined flow of material, information and financials. The supply network is a critical component of any e-business strategy, such as build-to-order, driving enterprises toward e-business.

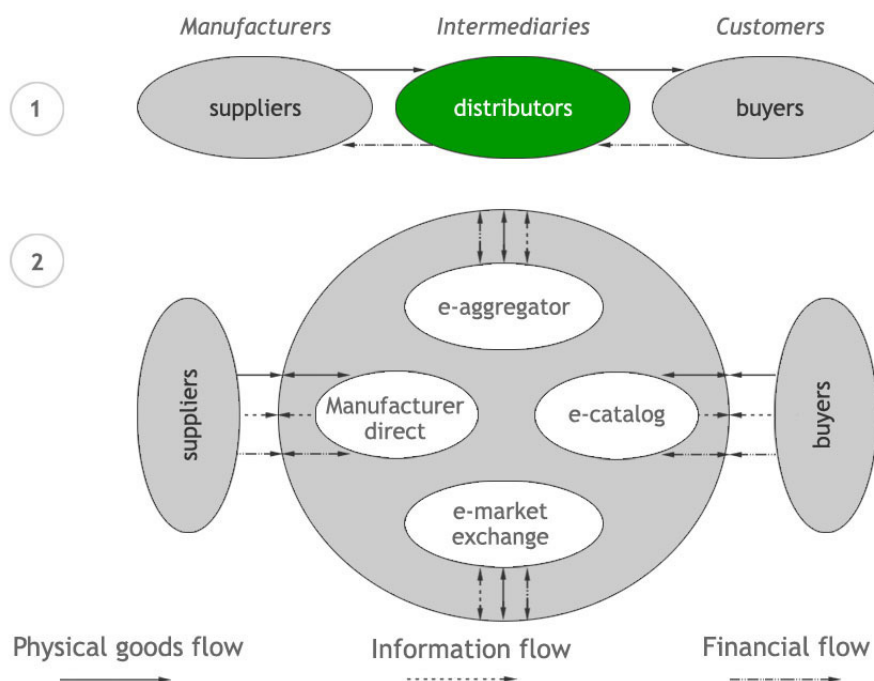



Figure 3



This new supply-chain management aims to achieve two objectives:

- (1) Seamless coordination among chain partners and
- (2) Real-time collaboration.

Information sharing has always been the key to coordination. With the advancement of communication technologies, such as Intranet, Extranet, electronic data interchange (EDI) and virtual private network (VPN), companies have already started to coordinate their purchasing, production and distribution activities to reduce cycle times and cut operational costs. Vendor-Managed-Inventory (VMI) and Just-In-Time (JIT) are two typical examples. Although there are many successful industry stories, this type of coordination was usually initiated by and limited to large corporations who had significant power over their downstream or upstream partners.

Internet-based supply-chain management creates an even wider avenue for coordination. With very little cost as compared to EDI, all supply-chain participants can receive and exchange

information on purchasing, production and shipping in real-time. Ultimately, the old static supply-chain with production forecasting and planning on retrospective data will be replaced with a responsive supply-chain: the manufacturer "knows" what the end customer wants at the time he/she orders; the same information also goes to the suppliers who immediately arrange the necessary materials and parts for the manufacturer. Then the manufacturer makes the product and fulfills the order in no time since the carrier has the shipping information and has arranged proper delivery of the product. Thus efficiency is achieved as a result of supply-chain coordination, and is reflected in the reduced inventory as well as shortened cycle times at every level.

Real-time collaboration is the most important and unique feature of Internet-based supply-chain management. Because the Internet is ubiquitous and "always on", it allows people in different geographic locations to work on the same project collaboratively to speed up the project progress and improve resource utilization.



## Integration of Customer-Facing Front-End with Enterprise-Wide Back-End Applications

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The four primary value chain activities (inbound logistics, operations, outbound logistics, and service) defined by Porter involve the interactions among three parties: the suppliers, the manufacturers and the customers. It is safe to say that although the pattern of interaction has been changed in e-Business, the value creation activities and the direction of the flow stay the same.

Since the ultimate goal of enterprises is to create value for shareholders through selling goods and services, any customer-facing front-end systems should work to make it easy for customers to select, purchase, and be serviced. Therefore, most companies have been putting a lot of effort into improving the user-friendliness and functionality of their front-end systems, to enhance the richness of communication, and create a better customer experience of e-commerce. In addition, unlike traditional channels that are usually built on proprietary networks, those applications are based on Internet technologies, ensuring the reach of products offers. Two examples are the Customer Relationship Management (CRM) application from Siebel, and the order management application from Art Technology Group.

