

## Accessibility at IBM: An integrated approach.





### **Evolving from philanthropy to business transformation**

IBM has pioneered the cause to open the world of information technology (IT) to more people, regardless of age or ability. IBM's long-standing commitment to people with disabilities began in 1914 when IBM hired its first disabled employee, 76 years before the Americans with Disabilities Act (ADA). From its fair hiring practices, to its dedication to making products and services accessible, to its commitment to research, IBM has been an industry leader in the accessibility arena for more than 50 years.

Accessibility began as a philanthropic effort but has evolved significantly over the last 15 years. In the late 1990s, the United States government amended Section 508 of the Rehabilitation Act requiring federal agencies to purchase electronic and information technology that is accessible to people with disabilities. The European Union is promoting adoption of the World Wide Web Consortium's Web Content Accessibility Guidelines for all public Web sites in European institutions and member states. In Japan, the Japan Electronics and Information Technology Association is responsible for developing industry standards that will foster a digital network society aimed at improving quality of life via IT advancement. Throughout the world, several other countries have passed accessibility legislation or have legislation pending.

We are seeing both the public and private sectors driving accessibility adoption. What began early on as a philanthropic effort has evolved into a business transformation effort for IBM and its clients.

### **Unifying accessibility efforts worldwide**

IBM has merged existing accessibility groups to form a worldwide Human Ability and Accessibility Center (HA&AC) with locations in the United States, Europe, Japan, Brazil, India, China and Australia. The HA&AC fosters product accessibility, works toward the harmonization of worldwide standards, applies research technologies to solve problems experienced by people with disabilities and the maturing population, creates industry-focused solutions and generates accessibility awareness.

Helping people with disabilities access IT requires innovative technology. As part of the IBM Research organization, the HA&AC has a direct line to the scientists developing new technology. After promising ideas emerge from IBM Research, the HA&AC works with influencers, advocacy groups and clients to pilot these technologies. Successful pilot programs are turned into offerings that help more people access IT —regardless of age or ability.

### **Maintaining dedication and commitment**

As accessibility has evolved into a business transformation effort, IBM has remained dedicated to recruiting and hiring people with disabilities and helping them to be successful in the workplace. IBM advocates for people who have disabilities by instituting and maintaining favorable hiring practices and sponsoring education and employment programs. Programs include preparing youths who are disabled for work in the corporate marketplace and providing career counseling to students who are disabled.



## Project View success story

Bill Huber graduated from New York's Pace University with a Master's degree in computer science. A skilled and highly motivated test engineer, Bill is deaf. As a participant in the Project View program, he was hired by IBM Systems and Technology Group where he is a function tester and debugger of the Unix Systems Services/Language Environment group for IBM @server™ zSeries®. In his spare time, Bill chairs an IBM diversity network group with the ultimate goal of helping IBM employees with disabilities become more effective in the workplace.

## Recruiting and hiring people with disabilities

- *Entry Point* is an IBM internship program that provides an excellent opportunity for students with disabilities to get on-the-job experience in their majors and learn about the many careers IBM has to offer nationwide.
- *Project Able* is an IBM diversity recruitment program that offers people with disabilities the chance to explore IBM careers nationwide.
- *Project View* is a recruiting program that was established in the 1970s to reach outstanding college candidates of diverse backgrounds. The program was expanded in 1995 to include women and people with disabilities.

## Accommodating employees with disabilities

IBM provides a range of accommodations and assistive devices for employees who have disabilities. Examples include:

- Constructing ramps, power doors, parking facilities and other accommodations to provide access for people with impaired mobility.
- Captioning videotapes and providing sign language interpreters and note takers for classes and meetings for employees who are deaf or hard of hearing.
- Recording company publications on audio-cassettes for employees and retirees who are visually impaired.
- Providing adaptive services or modifications to enable people with disabilities to use work-related equipment. Some examples are screen readers and display-screen magnifiers; keyboard guards and special switches; real-time captioning of meetings and Webcasts; Media2Text, a Web application that allows IBM employees to obtain transcripts of any media file on the IBM intranet workplace portal; and telecommunications devices and telephone amplifiers.
- Providing travel assistance for employees with mobility impairments.

In addition, IBM employees can use Accommodation Assessment Teams to assist with requests for accommodation. Team members consult with the employee to help identify potential accommodations, assess their effectiveness and, taking into account the employee's needs, advise management on accommodation.

### **Providing educational opportunities**

Education is a top priority within IBM's community endeavors. Through strategic efforts, IBM is helping to solve education's toughest problems with solutions that draw on advanced IT and the best minds IBM can apply. The programs help pave the way for systematic reform in school systems nationwide through partnerships with whole school districts and entire states.

