

cartography business. Since the Sixteenth Century, European maritime hegemony has rested on cartographic developments as maps were needed to plan and predict operations and newspapers needed to inform the public about the wars. In 1775, British readers followed the Battle of Bunker Hill from maps published in London four days after the engagement. Black cites other examples of maps made during the American Civil War and the two World Wars. Mapping a war as opposed to preparing for war is quite different. The lines and arrows used in the past to indicate troop movements will not suffice for the modern multi-dimensional war of land, sea and air operations.

Maps and Politics is a fresh look at an old topic. Although some of the ideas may not be new to readers of Mark Monmonier's recent books or Denis Woods' *The Power of Maps* (New York, 1992), Black provides numerous examples to substantiate his opinions. There are some criticisms to be made. The narrative is choppy and takes some unexpected detours. For example, I didn't expect a paragraph on gender differences in map reading in the midst of the chapter on mapping social issues. Some chapters, such as the third one, seem disorganized and try to touch on too many topics. I also have trouble with several map figures. They are not always easy to relate to the adjacent text, although the captions are lengthy and descriptive. There is no list of illustrations and the numerous examples are not numbered. Additionally, some of the figures are not referenced in the index. For instance, the 1933 *London Underground Journey Planner* map referred to in the text on page 15 is shown in the color plate section on page 49, but no such reference to the map appears in the text. It is in the index. Another figure, on page 135, *A New Map of the British Colonies in North America, showing the seat of the Present War (1777)*, is not discussed

specifically in the text nor is there an entry in the index. The map on page 100 from Daniel Dorling's *New Social Atlas of Britain* (1995) needs to be in the 8-page color-plate section to be read effectively. I was also surprised that there was no mention of problems associated with reapportionment in the U.S.

Maps and Politics would work well as supplementary reading for a course with a unit on critiquing maps. It surveys the choices which must be made in mapping and can prepare cartographers to make difficult decisions or, at least, be prepared for difficult situations. The issues Jeremy Black addresses are an important part of professional evaluation and ethics; something each cartographer faces yet may seek to avoid. Cartographers should be comforted in knowing they are not alone in their efforts to please the client and the boss while remaining ethical. The book includes a very extensive notes / reference list which Map Librarians will appreciate. I learned that both the *Atlas of South Asian History* (Joseph Swartzberg, ed., 2nd ed. New York, 1992) and the *Historical Atlas of Africa* (J.F. Ade Ajayi and Michael Crowder, Harlow, 1985) are considered the 'best' for their fresh ideas and honest approach.

cartographic techniques

Maps.com: Solving the Base Map Problem Online

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Building the premier virtual map store with the best address on the world wide web, Maps.com (figure 1) has come about from the combi-

nation of emerging technology, futurist vision, timing, and, of course, creating your own luck. Our advantage is a giant 'map store' with the world's most extensive product list and the ability to be many things to many people. The challenge is to find, apply, or develop the technology needed to keep up with our own imagination.

Our goal with Maps.com is to create an intuitive (read simple) web site that creates a user community around maps, map products, geographical education, driving directions, and travel goods. By offering the ubiquity of the internet, our virtual store can be open 24 hours a day, seven days a week, and it's on every wired desktop in the world and available to anyone. Today we stand on the threshold of opportunity. We are transforming a ten-year-old idea that turned into a company and a new form of communication (the internet) into an expanding revenue stream and an entire department at MAGELLAN Geographix (MG).

Maps.com in its present state has existed since June of this year, yet the fundamental ideal of providing map data online is the premise on which MAGELLAN Geographix was founded.

In the late 1980s as the personal computer was becoming a standard desktop accessory for most graphic professionals, MG founder Chris Baker (University of Oregon) had the idea to create a library of digital maps and deliver them via computer through a subscription service worldwide. With help of Rick Wood (UC Santa Barbara) and Bill Spicer (University of Oregon) a business plan was developed and a meeting was arranged with the news information provider leader Knight Ridder in Washington, DC. The meeting with Knight Ridder produced a handshake and the assurance that the plan was sound, and that perhaps with an adequate prototype investment money could be available.