Nevertheless, the value to the customer cannot be delivered without back-end operations.

Enterprises have been implementing enterprise resource planning (ERP) systems to integrate and optimize their internal operations, such as production, engineering, financial services and human resources. Increasingly, those enterprise systems are integrating web connections to leverage the speed and ubiquitous nature of the Internet. For example, SAP's R/3 system is Internet compatible and can be combined with other types of software under the enterprise umbrella. Moreover, application packages from PeopleSoft, JD Edwards and others are able to serve specific functional needs, such as human resource management.

At the other end of the value chain, as discussed earlier, there are also many applications, web based or non-web-based, that companies use to increase their procurement efficiency and manage the collaboration and coordination with their suppliers.

Companies like Oracle have developed applications that integrate the customer-facing front-end with enterprise-wide back-end applications, creating an e-Enterprise that stretches its virtual boundary both forward and backward to interact with its customers and suppliers directly via eCommerce activities (see figure 4).

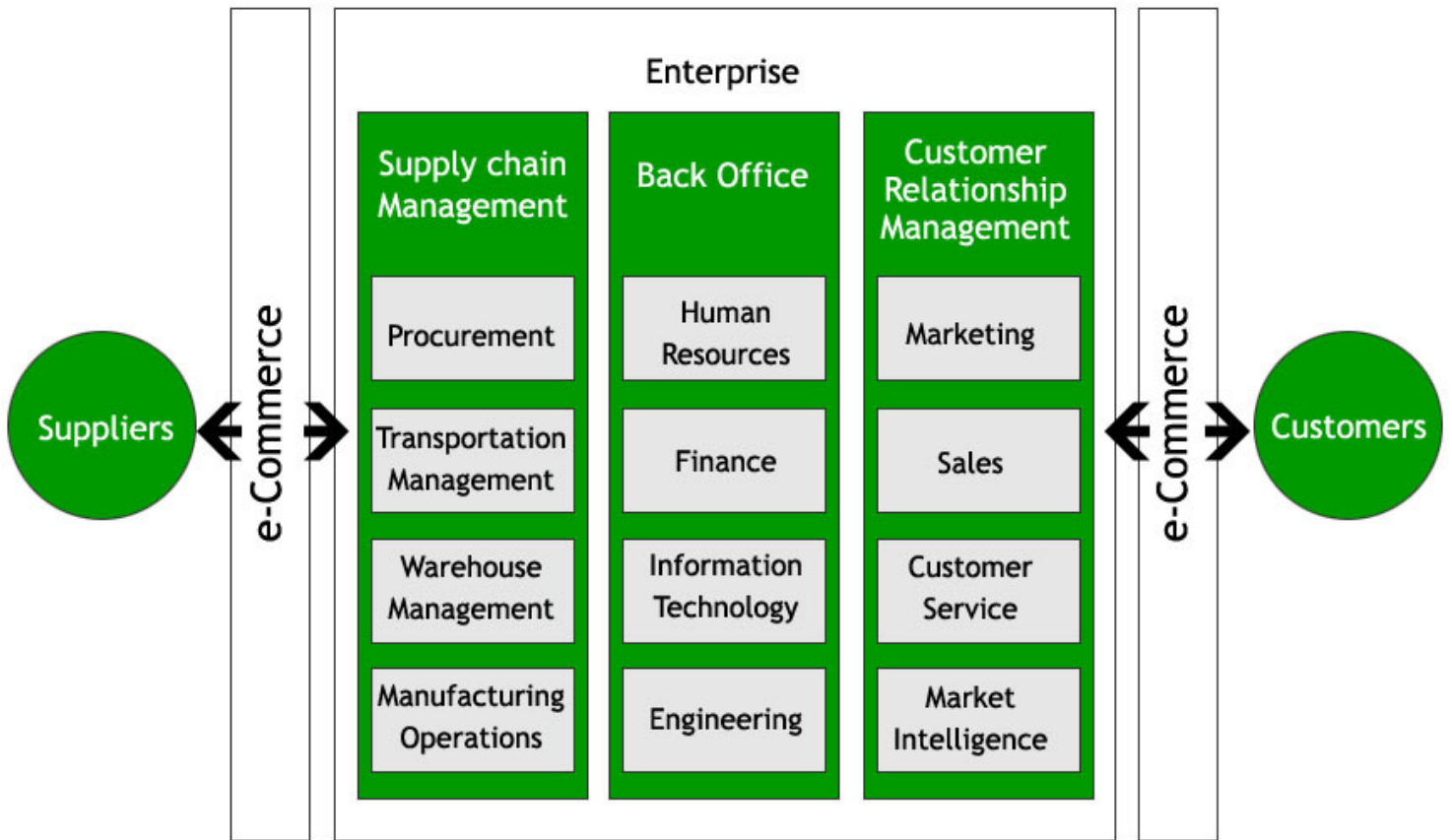


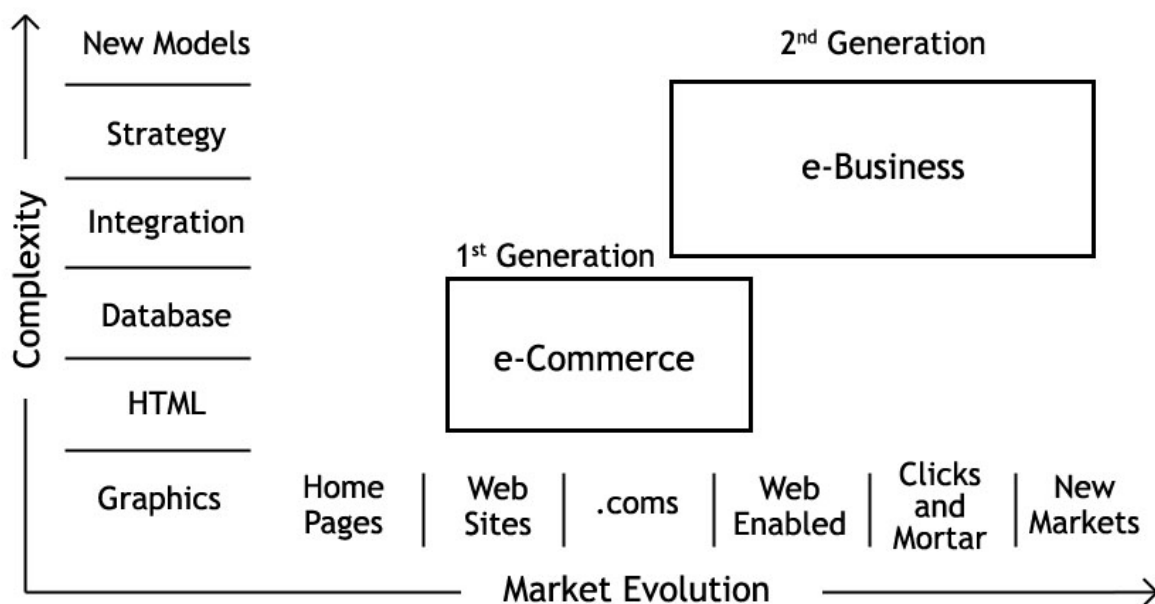
Figure 4

# The Market Evolution and Complexity of e-Commerce / e-Business Development

**E-Commerce/e-Business is creating a tremendous impact on our economy and its subsequent economic rules.**

Looking back, we see that today's e-Business is very different from the e-Commerce from just a couple of years ago. The nature of e-Commerce/e-Business is getting more and more complex as the market evolves (see figure 5). It is now widely understood that a successful e-business is built on a business model with a valid value proposition, a clearly defined e-business strategy, and an integrated information technology (IT) infrastructure