- *MentorPlace* – A key component of IBM's overall commitment to public education and raising student achievement, the MentorPlace® program provides students with online academic assistance and career counseling by IBM employees.
- *Reading Companion program* – A Web-based family literacy program, Reading Companion uses voice recognition technology to help children and adults learn how to read. This innovative software is user-friendly and customized to the needs of the individual learner. It "listens" and provides feedback, enabling emerging readers to practice reading and acquire fundamental reading skills. Basically, a user is presented with reading material; an on-screen mentor, or companion, guides the user through the material, inviting the user to read phrases or sentences out loud into a microphone. Depending on the accuracy of what was read, the companion will provide positive reinforcement, give the user an opportunity to try again or offer the correct reading of the words on the screen.

### **Building influential relationships**

To help IBM gain a deeper understanding and foster an accessible environment, IBM forms external relationships with leading experts on accessibility. These relationships help IBM understand specific issues and collaborate with key constituents to continually drive accessibility into mainstream IT.



### **Volunteering spirit**

In 2001, IBM incorporated students with disabilities into its MentorPlace program. MentorPlace is a structured mentoring initiative that capitalizes on the knowledge, dedication and enthusiasm of teachers and students—and the expertise and volunteering spirit of IBM employees.

Relationships are created to cover many aspects of accessibility and help IBM:

- Understand how people with disabilities and seniors need information presented to them.
- Work with advocates to gain better understanding of their needs in the market.
- Demonstrate the value of integrating accessibility practices into businesses and communities through collaboration with advocates and early adopter clients.

### **Paving the way to accessibility standards**

IBM has long been active in many of the worldwide regulatory organizations that set accessibility standards. Participation within key advocacy groups continually influences best practices and helps define the new standards:

- IBM was vice-chair of the committee that helped develop the Section 508 regulations.
- IBM was a founding member and sponsor of the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) and continues to play key roles on the WAI Steering Council and the Web Content, Authoring Tools and User Agent Accessibility Guidelines working groups.
- IBM currently advocates open and consistent accessibility standards through its membership in the W3C and other standards and industry groups—including more than 20 international and U.S. groups.

IBM believes that if accessibility standards are harmonized worldwide, technology companies will be free to devote more time to research for development of accessible products and be able to deliver more varied and advanced assistive technology products. The company is taking a leadership role in standards and policy arenas advocating for harmonized standards that will help bring accessibility to more people worldwide.

### **Implementing a company-wide corporate instruction**

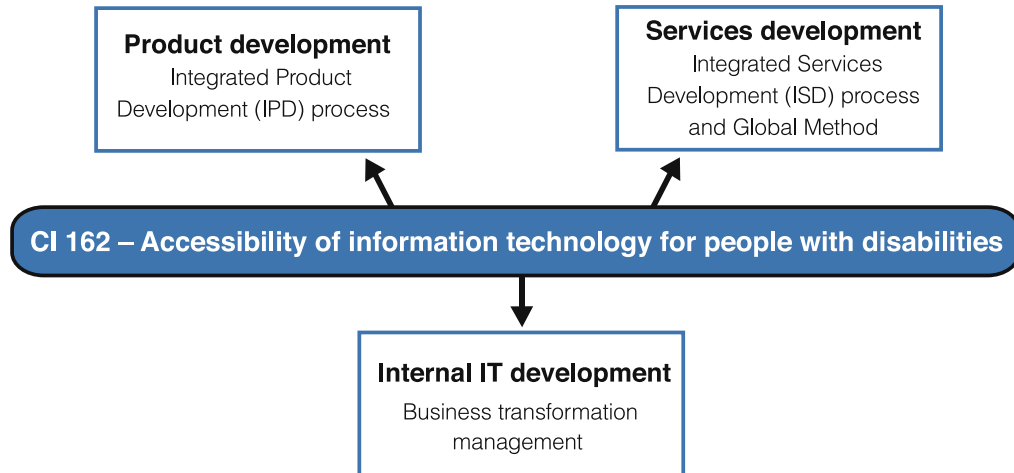
IBM has a long history of making its information technologies widely available and accessible no matter the ability of the user. The company's competitiveness in the worldwide marketplace depends on satisfying its clients' demands for products that meet their varying requirements.

To help enable people with disabilities to use IBM products and allow the company to meet government purchasing regulations, IBM must include accessibility features and functions in development so that its products are either directly accessible or are compatible with assistive technology.

