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## Riding the new tech wave

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If patterns of history indeed repeat themselves, then it's out there: The "next big thing" - the new social and economic phenomenon that, in more ebullient times, technology boosters called a killer app.

That should hearten big technology, consumer electronics and telecoms companies as the sector starts to accelerate out of a long slump. But history also teaches that big tech companies are dreadful at predicting exactly what is going to take off.

To cite the most classic case: Twenty years ago, when IBM created an independent unit to speedily develop a personal computer, planners predicted fewer than 350,000 units would be sold, and only to hobbyists and engineers. How could they know that spreadsheet software would turn the little ivory-coloured box they'd cobbled together into a powerful business tool?

In the 1980s Xerox made breakthroughs in local area networks but later watched 3Com and others exploit the potential. In the 1990s no large technology company had any inkling of what Amazon and eBay would do with e-commerce. The rare exceptions were surefooted companies such as Hewlett-Packard and Dell, which cashed in on their focused developmental work in laser printers and build-to-order PCs.

For today's major players, then, the trick to profiting in the building tech upswing is to understand much better the critical factors that lead to "tipping." How do tech trends suddenly coalesce into a vast new market such

as PCs or escape into the vapours like music file-sharing? A good example occurred in 1997 when there was an apparent abrupt demand for enterprise resource planning software. Actually, developers had been quietly working on ERP code for years. A similar "turbo lag" seemed on display in Yahoo's recent fourth-quarter results. Explaining its 62 per cent earnings rise, the company said advertisers liked new online technologies that instantly link targeted ads to users' search results.

The kind of discipline shown by Yahoo is never easy, especially these days, when the notion of a killer app is in bad odour. Indeed, some observers don't see anything much on the tech horizon.

We beg to differ. While we see no new tech bubble soon, we expect significant upturns from such areas as digital cameras, instant messaging, blade servers that will be able to act like a PC on a card, storage area networks that hold and zap massive amounts of data among devices, and multi-media message services that will soon allow users to send text, images, video, and sound between mobile phones or personal digital assistants, to name a few.

Every one of these technologies will tip within the next two years. Some, such as the amazing spread of digital cameras, will have a dramatic affect on the sector's revenues. Others, such as the rapid advent of the Linux "freeware" operating system, will help generate growth organically - much as the TCP/IP protocols allowed the sending of messages over the internet and may, before the end of the decade, enable widespread

net-based telephony.

Our reading of history shows us that technology companies have stayed the course during the periodic lulls between killer apps in three ways: First, winners have always paid attention to the wish lists of chief information officers. Their buying decisions are an early indicator of tipping. In a Merrill Lynch survey of 50 CIOs, 26 per cent said they were evaluating internet phone solutions, while 19 per cent are looking into wireless local area networks for new speed and flexibility in connecting their employees and partners. While these development efforts, called VoIP and W-Lan, are pretty much unpronounceable, they look like solid business opportunities for tech firms doing the groundwork and will become offerings of service providers.

Second, leading technology companies continue to invest in next-generation devices. In the early 1990s, when the economy last softened, Intel invested heavily in both R&D and new chip-fabricating plants, building five at more than \$1bn each. Intel had been burned in the 1980s downturn when it curtailed R&D and saw Japanese makers eventually steal its former D-Ram chip business. Intel's action produced the Pentium micro-processor and the greatest earnings stretch in Intel's history. Intel's at it again, betting that greater processing power will enable what it sees as a new era of web services - in which disparate business-to-business hardware will automatically interact over the net in new logistics chains - thanks to more new software standards with exotic names like XML, Soap, and UDDL. We see web services tipping in

2007. Presaging all this, Intel recently reported that profits more than doubled on a 22 per cent gain in revenue, and said revenue from chips for mobile devices rose 45 per cent in the quarter.

Third, the tech leaders keep pushing new products out the door. For example, part of Apple Computer's 36 per cent quarterly rise in revenue, announced recently, came from strong Christmas sales of its new iPod music player. Thus, another leading indicator is what is on the radar of such contract suppliers as Acer and Flextronics. They're inherently forward-thinking because they're now tooling up to manufacture the next generation of all the big players' products, such as Microsoft's Xbox, Palm's handhelds, Ericsson's phones and HP's printers. Indeed, Flextronics has added nearly 1,000 designers in recent months not only to jumpstart the flow of new high-tech gadgets but improve margins by moving into value-added design services.

To apply the lessons of the past, technology companies need to sharpen their focus, manage costs, and aim for the emerging-technology profit pools that look most promising. They must steer between build-it-and-they-will-come exuberance and the overcautiousness of simply providing low-margin technology services.

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