Electronic Performance Support and Development for Managers

by Bijan Masumian, Ph.D.

The Internet has come a long way since its modest beginnings in 1969 when the federally-funded Advanced Research Projects Agency (ARPA) linked four American Universities to test computer exchange of information across a network.[1] The information was successfully transferred at the then revolutionary rate of 50 kilobits per second. Thirty years later, a new generation of scientists are working on the sequel to the original Internet, popularly known as Internet2 or I2.

Last October, the public began to see a glimpse of the enormous potential of Internet2. During an interstate demonstration, Stanford researchers sent a continuous 40-minute feed of HDTV (high-definition TV) programming to a huge screen in Seattle, Washington where a dazzled audience of over 800 university officials and business experts watched real-time, crystal-clear broadcast that was 48,000 times faster than the original public Internet exchange rate of 1969!

The Internet appears to have irrevocably altered virtually every aspect of our lives. It has changed the way we work, bank, shop, learn, and entertain ourselves and, in the process, it has spawned a new type of economy. While the original Internet enabled the burgeoning of countless electronic ventures, the multimedia-based Internet2 promises to enable the maturation of existing enterprises and, concurrently, usher in a whole new range of possibilities. Among these will be sophisticated, real time, highly interactive collaborations, such as long-distance surgery and similar participative efforts in commercial, health-related, educational, and training fields.

Naturally, the power and cost-efficiency of the Internet as a vehicle for delivering information and training has not escaped the business world. U.S. companies are quickly embracing Internet-based delivery of content. A 1997 study by Omnitech Consulting Group noted that, in 1996, 16% of all training in the largest U.S. corporations was delivered electronically. This figure was expected to more than double to 37% by the year 2000. As another indication of the rise of electronic learning (e-learning), the same study also forecast that the Fortune 1000 companies in the U.S. would reduce their reliance on classroom training from 68% of all training in 1996 to 37% by the year 2000.

Like in most Fortune 1000 companies, electronic delivery of learning opportunities has rapidly flourished at Advanced Micro Devices (AMD), a global manufacturer of semiconductors, including the PC Magazine's 1999 Technology Product of the year Athlon chips that compete with Intel's Pentium III microprocessors. In addition to a corporate-wide intranet (internal Internet), various departments within the company have designed their own customized web sites for delivery of specialized products and services. The company's Learning and Development (L&D) organization offers online registration and delivery of learning opportunities. More than 80% of AMD employees now register for training via the L&D web site. In a span of two years (1996-1998), the number of technology-based course completions at the company grew from 369 to over 7,000. Compared to their classroom counterparts, the employees who chose to take the shorter web-based courses saved

[1] The four universities were Stanford, UCLA, University of California at Santa Barbara, and the University of Utah.

Training Variable	1997	1998	Year-to-Year Gain
Number of classroom completions	27, 101	23,215	-16%
Total CBT completions	2,549	7,098	178%
% of CBT vs. classroom completions	9%	28%	211%
Number of classroom courses available	329	262	-21%
Number of CBT courses available	75	168	124%
% of CBT courses available vs. classroom	23%	64%	178%
Number of new CBT courses introduced/evaluated	57	160	180%
Number of courses moved to pure CBT	3	9	200%

the company 10,825 hours of training in 1998. The savings in employee wages, coupled with concurrent gains in productivity, cut the company's training expenditures by close to $1 million in that year.

A recent study of the benefits of technology-based training at AMD by the author provided compelling Return on Investment (ROI) data that has validated the growing electronic learning movement at the company. The table above summarizes the stunning rise of technology-based learning and the concurrent decline of classroom offerings at AMD's Austin, Texas site.

The above also indicates that the L&D organization is well on the way of achieving its goal of 35% electronic delivery of learning opportunities by the year 2002. The success of these endeavors has also given rise to new web-based initiatives at the company for different employee populations.

Managers.Compass: an EPSS for AMD Managers

A notable example is an Electronic Performance Support System (EPSS) conceived by a cross-functional team of 21 professionals and designed by the author to meet the growing developmental and performance support needs of around 750 AMD managers. This EPSS known as the Managers.Compass was the fruit of a 5-month collaborative effort among these professionals (See Figure 1 for the main interface).