In 1999, IBM codified its corporate standards for product accessibility with the adoption of Corporate Instruction 162 (CI 162). CI 162 did more than spur accessibility awareness within the corporation. It contained a mandate for the assessment of accessibility characteristics of all new products and called for the integration of accessibility requirements into IBM's development processes. Specifically, CI 162 directs all IBM operating organizations and subsidiaries to design features and controls into IBM hardware and software products, Internet systems and Web sites, product documentation and internal tools and applications that make these offerings accessible to people who have disabilities.



## Weaving accessibility into the fabric of IBM



CI 162 applies to all products produced, marketed or sold by IBM and its subsidiaries, even if the product uses parts not developed by IBM. Accessibility is one of the criteria IBM uses to select vendors or suppliers, and is identified as a requirement when procuring components from third parties.

Accessibility checklists define the requirements that must be met in order for a product to meet CI 162 standards. Today, the checklists reflect U.S. Section 508 requirements, and in the case of Web requirements, also include most of the guidelines defined by the W3C Web Content Accessibility Guidelines (WCAG)—the formal standard in many countries other than the U.S. As future standards are published and adopted, the IBM checklists will also integrate those requirements.

In addition to standards criteria, each checklist provides additional rationale, implementation hints and testing techniques. These checklists are available for Web sites, general software, Java™ software, IBM Lotus® Notes® applications, Lotus Domino® Web applications, hardware systems, hardware peripherals and documentation.

### Driving accessibility into IBM processes

Corporate Instruction 162 defines accessibility for IBM. Throughout IBM business units, compliance with CI 162 is incorporated into development processes such as the IBM Integrated Product Development (IPD) process.

IPD is a management system designed to optimize the development and delivery of successful products and offerings. It consists of six phases (concept, plan, develop, quality, launch and life cycle) with periodic checkpoints that are predicated on fact-based decision making. The cornerstone of IPD is team-based management involving the representation and active participation of all relevant functions. Completed accessibility checklists are required at key phases of the development process and accessibility verification is integrated into testing and validation procedures.

Much like IPD, IBM also has an Integrated Service Development (ISD) process. The purpose of ISD is to provide a structure and set of supporting methods and tools to enable efficient development and global deployment of repeatable service offerings. It too consists of six phases with periodic checkpoints, fact-based decision making and team-based management—mirroring IPD's basic structure. Because service development differs from product development, in that it does not necessarily involve development of a tangible product, accessibility criteria are addressed as custom software, a Web site or service documentation is developed.

For those service offerings developed for a unique client, IBM also has the IBM Global Business Services (GBS) and Global Technology Services (GTS) Methods. The GBS and GTS Methods are asset-based processes, providing practitioners a mechanism to reuse knowledge and tangible assets during solution development for a client engagement. Accessibility requirements are woven throughout the appropriate assets in the GBS and GTS Methods.

### **Managing accessibility integration**

Because accessibility is so important to IBM, the company wanted a way to internally manage the process of integrating it into the fabric of IBM. In 2003, IBM Chairman and CEO Sam Palmisano directed the worldwide HA&AC to assist IBM's various units in incorporating accessibility into their business solutions. Internal tools and Web sites have been built to enforce and manage the entire process. The infrastructure consists of several databases, reports and Web sites that aid accessible product implementation.

The databases automate the process of providing and procuring accessibility information for both developers and IBM client representatives. And, by tracking client accessibility status requests, the databases help IBM to recognize high-priority product trends. These trends assist the development teams with their strategic planning to identify critical client accessibility requirements for the future.

The HA&AC intranet houses information maintained to assist IBM developers and testers in their ongoing accessibility efforts. Continually evolving, the site provides the latest facts on accessibility, both within IBM and the industry, to address the needs of its users. The site includes the accessibility criteria that enforce best practices during product development. A plethora of information exists on checking for accessibility, including links to software downloads that can assist with the testing process. A section on worldwide standards and regulations provides users with the latest information on accessibility legislation that is in progress or has been passed. A newsroom lists the latest accessibility happenings and events in IBM, as well as links to interesting industry articles.

In addition to being a repository for developers and testers, the HA&AC intranet is a depot for sales and marketing teams as well. These teams can browse the site to find sales tools, brochures, demos, contacts for sales support and even client references.



### **Facilitating processes with accessibility tools**

The combination of IBM's internal databases and Web sites allows the company to communicate accessibility information to clients quicker and provides an interactive means of discussing accessibility challenges and issues. For example, the online product accessibility request form allows clients and IBM sales teams to request U.S. Section 508 Voluntary Product Accessibility Templates (VPATs), and other accessibility information, for IBM products. It also provides a forum to pose questions about specific issues that may be challenging them. The HA&AC can then work with the appropriate product development teams, standards organizations and IBM Business Partners to address these issues.