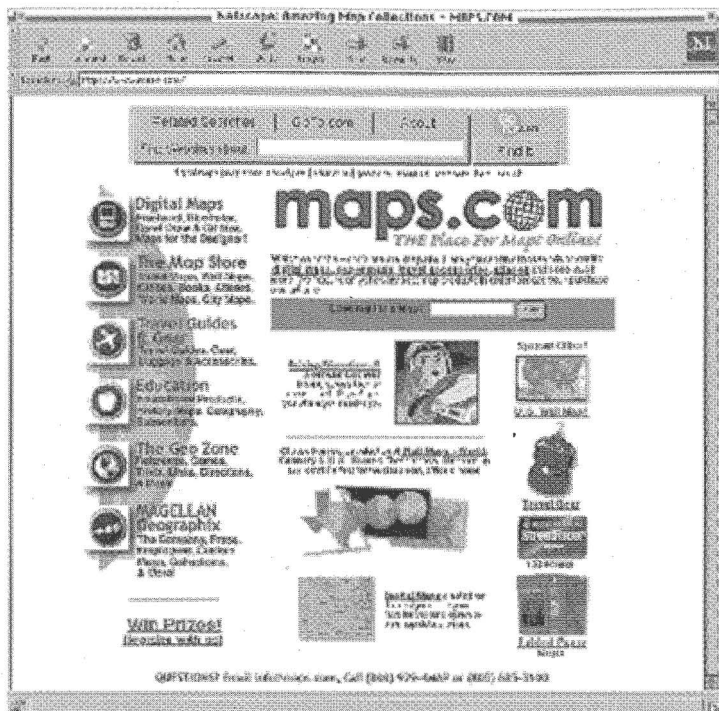


Figure 1. Maps.com home page. (The web is a dynamic environment, and to appeal to potential customers Maps.com is constantly evolving. The image above is what the Maps.com home page looked like in the Fall of 1998. Subtle adjustments are performed weekly and daily, with more comprehensive design changes occurring at least bi-annually.)

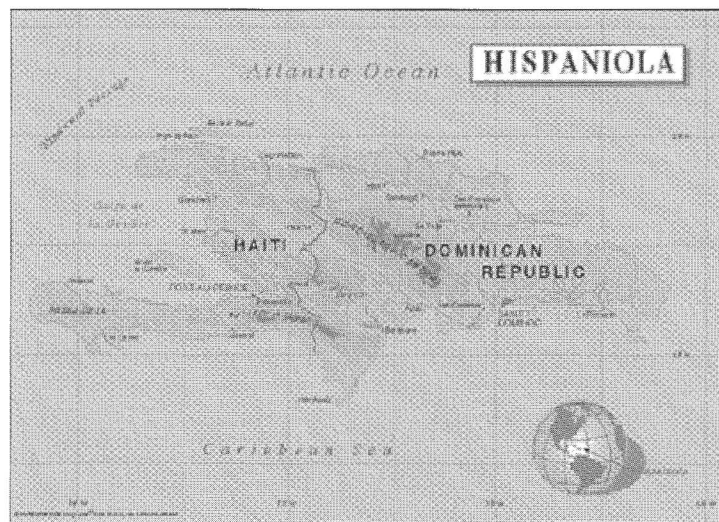


Figure 2. MAGELLAN Geographix prototype map. (MAGELLAN Geographix was founded by shopping around this prototype map. Black and white doesn't do it justice, but this map of Hispaniola was created at the Penn State Cartography lab in 36 hours, and eventually led to the landing of seed money to start the company.)

Our bags packed with optimism it was off to The Pennsylvania State University to create a prototype map graphic. We hired the services of the Deasy GeoGraphics Laboratory for three days to create the prototype (figure 2).

Immediately we faced numerous technical issues without the luxury of historical data or the resources for extensive research. It was clear that the Macintosh platform had quickly

dominated the graphics industry, and that became our target market. What wasn't clear at the time (and is still somewhat debated today) is the optimal native graphics software for creating maps that would be easy for end-users to manipulate. We chose Aldus FreeHand (now Macromedia FreeHand) version 1.0 over Adobe Illustrator for the simple fact that it had the ability to place different elements of information on different layers, a process that is fundamental for traditional or manual cartography.