Why the EPSS?

Information gathered from several corporate-wide surveys and focus groups pointed to numerous deficiencies in the repertoire of the average AMD manager. To address these shortcomings, the team identified the following remedies:

- Set clear expectations for managers.
- Develop a comprehensive matrix of managerial competencies.
- Enable managers to assess their current skills and define a learning plan for addressing their deficiencies.
- Provide managers with world-class training and support tools to help them implement their learning plans.
- Create a system of accountability for performance improvement.

One-Stop Shopping for Development and Support

After considering several alternatives, the AMD team decided that an EPSS provided the optimal solution for this problem because it would allow managers to address all of their developmental and performance support needs in a seamless, integrated environment.

The team decided to use the metaphor of a compass in the title of this EPSS (Managers.Compass) to highlight the desire to provide DIRECTION for the development and support needs of AMD managers. The EPSS was built around the AMD Leadership Model that contains four broad sets of skills, each composed of specific competencies expected of the ideal AMD manager. The center of the EPSS interface was devoted to prominent display of the four quadrants of the AMD Leadership model (see Figure 2).

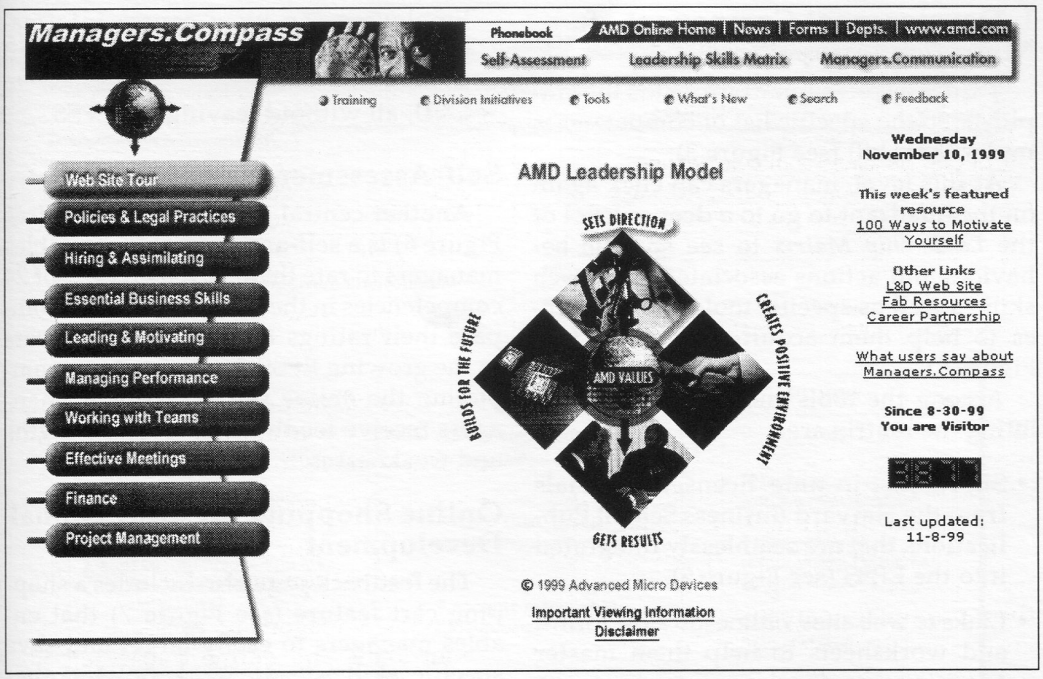

Figure 1 - Managers.Compass Interface

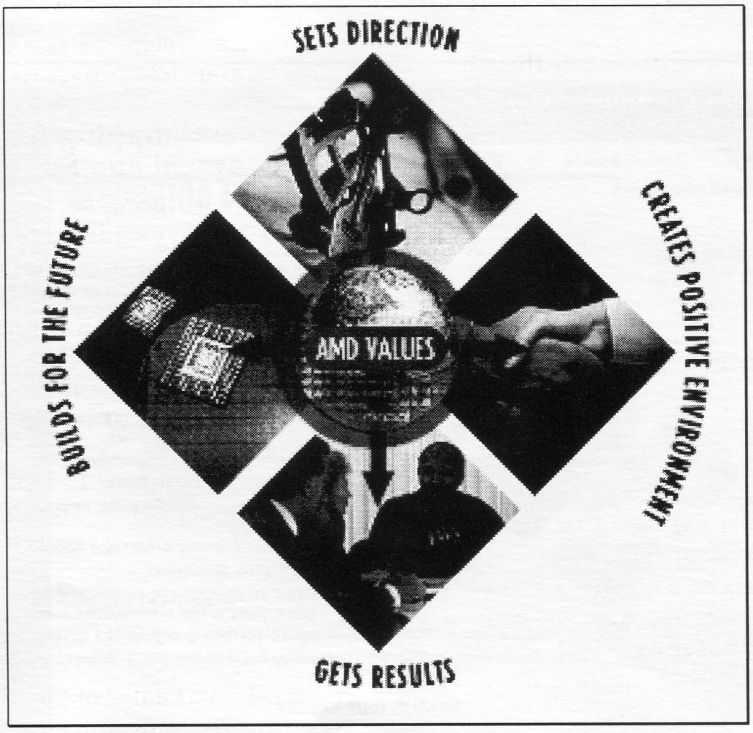

Figure 2- AMD Leadership Model

I. Development Component of Managers.Compass

Clicking on a quadrant sends the employee to the specific list of competencies under that skill (see Figure 3).

At this level, managers can click again on the quadrant to go to a deeper level of the *Leadership Matrix* to see specific behaviors and actions associated with each skill as well as specific tools and resources to help them acquire each skill (see Figure 4).

Among the tools and resources populating the matrix are:

- Short, just-in-time licensed tutorials from the Harvard Business School Publications that are seamlessly integrated into the EPSS (see Figure 5).
- Links to web sites, online job aids, forms, and worksheets to help them master specific competencies.
- Links to specific classroom training available at the Texas or California sites. Employees can view course information and, if needed, immediately send a web-based registration request to L&D, all without leaving the EPSS.

Self-Assessment

Another central piece of this EPSS (see Figure 6) is a self-assessment that enables managers to rate themselves on each of 24 competencies in the skills matrix and compare their ratings to those of their peers in the growing EPSS database. After completing the online self-assessment, managers receive feedback on their strengths and weaknesses.

Online Shopping for Professional Development

The feedback page also includes a shopping cart feature (see Figure 7) that enables managers to easily target and save specific skill sets to work on. In other words, managers could define their own individualized short-term and long-term learning plans and modify their choices