### **Establishing a central hub for accessibility**

The Accessibility Project Office was established in 2002 to drive accessibility compliance plans and provide a center of competency, education and consultancy for issues with regard to accessibility. Its mission is to promote awareness of accessibility both internally and externally.

Many methods are utilized to reach the various accessibility audiences around the globe: quarterly accessibility Webcasts; monthly technical newsletters; on demand workshops; compliance and discussion databases and a 24x7 Web university. Each of these vehicles is used to announce new technologies, tools or techniques, legislation, tips and hints, best practices and strategy.

In addition, members of the Project Office provide individual consultation, participate in accessibility committees outside the company, monitor worldwide accessibility regulations and standards, attend accessibility events and work with other IBM organizations such as sales, procurement, user experience and business transformation teams to integrate accessibility further into mainstream processes.



Functioning as a link between IBM product development teams and sales teams, the Project Office determines accessibility compliance status of products and services included in client engagements. When a client's bid request includes accessibility requirements, the sales team engages the Project Office to provide the detailed accessibility information and templates. The Project Office works with the appropriate development teams and members of the HA&AC to review the applicable standard and how it applies to the product(s) the client is considering, and provides the appropriate documentation for the bid response.

### **Pioneering advanced technology**

Because so many IBM assistive technologies were initially developed in our research labs, a special team in the HA&AC was established to work with researchers on identifying new technologies that can enhance accessibility and be incorporated into mainstream products. Once identified, the team works with other IBM business units, Independent Software Vendors (ISVs) and assistive technology vendors to transfer the technologies to the appropriate parties. In many cases, IBM takes cutting-edge technology from IBM Research, transforms it into a working prototype and works with clients to test the technology.

In addition to creating product opportunities, this team is responsible for providing strategic platform enablement and comprehensive accessibility test leadership. It drives development of IBM accessibility plans and provides technical consulting and implementation support to accelerate resolution of accessibility issues. In a testing capacity, the team provides leadership for the integration of assistive technology with strategic IBM platforms, products, services and key ISV applications.



### **Walking the talk**

Along with external product accessibility, IBM has a rigorous internal business transformation management system. IBM strives to achieve accessibility across its own technical infrastructure, which includes the Internet, intranet and tools and applications. IBM IT business processes and environment are under continual surveillance and are being streamlined for maximum efficiency. This has enabled IBM to have a centralized Web standards monitoring process that provides scorecard accessibility compliance data to each business unit. Each business unit executive has a representative on a company-wide team that is working to drive compliance consistently across the company.

### **Advancing greater access to information**

Through its global reach and experience, IBM provides solutions that enable greater access to information. These solutions consist of services, hardware, software and in some cases, research technologies.

By providing an array of services, IBM can address end-to-end accessibility requirements facing client organizations. Services range from helping enterprises define an accessible IT strategy to building a strategic framework and architecture. Consultants can assess existing Web sites to see if they are accessible, fix them if they aren't or design new sites. Most importantly, IBM has the breadth of skills and business insights to integrate accessibility into the client's business processes to help improve customer service and satisfaction, employee development and retention and operational efficiency.



*“I think that out of our work making computing easier to use for people with disabilities we will think of radically new approaches. Out of these approaches we will find not just ways of helping people with disabilities, but ways of making computing far more natural and intuitive.”*

— *Paul Horn, senior vice president,  
IBM Research*



**Realizing results**

IBM's accessibility efforts are yielding results. Acknowledgment of IBM's accessibility commitment and accomplishments has come from a broad spectrum of organizations and publications. To date, IBM has won more than 30 awards for its focus on accessibility in hiring, employment and technology.

IBM is recognized as a major supporter in the harmonization of worldwide accessibility standards and continues to stay at the forefront in this area.

From an internal perspective, IBM is consistently increasing the number of accessible applications deployed worldwide. And, for IBM products under development, the company has seen an increase in compliance over the last three years.

**Establishing a comprehensive approach to accessibility**

IBM strongly supports, and engages itself, in a holistic, integrated approach to driving human ability and accessibility initiatives within and across organizations. Our vision is built upon four sets of capabilities that businesses can invest in to drive sustained value, enhance human ability and ultimately contribute to a broader goal of societal transformation.

These capabilities—compliance, usable access, responsive relationships and collaborative ecosystems—are separate but interdependent components that an organization should seek to develop and refine to become truly accessible to all of its stakeholders.

Reaching *compliance* is about understanding and adhering to regulations and legal mandates established in each country where a company does business.

