How IBM Is 'Incubating' Growth Opportunities

IBM's investors expect CEO Sam Palmisano to invest to generate growth. IBM's response is a management system called "emerging business opportunities," a corporate management program for potential growth projects.

Former IBM CEO Lou Gerstner inherited a company that had many uncoordinated strategic investments — many of which were losing money — with no effective process for "turning them off." In his first few years, Gerstner found the money losers and stopped them, sold them or redirected them as necessary — and improved IBM's fiscal responsibility.

In late 1999, Gerstner recognized that IBM's new issue was a lack of protection for important, but immature, growth businesses. In early 2000, IBM went back to "placing bets" on future technologies — but doing it in a coordinated manner. This initiative was first called "Horizon 3" projects and is now called "emerging business opportunities" (EBOs). IBM is managing these EBOs tightly in terms of monitoring results and modifying investments over time. Every EBO has a different set of milestones being managed — but profitability is rarely one of them. EBOs are opportunities that IBM believes may become important in a two- to three-year time frame. Each EBO has an executive in charge, who reports into (and is funded by) a specific business organization, but also reports centrally to IBM's strategy organization, to help ensure that appropriate funding is provided (and to "turn off" projects that are not meeting milestones). Although many of these efforts won't succeed (or will change dramatically), a few will. EBOs are critical to IBM generating growth in the long term.

With the success and corporate support of EBOs, divisions have generally incorporated a similar management program internally, and IBM now has several hundred projects ongoing that can be considered emerging business opportunities, but only 17 are being monitored at a corporate level. The list of EBOs is dynamic, and some of them are very immature (such as WebFountain), whereas some have already been somewhat ingrained in IBM's strategy (such as Linux). The EBO
management system itself has been dynamic during the past several years, but it has evolved into what is likely to be a permanent IBM management system for EBOs.

Almost all EBOs cross division boundaries, but each is led by and reports to a specific division:

**Software Led**

**Autonomic Computing:** IBM's "on demand" strategy is built on the foundation of autonomic computing, which is IBM's vision for making software and hardware infrastructure self-managing. Autonomic computing is an example of a strategy to deliver what Gartner calls the "real-time infrastructure" (RTI).

**Business Process Integration:** This initiative is built around IBM's WebSphere Business Integration (for financial services, telco, retail distribution, automotive and electronics). Business modeling is provided through Holosofx. Aspects include modeling the business, simulation and analysis, designing flows, design business objects, design user interaction, design connectors/adapters, and monitor/administer/manage.

**Dynamic Workplaces:** Dynamic Workplaces is an end-to-end set of offerings — provided through IBM Global Services (IGS) — that deal with changing the way people work. It involves integrating applications, information and access to people, simplifying their work environment, and improving speed of response. Dynamic Workplaces allow organizations to think about employees' specific roles and what they need for their jobs: the right people, the right application or the right information. IBM is taking components from across the software group product set and is bundling them into WebSphere Portal, including Lotus iNotes, Lotus Sametime, Lotus QuickPlace, Lotus LearningSpace, DB2 Content Manager, Tivoli security management tools and others.

**Pervasive Computing:** Pervasive computing enables mobile and nonstandard clients, embedded devices, and so on. It is WebSphere- and service-oriented.

**Technology Led**

**Engineering and Technology Design Services:** This EBO leverages IBM's strengths in microprocessor and other component design and processes — wrapped around IBM's strengths in application-specific integrated circuits. It also includes expertise in such areas as the construction of chip manufacturing plants.
Sony, Toshiba and IBM (STI) Cell Processors: STI is building a "supercomputer-on-a-chip" (called the "STI Cell"). It will use IBM's high-performance/low-power technologies and will be leveraged for many different types of devices. The chips will use ultrahigh-speed broadband connectivity to interoperate with one another (in a gridlike manner).

Sales Group Led

Digital Media: This EBO includes content delivery and enabling content service providers.

Life Sciences: This includes drug discovery solutions (high-performance computing/storage, data/knowledge management), clinical and regulatory solutions, and information-based medicine; middleware and services; and grid computing.

Product Life Cycle Management (PLM): PLM is the next major wave of opportunity for manufacturers looking to improve business performance. Just as enterprise resource planning consolidated disparate back-office activities into a cohesive environment for running business operations, PLM consolidates diverse business activities that create, modify and use data during all phases of a product's life cycle. These include product ideation, design, engineering, manufacturing process management, service, maintenance, product line growth and retirement.