In the following spring of 1990 we returned to Knight Ridder with prototype and updated business plan in hand. Expecting a triumphant return, we were met with the newspaper industry's biggest decline since the Depression. Increased paper costs and competition from other media for news severely reduced newspaper circulations nationwide. As a result, few news agencies had the luxury of being in a position to fund a new enterprise.

Down but not out, MG went through what is common for many a start-up business by opening in a spare bedroom while searching for private investment. Through diligence and word-of-mouth a visionary investor was found in Santa Barbara, California. This allowed MG to open an office and begin hiring employees in 1991.

While the map subscription idea wasn't dead, it clearly wouldn't pay the bills while we developed the 'product.' To cover our expenses and stretch our 'seed' money MG relied on custom cartography and work for hire. Today many industry professionals know MG for its custom cartography capabilities that range from college and high school text books, to phone book directories, to The Official State of California map—but that wasn't the original plan.

By 1992 MG had built up quite a library of digital map files. This greatly enhanced the chances of success for pursuing the original idea of selling map subscriptions. By the end of that year MG was able to sign a deal with the Los Angeles Times Syndicate (LATS) to do precisely what we intended; sell map files on a subscription basis and deliver them online.

LATS competes with Associated Press (AP) and at that time United Press International (UPI) to distribute news and graphics to all of its subscribing newspapers. Our idea of pre-made map graphics files designed for the graphic professional added value to their repertoire of products and services. We provide the files to LATS through their proprietary and closed online system, PressLink, allowing subscribing members to download any given file at any given time. Thus

the birth of MG's "Any time, on line" mantra.

As our subscriber list grew so did online technology and its ease of use. By the fall of 1993 CompuServe was ready to sign up, but with a catch; they wanted the entire MG library (600 maps) in a raster format and they had to have it in two months! Beyond the unrealistic time frame we were facing multiple challenges as map makers. We needed to turn 8.5 x 11 inch maps designed for print into screen display images in a size we didn't understand at the time—840 x 480. Much of the type on our 'print' maps was unreadable on a computer screen, as were the subtleties of many our muted, or pastel colors.

Through round-the-clock efforts a rasterization process was created and a script distributed throughout the office. But for the issues of type size and readability no technical assistance was available. Each map had to be examined on an individual basis and type had to be generalized based on a minimum point size. We determined that 12 point was as small as we could go, with titles running at about 24 points. All blends and gradients had to go, as did any colors that were similar.

In addition to the cartographic hurdles, there was the issue of security. How do you discourage people from just taking images off of CompuServe without permission? Through experiments with Adobe Photoshop, MG pioneered 'watermarking' map raster images (figure 3). The theory goes that by placing an embossed company logo on the image it will deter somebody from stealing the image as it will show clearly where the image came from. While it is possible through the same program, Photoshop, to erase the watermark, it would be prohibitively labor intensive.

Since each and every map file was going to need to be adjusted, it was clear just 10 days into the project that the deadline was in serious jeopardy. To compensate for

the lack of production time and being eager to deliver on time, we closed our office doors for 45 days to concentrate exclusively on the CompuServe project. No other business was accepted during this time, and it paid off with an ontime delivery.

Building on the success of CompuServe and the emergence of the internet or World Wide Web as we know it today, MG launched its first web site in 1995. Designed to showcase our growing library of digital files, the site served as our corporate identification. Online traffic was modest considering that the URL was a mouthful: www.magellangeo.com. Also at this time online commerce was an idea slightly ahead of it's time, so individual map file sales didn't exist. MG subscribers were the only people able to download map files directly.

In 1996 MG launched an updated version of its web site complete with electronic commerce making any map available via the World Wide Web. But choosing a commerce solution didn't come easy. The original determination

was to go with an 'off the shelf' solution called iCat. For \$10,000 the buyer got the software to run electronic commerce on a NT or UNIX server that allows client-side access from any platform, Mac or PC. After purchase it was discovered that client-side access was only available via NT or UNIX, and that there wasn't a built-in database so third party software would be needed. It became quite clear to us that this wasn't the solution we were looking for. So we returned the iCat software and collaborated with a local company to custom build our web site's "backend."