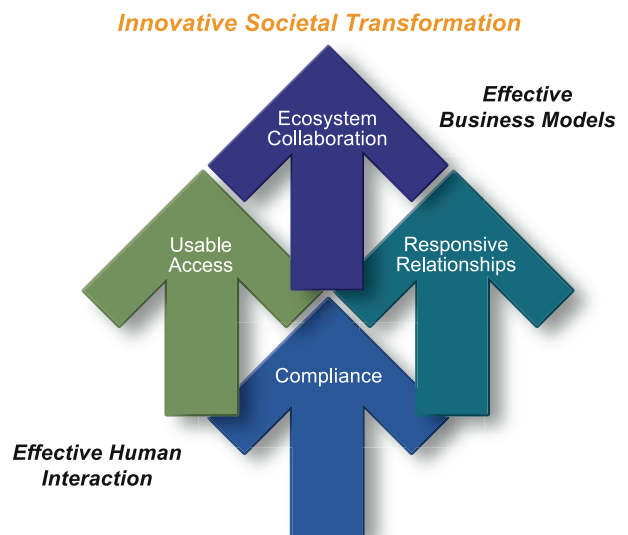
Fostering *usable access* requires moving beyond compliance to actively improve all users' experience with an organization's technology systems.

Driving *responsive relationships* involves creating a more adaptive human-business experience by extending technology systems into the fabric of a business to sense and respond to unique user needs and preferences.

Participating in a *collaborative ecosystem* means actively supporting the seamless flow of communication—both within and between organizations—to ensure the ongoing delivery of products and services designed to respond to the needs of all people, regardless of age, ability or disability.

Together, these capability sets can help businesses execute an integrated approach to human ability and accessibility that drives a business-positive result, and a measurable return on investment—resulting in more effective personal interactions, increased user satisfaction, an expanded market reach, better employee retention and enhanced relationships with clients and partners.

Accessibility means going beyond product compliance with regulations to include a better user experience and the vision to ultimately improve a person's total quality of life. We see this as a global journey to gain business advantage—a journey that begins with accessible technology infrastructure and ends with business transformation.



## Success is self evident

Most recent awards include:

- Mayor's Disability Employment Award from the city of Austin for IBM's commitment to developing technologies that help to create accessible work places.
- Title IV of the ADA Telecommunications Award from the New York City Mayor's Office for People with Disabilities for IBM's commitment to increasing technological accessibility for people with disabilities.
- da Vinci award for Web adaptation technology from the Engineering Society of Detroit and the National Multiple Sclerosis Society, Michigan Chapter
- Best New Freedom Accessibility, Employment, and Organization in a Supporting Role awards for IBM's work and commitment in creating new freedoms for people with disabilities. Best New Ability Research award for Web adaptation technology and IBM ViaScribe™ technology, from the New Freedom Foundation.
- IT Works Ability award for leadership in recruiting and hiring people with disabilities from Information Technology Association of America (ITAA)
- Product of the Year for Web adaptation technology from National Business & Disability Council (NBDC)
- New Freedom Initiative award for furthering the employment objectives of the President's New Freedom Initiative from the United States Department of Labor
- Advertising Campaign of the Year recognizing advertisers who are leaders in expanding opportunities for people with disabilities from National Business & Disability Council (NBDC)
- Access award for corporate philosophy of promoting accessibility throughout the company and its products and services from American Foundation for the Blind (AFB)
- Barbara Jordan Media Award for attention-getting messages about information access and employment contributions of people with disabilities from the Texas Governor's Committee on People with Disabilities

## Taking the first step

To begin to incorporate accessibility into your business processes, first get agreement from the top. This will make it much easier as your organization proceeds with its plans. Organizing a group of people to serve on an accessibility task force is another good idea. This team of people will be key in defining the scope of work, plans and standards by which to measure your success and the progress of your organization's actions.

Establishing an enforcement process is important to maintain the desired accessibility level. The Web is a great example. New pages are being added constantly. To continue to have an accessible, easy-to-navigate Web site, new pages must meet your organization's standards.

Lastly, remain flexible throughout the changes. As legislation and standards evolve, your corporate standards and processes must be flexible and expandable with minimal disruption to your ongoing business practices.

## Continuing the commitment

IBM is working to expand the roles of people with disabilities in its work environment to better serve a diverse marketplace and make an impact on the future of IT. By maintaining smart hiring practices, implementing innovative programs and developing new technology, IBM helps people with disabilities lead in an on demand world. And by making technology, services and end-to-end accessibility solutions available externally, IBM is helping other organizations do the same.

## For more information

Visit the IBM Human Ability and Accessibility Center at [ibm.com/able](http://ibm.com/able) to learn more.



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