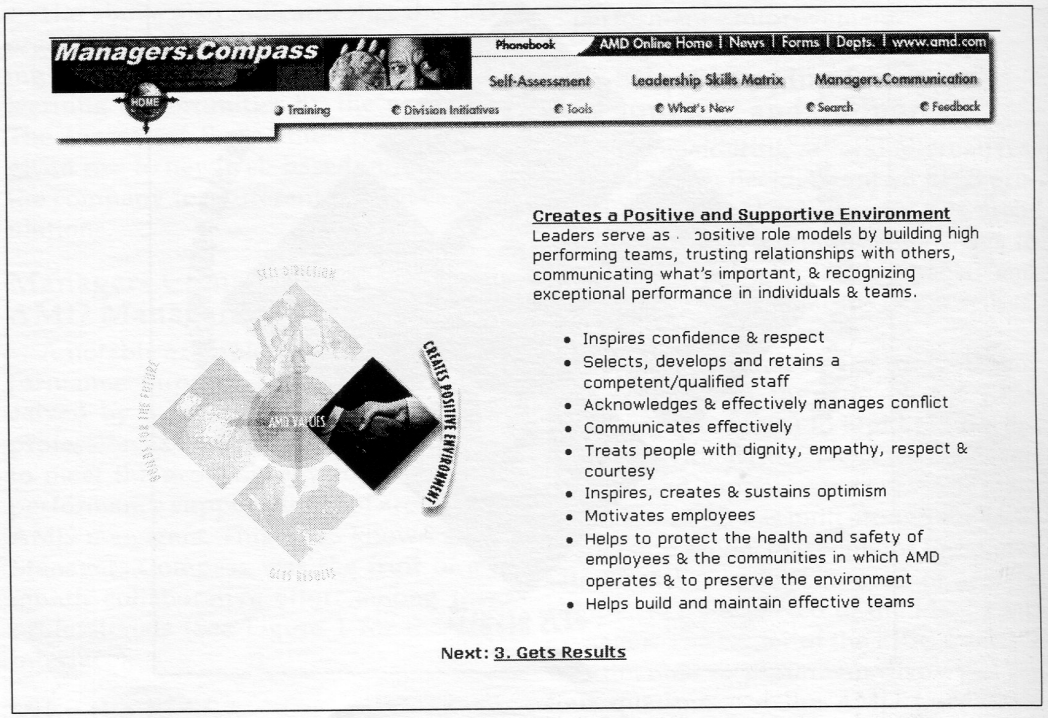

Figure 3 - Skill Sets in a Quadrant

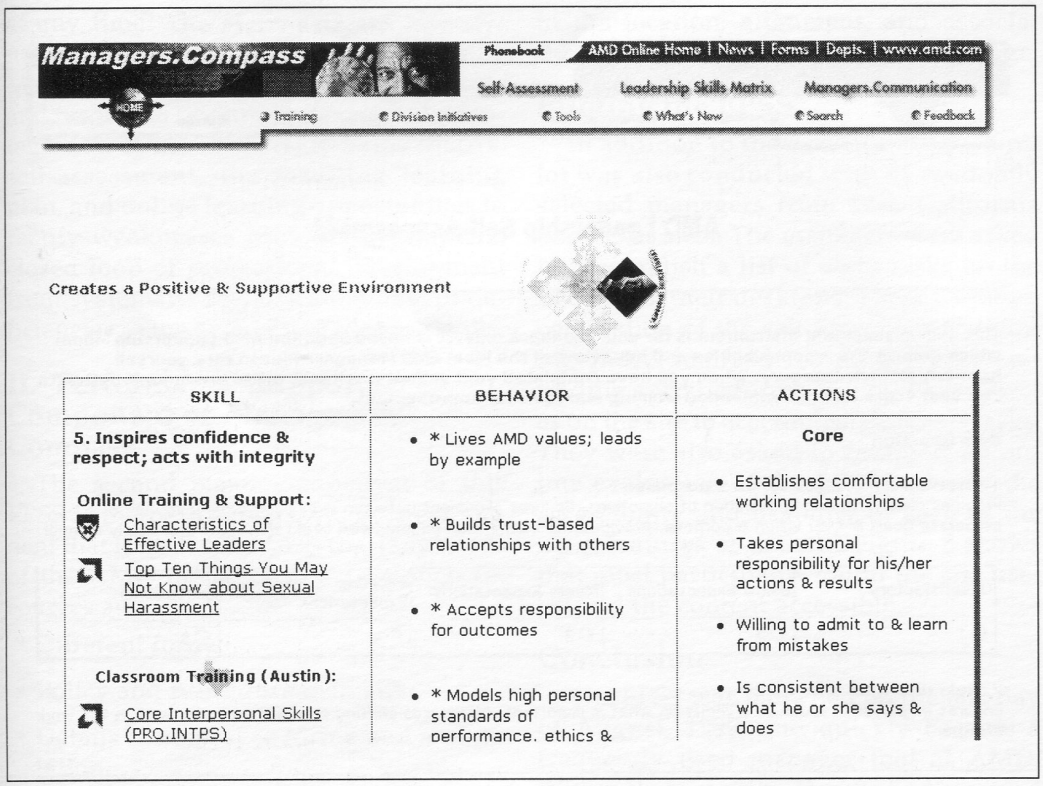

Figure 4 - Leadership Matrix

Figure 5 - Harvard ManageMentor Tutorial

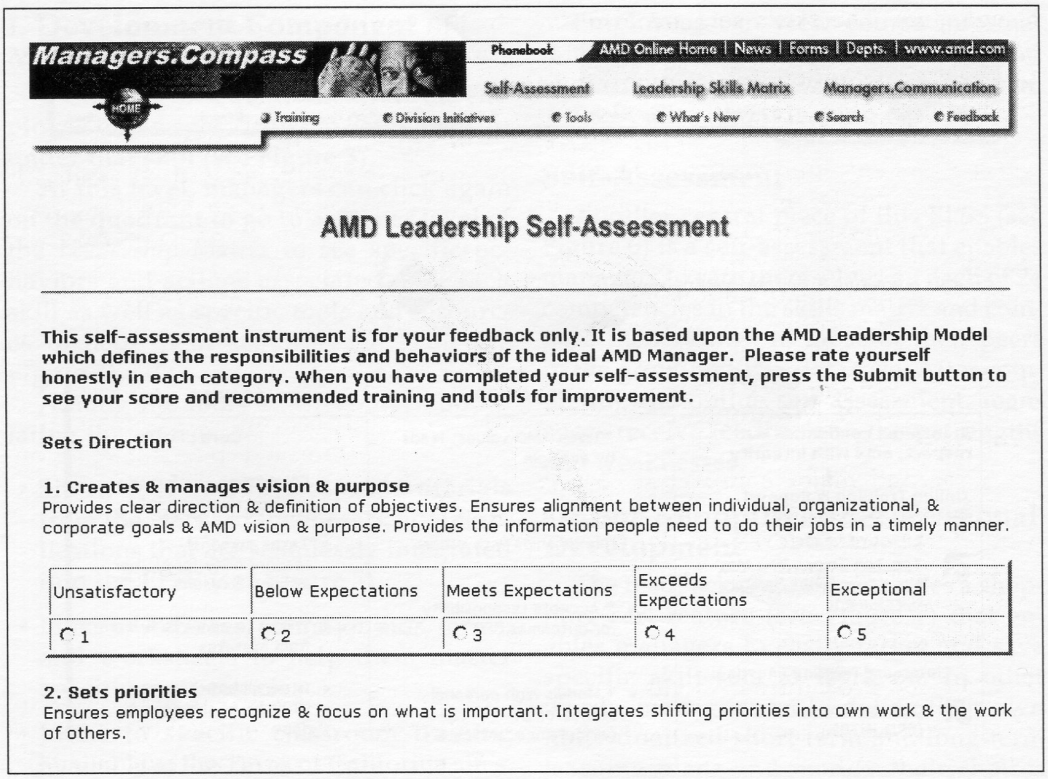

Figure 6 - Self-Assessment Screen

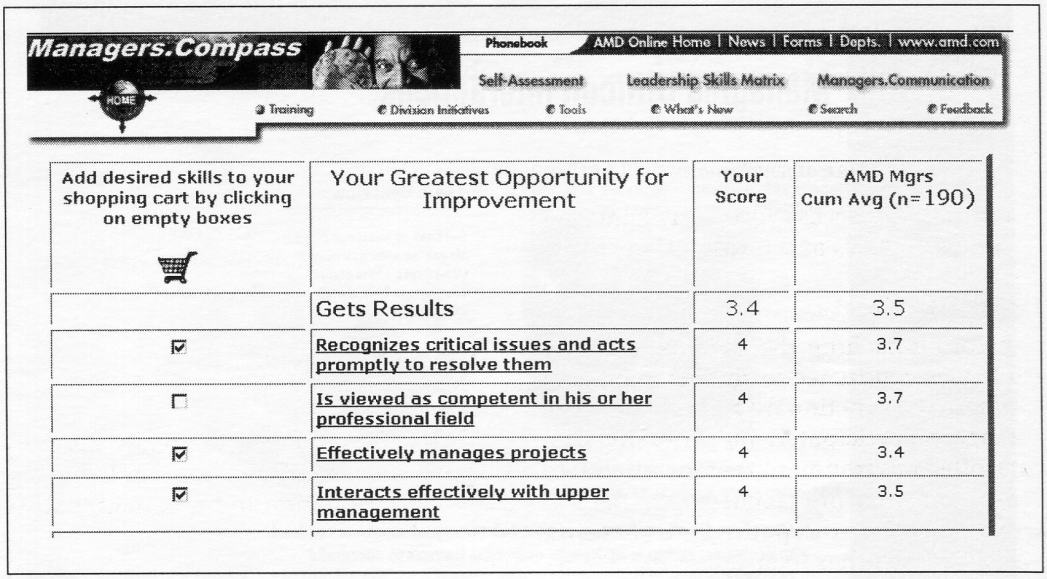

Figure 7 - Feedback Page

at any time. The skills sets are also dynamically linked to the Leadership Skills Matrix that includes links to support tools and resources (Figure 4). The seamless integration of the Leadership Skills Matrix, self-assessment, the resulting learning plan, and online learning opportunities to rectify weaknesses provides a complete, closed loop of professional development from systematic identification of skill deficiencies to the acquisition of those skills.

II. Performance Support Component of Managers. Compass

The second major component of this EPSS is the performance support component that is built to address the daily needs of the AMD manager to access such resources as:

- Different forms
- Policy and procedure manuals
- Details of employee hiring and assimilation
- Organizing and managing effective teams
- Essential business skills
- Finance issues
- How to motivate employees
- How to manage employee performance
- How to manage projects
- Continuous access to department and company news and information

Usability Study