While many view MG and our web site as an industry leader, we aren't the only players in the arena. Competition in the marketplace for pre-made map graphics has been, and continues to be, intense. Firms such as Cartesia or Image Club also offer maps online, pushing us to differentiate ourselves through the frequency of our map update cycle, data quantity, quality, and superior map design. Today there are literally dozens of different vendors for digital map data.



Figure 3. MAGELLAN Geographix watermarked raster map. (There is relatively little that can be done to keep others from 'lifting' any image or data posted online. At MAGELLAN Geographix we use a process known as 'watermarking' to discourage such practice. By clearly placing our translucent logo on all our web images that we offer for sale, we can at least determine if an image has been 'lifted' should we ever come across it.)

Through 1997 our web site matured, becoming more intuitive and easy to use. But it wasn't until we secured the URL Maps.com did our traffic seriously escalate. With the change in web address we needed to offer much more than our own products to take advantage of the number of visitors our web site was receiving. Through a partnership with the world's largest map wholesaler, also located in Santa Barbara, Maps.com became a virtual map store. While not the first website to offer map products online, Maps.com is a leader in creating a professional, commercial, educational, and reference site built around maps. Beyond our own products (digital maps) and third party products (paper maps) we offer maps and lesson plans for educators through our Maps 101 subscription program. As a reference destination Maps.com offers driving directions, address finders, an online atlas, and links to other map and geography related web sites that deal with map topics we don't cover.

With the growth of the web and delivery through the online channel, MAGELLAN Geographix has come full circle and is making good on our original business plan to deliver maps to the world online. An idea that may have been ahead of its time, we were able to diversify and survive while the technology grew into place for the everyday delivery of maps online. We believe and share the vision that sooner than most people think the internet will be a standard business tool like the telephone and fax machine are today. As I'm fond of saying, "With more hard work, Maps.com can be an overnight success!"

map library bulletin board

Bowling Green State University Map Collection

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Bowling Green State University (BGSU) was established in 1910 and began offering classes in 1914 as a teacher training institution. Over the years the offerings have grown to include the liberal arts, business, pre-professional and professional courses including both Master's and Doctoral degrees. In the earliest pictures of BGSU there is a picture of a room used as the Library. A case with many small drawers appears in the picture and was probably used to house maps. That case, or at least its double, is now in the Map Collection housed in Jerome Library.

However, the Map Collection was not kept with the Library but was housed in the academic departments most likely to use the materials. Over the years this resulted in various levels of support. Finally in 1981, the library assumed responsibility for this collection and it was moved to the Library building. Most of the map cases were also moved and that is how we acquired a collection of all sizes and types including home made cases as well as vertical and horizontal commercially made cabinets.

Over the years the Map Collection has been a depository for the US Geological Survey (USGS), the Army Map Service (AMS), the Defense Mapping Agency (DMA), and the National Oceanographic and Atmospheric Agency (NOAA). After the move to the Library was made these depository arrangements were updated and renewed.

The changes in the depository system have complicated the record keeping but we continue to be a depository for government maps from USGS, the National Imagery and Mapping Agency (NIMA)-DMA's successor, and NOAA. We now also house maps received through our government documents department, such as Forest Service maps. We try to select materials which will be useful for our students and the surrounding community.

When the Library received the Map collection, there were many duplicates in the collection. We did a needs survey and decided what materials were needed and therefore what should be kept in the collection. We spent several years weeding out duplicates and superseded maps. We then arranged the materials in pseudo-G Schedule order in anticipation of eventual cataloging. Many years later we have finally achieved that goal and are now in the process of adding our materials to the on-line catalog. Some are being added through an OhioLINK retrospective project with Marcive records and we have also initiated a local retrospective cataloging project for pre-1976 government document materials and other non-government materials. Maybe in a decade or so all our materials will be available in the on-line catalog.

We have approximately sixty-five thousand items in the collection including, around 1000 atlases and 800 government document materials. The bulk of the collection is flat maps including maps at scales from 1:24,000 to 1:3,000,000. We have received some materials on microfiche and are now receiving some electronic materials. We are just beginning to get into electronic mapping and do not yet have the equipment to do much except look at information. We have a proposal in the works which would get us to the first stages of electronic mapping and hopefully we will be successful so that we are not left be-