A Brief History of Information Technology in Bloomington, IN: A Bicentennial Project of the Bloomington Information & Technology Services (ITS) Department

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The history of information technology in Bloomington is a story of entrepreneurship and innovation. It is a story of collaboration among government, business, education and nonprofit sectors. It is ultimately a story about the ways in which a community envisions its future.

The community's IT history has its roots in the early economic development of Monroe County. The county organized in 1818 and designated the town of Bloomington as county seat. Two years later in 1820, the state established the Indiana State Seminary a few blocks south of the town center. That institution became Indiana College in 1828 and Indiana University (IU) in 1838. After a fire, IU moved to its present location east of downtown Bloomington.

The developing town emerged as part of a regional economic and communication network. The New Albany and Salem Railroad began rail service in Bloomington in 1853, later connecting Bloomington to the north as well. Bloomington found itself along an important economic link between Chicago, the nation's burgeoning western metropolis, and the American South. The railroad contracted with Western Union Telegraph Company to build a telegraph line along the entire route, and in 1859 the Bloomington train station began offering public telegraph service. Indiana's position north of the Ohio River made it part of another kind of early network: the Underground Railroad. People who escaped from slavery and managed to cross the river could find supporters and hiding places on their journey north. Those who crossed in the area of Louisville and New Albany typically followed a network that approximated the

route of the railroad north through Salem and central Indiana toward Chicago, sometimes receiving help from a small group of supporters in Bloomington.

Reflecting the spirit of innovation that characterized the late nineteenth century, the local newspaper that began publication in 1877 adopted the name *The Bloomington Telephone*, a reference to the communication device patented one year earlier by Alexander Graham Bell. The city became connected in other ways in the late nineteenth century, gaining its first outdoor electric lights downtown in 1886 and its first telephone exchange in 1895.

Bloomington's industrial activity in late nineteenth and early twentieth centuries centered on limestone quarrying and the quickly growing Showers Brother Furniture Company. By the 1920s, Showers claimed to be the world's largest furniture factory, consuming more than 28 million feet of lumber a year in its production of bedroom furniture, dining room tables and kitchen cabinets. However, facing slower sales in the Great Depression and suffering from the effects of having expanded too quickly, Showers sold one of its Bloomington plants to the Radio Corporation of America in 1939. The plant's transition from furniture to electronics typifies the economic shift that occurred in many industrial communities in the twentieth century. RCA's Bloomington plant manufactured its one millionth radio in 1941, its first black-and-white television set in 1949 and the world's first commercially produced color television in 1954. After numerous expansions, the RCA factory became the largest color TV manufacturing plant on earth and Bloomington began promoting itself as the "color television capital of the world." RCA eventually sold the plant to General Electric, which resold it to the French company Thomson S.A., which in turn closed the plant in 1998 and moved its manufacturing jobs to Mexico.

Even as RCA was beginning radio production in Bloomington, IU was moving into early information technology under President Herman Wells. IU created the Central Statistical Bureau in 1940 to support faculty research, administration and teaching. It began with a keypunch machine, an IBM 405 tabulator

and an IBM 75 card sorter. IU established the Research Computer Center in 1954 and initially relied on an IBM Card Programmed Calculator (CPC) that performed calculations based on punch cards but had no memory. The university installed its first computer, an IBM 650, in 1956. IU updated its computing equipment several times in the 1960s and 1970s, moving into interactive computing through networked terminals and then microcomputing in the 1980s. The IU trustees took a controversial step in 1988 by requiring students to pay a \$25 per semester technology fee, but revenue from the fee laid the groundwork for IU's future growth in campus technology.

The Monroe County Public Library (MCPL) was likewise an early adopter of information technology, beginning with the move in 1971 from the old Carnegie library on Sixth Street to a new building on Kirkwood Avenue. Publicity surrounding the new building emphasized the library's role as a "community information center" offering many forms of media. The new building featured a Randtriever, an automated book storage and retrieval system built by computer manufacturer Sperry Rand. The MCPL's Randtriever was one of the first such library systems in the world. Until its removal in 1987 because of costly maintenance and frequent mechanical problems, the Randtriever was popular with the public. In 1976 a children's radio show on WFIU-FM featured "T. J. Bookworm," a character who was said to live inside the book storage system. Bloomington Community Access Television (BCAT), later named Community Access Television Services (CATS), began operations at the library in 1974. In 1995, a locally produced program, *J & B on the Rox*, became the first TV series on the internet; *Time* magazine called it the "first television show broadcast in cyberspace." The same year, HoosierNet, a nonprofit public access computer network created to provide local internet service in Bloomington, began operations at the library. In 1999, CATS, HoosierNet, and the City of Bloomington collaborated to stream city and county public meetings online.

The mid-1990s were a turning point in the rise of the innovation and entrepreneurship community in Bloomington. In 1995, officials dedicated the Indiana University Research Park in the former Showers Brothers Furniture Company Plant #1. Proposals for a research park had been under discussion since the 1980s, and completion of the Showers facility ultimately emerged from a cooperative venture by the City of Bloomington, Indiana University and CFC Inc. The restored furniture plant, with its distinctive sawtooth roof and freight loading doors, became home to Bloomington's City Hall. Part of the building was dedicated to IU's Advanced Research and Technology Institute, an organization that handled IUrelated business development, trademarks and intellectual property. Monroe County government offices later moved into that part of the complex. Other ventures addressing entrepreneurship emerged in the 1990s; Home Office Inc. was founded in 1995 to provide office services to small and home-based businesses, and the Bloomington Business Incubator opened its STAR Center (Start-up, Training, Assistance, Resources) to promote knowledge-based business and light manufacturing.