Before launching the EPSS, a usability study was conducted with nine managers to assess the functionality of the tool. The managers participated individually in a controlled environment that included two video cameras, one focused on the PC screen to follow the paths they chose on the EPSS, the other focused on their faces to register their reactions to different screens and features. They were asked to "think out loud" as they explored the EPSS. This productive study revealed numerous opportunities for improving the structure of the EPSS, including adjustments in the location, alignment, and association of several buttons on the home page.

Piloting the EPSS

In addition to the usability study, a pilot was also conducted with 41 randomly selected managers from both California and Texas sites. The managers were asked to accomplish a list of eight tasks on the EPSS from their desktops. These included completion of the self-assessment, defining individualized learning plans, and finding specific forms and other resources on the site to accomplish different tasks. They were also asked to complete an online evaluation of the EPSS and rate the accessibility and usability of each of the main features of the site. Figure 8 shows that most participants found the site useful and the content accessible.

Conclusion

The EPSS was launched on the last day of August, 1999, and quickly became a frequently used manager tool at AMD. Within three months, the site had received close to 5,000 hits. Many managers chose to complete the online survey and most were quite complementary in their assessment of this new tool. Also, AMD Saxony (Germany) the site of AMD's newest Mega-Fab (Fab 30) has indicated strong interest in adapting this EPSS to the cultural needs of their employees. Within a few months, the EPSS team plans to conduct detailed user pattern analyses, generate site traffic reports, and hold follow-up focus groups to evaluate the functionality and usefulness of the tool and improve the EPSS accordingly.

The author wishes to thank his colleague, Richard Knox, for contributing valuable information and comments to this article.

General	Average Rating (1 = low, 5 = high)
Accessibility	4.3
Usefulness	4.5
Navigation	4.3
Specific	
Sexual harassment information	4.4
Leave of Absence policy information	4.4
Forms	4.2
Resources to improve writing skills	4.2
Leadership model	4.2
Resources to improve performance management skills	4.1
Ability to select and save skills to improve	4.1
Skills Matrix	4.0
Self-Assessment	3.7
Resources to improve use of Microsoft Outlook	3.6

Figure 8 -Pilot Results

References

Austin American Statesman. Monday November 8, 1999, Section D, p. 1.

OmniTech Consulting Group, Inc. (April 28, 1997). Multimedia-Based Training in Corporate America Expected to Double by 1998. OmniTech News Release.

Masumian, Bijan. "Return on Investment and Technology-Based Training- An Introduction and a Case Study at Advanced Micro Devices." *Journal of Interactive Instruction Development*. Vol. 12, no. 1 (summer 1999), pp. 23-30.

About the Author

Bijan Masumian, Ph.D.
Senior Learning and Development Specialist
Learning and Development (L&D)
512-602-3183 (Voice)
512-602-6296 (Fax)
512-622-2071 (pager)
bijan.masumian@amd.com