Systems Led

Linux: IBM's goal is not to make Linux the dominant operating system, but to make Linux a competitive Intel server alternative to Windows. IBM's goal is heterogeneity, and without a competitor to Windows on Intel servers, the heterogeneity is much weaker. The Linux value proposition against Windows (and the heterogeneity argument) is strengthened by support of Linux on IBM's various hardware architectures. The zSeries architecture, in particular, has leveraged the Linux strategy as a means of increasing consolidation on the zSeries and increasing the use of new applications on zSeries. Linux will become IBM's most important operating system for a growing trend in commoditized operating systems and servers, led by grid-computing technologies and blade servers. As distributed management software grows in capability, the role of Linux will grow in importance.

Grid Computing: Computing grids are still in their infancy, but the technologies and standards are developing rapidly, and the market is fertile for a change in computing resource utilization, flexibility, administration and economics. During the next five
years, computing grid services will provide an excellent computing resource discovery and basic provisioning foundation for RTI (internally) and the standards and economics for renting computing resources (externally). Computing grid services will provide commercially viable standards for internal and external dynamic acquisition of shared computing resources during the next five years.

**Blade Servers:** Blade servers are about a standard in form factor, a reduction in size and an increase in sharing (power, input/output, cabling, monitors), but perhaps the most important value is the shift in server administration software from single-server to multiserver. IBM Director management software is being enhanced to support not just one server, but groups of servers. Future capabilities will include provisioning/reprovisioning tools and workload balancing.

**Storage Software:** Storage is already more virtualized than any other hardware technology (through storage area networks and so on). Storage continues to explode as a market, so IBM sees software and virtualization (as well as autonomic capabilities) as key differentiators.

**Service Led**

**Business Transformation Services:** Business consulting services are aligned with the on demand strategy. These services are designed to re-engineer business processes to make them more integrative and dynamic. This EBO also includes business process outsourcing.

**Utility Services:** Enterprises desire a utility model in paying for their IT resources. IGS is leveraging tools and technologies (such as autonomic computing) to generate economies of scale and is using grid computing as one of several mechanisms to make computing utilization more efficient, and to provide a pay-for-use model for customers. A key program is "Blue Typhoon," which is riding a multiyear evolution toward grid computing.

**E-Learning:** E-learning is really about delivering training in an online digital fashion in a formal or informal/just-in-time process. IBM has formed a learning solution team to integrate its broad portfolio of services, software, hardware, research and alliance initiatives to serve the learning marketplace. On 29 January 2003, IBM announced IBM Lotus Learning Management System (LMS). The IBM Lotus LMS is a new-generation, Java 2 Platform, Enterprise Edition (J2EE)-based LMS that features an offline learning client for disconnected use. IBM Lotus bundles the WebSphere Application Server, IBM Lightweight Directory Access Protocol (LDAP) and other IBM Software Group
technologies in the purchase price of the LMS. The LMS integrates with IBM Lotus’ Live Virtual Classroom and other core enterprise technologies (such as portals, enterprise resource planning, human resources information systems and customer relationship management).

Research Led

WebFountain: Project WebFountain is an advanced information discovery system that will extract trends, relationships and patterns from structured and unstructured data. The primary focus is on identifying patterns, trends and relationships in unstructured text data stores, such as: news feeds, a full "crawl" of the World Wide Web, industry-specific data sources and company documents. These trends, relationships and patterns can uncover markets, technologies, opportunities and business risks. WebFountain is based on crawling the entire Web and a new system of composable "miners" that allows customers to create powerful customized tools to access Internet and intranet data. Applications include marketing and strategic planning, research and discovery, and supporting information-intensive operations, such as sales management.

Bottom Line: IBM’s emerging business opportunities program is a management system that provides protection for future growth businesses. Although funded and managed within business divisions, the strategies are managed centrally, and the funding for EBOs is protected centrally — based on strategic milestones, rather than standard near-term business results. Some of these EBOs are completely contained within single business divisions, but most of them cross divisions. Often, the eventual business model is not well-understood. (For example, is it service-led or product-sales-led?) Although milestones are set, profit is rarely one of those milestones. However, the EBO program makes it possible to eliminate programs that are not meeting interim milestones.

Acronym Key

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>EBO</td>
<td>Emerging business opportunity</td>
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<tr>
<td>IGS</td>
<td>IBM Global Services</td>
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<tr>
<td>J2EE</td>
<td>Java 2 Platform, Enterprise Edition</td>
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<td>LDAP</td>
<td>Lightweight Directory Access Protocol</td>
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