2002 Technology Radar Screen: Key Issues in Emerging IT

The 2002 technology radar screen and resulting disruptive trends showcase the research agenda for the future of technology, business and society.

Technology and business planners are constantly challenged by the need to make assumptions about an unknowable future. Gartner’s research on the future of technology, business and society takes a broad perspective in examining IT-related trends and disruptions, and identifying the most-important changes that will result.

What are the most disruptive trends and most significant opportunities arising from emerging information technology?

If an enterprise embraces the additional risk of an emerging technology, it should seek a correspondingly higher business value from the technology. The value can be driven from within the enterprise by proactively identifying opportunities to reduce costs or increase revenue based on the appropriate adoption of emerging technology. Alternatively, the value may result from risk avoidance, in particular, the risk of being "left behind" competitors or industry norms by failing to recognize a major trend until too late.

Examples of IT trends that will lead to significant disruptions and opportunities include:

- **Wireless, wearable world**: Constantly connected employees and consumers will access communities, information and other services as they go about their business in the real world.

- **Tagging the world**: A new industry will arise where information, opinions, machine-readable descriptors and other logical "tags" about products, services, places and people are a valuable commodity distinct from the items themselves.
• **Software as services:** A majority of software will be developed and accessed as specialized components, or services, leading to new business models for accessing software functionality.

• **Help yourself:** Self-service models will evolve through seamless customer service across channels and on to "secret service" to support the automated systems where they fall short, often without the customer knowing that there is a human in the loop.

• **Staying in touch:** Low-cost radio frequency identification (RFID) and other physical tagging and tracking technologies will support "cradle to grave" applications where consumers and enterprises can continue to interact well after the transaction has occurred.

• **Office as attention:** The workplace will continue to evolve from a physical location to a virtual environment (that is, the act of paying attention to work through instant-on access).

**Which emerging and embryonic technologies should early adopters examine for competitive advantage?**

Ultra-wideband, biometrics, grid computing, quantum cryptography — even in the current economic downturn, the inevitable advance of technology continues. With these advances comes the need for planners to determine which technologies will endure and which will fail, which will create revolutions and which will be niche, as well as which ones will be mainstream within a few years and which will still be in the labs for a decade.

In addition to drill-down analysis of specific technologies, our emerging technology research creates models designed to help enterprises prioritize technology investments. For example, the Hype Cycle (see "2002 Emerging Technologies Hype Cycle: Trigger to Peak" and "2002 Emerging Technologies Hype Cycle: Trough to Plateau") provides an educational tool for showing graphically how technologies move along the path from overenthusiasm, through inevitable disillusionment, and on to eventual productivity.

For an internal planning tool, a technology radar screen (see Figure 1) provides a means to prioritize technologies along key dimensions to drive and support investment decisions (see "Emerging Technologies: From Tracking to Evaluation").
How will IT transform specific industries, business functions and market processes in the next five to 10 years?

An enterprise’s business priorities are based on enduring factors — such as industry, culture and core competencies — and on constantly varying factors, such as the state of the economy, the political environment and events within the IT industry. Not only must technologists understand and align with these business objectives, but they must increasingly expect to influence the direction of the enterprise by helping business planners understand the growing impact that technology will have in shaping business models and processes (see Figure 2).
Our research agenda examines the key IT and related trends for specific industries (see "Emerging Technologies Can Help Insurers Improve Service" and "Gartner's Top 10 Healthcare IT/Business Issues for 2002") and business functions (see "E-Service Predictions for 2002").

We also focus on case studies of early adopters (see "Schwab ‘Phrases’ a Different Question"), noting that technology leadership may arise from enterprises not always associated with leading-edge behavior (for example, government's strong requirements for secure wireless transmission and healthcare's pioneering efforts in protecting patient information).