that facilitates the strategy. The venue of conducting e-Business has also been greatly expanded, especially with the growth of business-to-business (B2B) e-Commerce. From implementing individual web-based applications to transforming traditional businesses into click-and-mortar, enterprises are continuously exploring new opportunities and new markets for e-Business.



# Conclusions

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**The full potential provided by enterprise mobility solutions is only in the early phases of market awareness and development.**

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In search of the real-time information exchange and collaboration required by complex supply chains, manufacturers are finding that pre-specialized solutions may offer the boost they've been looking for. Lessons learned from past supply-chain deployments helped enterprises realize that the deep industry knowledge and scalability offered by specialized systems can be the key to streamlining a supply chain. In response, best-of-breed vendors are ramping up supply-chain offerings tailored to specific vertical markets, such as consumer packaged goods and process manufacturing. Other companies are turning to their ERP vendors for supply-chain modules that snap on to existing accounting and HR systems, and the enterprise application companies are mounting their own efforts to lasso vertical business by touting the easy integration of their products to existing back-end systems.

While mobility solutions have been deployed for several decades in specific vertical markets, most were installed as disconnected point solutions. Only now, with standardization in device platforms, maturation of wireless communication technology and true scalability of mobility solutions are enterprises beginning to take full advantage of mobile solutions. However, the next 12-18 months will be a critical period for enterprise mobility market participants as the various parties involved - including device vendors, application providers, integrators, OS vendors, mobile middleware and database vendors, and wireless carriers - converge to stake their position in this highly intricate value-chain.

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