In 2001 the nonprofit Humanetrix Foundation Inc. formed to help technologists collaborate on public interest technology projects. Its first project was the Citizens Toolkit, a website offering sample ballots, information about candidates for public office and a mapping tool to find a voter's polling place. Humanetrix later launched The Combine, an annual technology and entrepreneurship conference; served as fiscal sponsor for the fist TEDxBloomington conference, a franchised, local conference affiliated with the international TED (Technology, Entertainment and Design) series,; and launched Ignite Bloomington, an event where speakers share personal and professional passions in the form of short presentations. In 2018 Humanetrix received a Community Foundation grant to launch the Hoosier Women in Technology initiative, including a monthly forum, events and professional development.

A key moment in the development of a local technology community came in 2008 when Bloomington hosted its first Startup Weekend at City Hall. Participants in the three-day event created a business

between Friday afternoon and Sunday afternoon. The weekend brought together technologists and entrepreneurs in a collaborative environment. The relationships established there inspired a range of future businesses and civic projects. The same year, local entrepreneurs founded Sproutbox, a team of product developers, creatives and business experts who work with high-potential startup companies in exchange for equity. One of Sproutbox's partner companies was CheddarGetter, manufacturer of plugand-play subscription management and billing software. In 2012, CheddarGetter helped ring the closing bell at the New York Stock Exchange. Other Bloomington businesses have matured from modest roots to commercial success. Internet publisher 1stBooks began producing e-books in 1997; it changed its name to AuthorHouse, expanded into print books, and in 2012 its parent company was acquired by international publisher Pearson. In 1963, entrepreneurs Bill and Gayle Cook began producing medical devices in their Bloomington apartment, and in 2017 Cook Group sold its biologics division, Cook Pharmica, to Caltent Inc. for \$950 million.

IU entered a period of rapid technological development with the appointment of Myles Brand as president in 1994, Michael McRobbie as vice president for information technology in 1997 and McRobbie as president in 2007. IU signed an enterprise licensing agreement with Microsoft Corporation in 1998, the first between Microsoft and a U.S. university, giving IU faculty, staff and students free access to Microsoft software. The same year, IU was chosen to build and run the operations center for the Abilene project, a fiber-optic computer network for the universities belonging to Internet2. Later that year, IU received a grant from the National Science Foundation to build a high-speed network connection with Asia and the Pacific Rim countries. IU received a \$29.9 million grant from the Lilly Foundation in 1999 to establish the Indiana Pervasive Computing Research Initiative. Also in 1999, IU established its School of Informatics, eventually merging the school with the Department of Computer Science and the School of Library and Information Science.

IU made advances in supercomputing as well, launching an IBM computer nicknamed Big Red, the fastest supercomputer owned by a U.S. university, in 2006. Big Red's successor, Big Red II, began operations in 2012 and became one of the 50 fastest computers in the world, making calculations at a rate of one petaFLOPS (a thousand trillion operations per second). IU began a series of digitization projects in the 1990s including an online collection of more than 2,200 photographs showing the U.S. Steel Gary Works, once the largest steel mill in the world. In 2013 McRobbie announced a \$15 million program to digitize and preserve the university's archival films, videos and sound recordings. IU Health's announcement in 2015 that it would build a regional academic health center on the Indiana 45/46 Bypass next to the IU Technology Park suggests the potential for advanced collaboration between information technology and healthcare.

The City of Bloomington, meanwhile, connected to the internet for the first time in 1996 and launched its website in 1997. The City's new Information and Technology Services Department (ITS), also formed in 1997, combined staff from the utilities department and other City divisions. In 2000 the City launched the first three-mile section of fiber-optic cable in its Bloomington Digital Underground initiative to install cable and conduit where road projects make that economical. The City has expanded its network infrastructure multiple times; provided fiber for use by Monroe County, MCCSC, MCPL, VIM, and Bloomington Hospital; and levered these assets to encourage the expansion of broadband within the community. In 2011 the City joined the Gig. U initiative, a consortium of universities and communities working to stimulate broadband expansion. Bloomington was chosen to participate in Google's Summer of Code in 2012, receiving funding to have two interns work on iOS and Android apps that allow residents to report issues in need of attention. In 2015 Code for America, an organization that promotes innovation in government technology, gave the City an award for its inRoads application, a web app that provides information about street closings and sidewalk repairs. In the same year, Bloomington received a Digital Cities Award from the Center for Digital Government, a national advisory institute on

information technology in local and state government. One further initiative set the direction for the City's future: the Trades District, a 12-acre certified technology park on the site of the Showers furniture factory, began to take shape.

As Bloomington celebrated its bicentennial year in 2018, the strands of the community's IT history came together in the launch of the Dimension Mill, a co-working space and business incubator in a restored building in the Showers furniture factory complex. Built in 1915, the Dimension Mill was where cut lumber from the Showers sawmill was shaped to the dimensions needed for furniture manufacturing. Workers transported the processed wood from the Dimension Mill to other plants in the Showers complex to be assembled into furniture. Under the nonprofit Dimension Mill LLC, the restored industrial building has become a center for entrepreneurship and innovation. The project, named simply The Mill, opened in the Trades District in November 2018. It represents a collaborative venture by the city and the entrepreneurial community. The Mill combines Bloomington's long-standing support for historic preservation with its forward-looking aspiration in technology, a living encapsulation of Bloomington's past, present and future.