

# Digital Region 1 Executive Summary

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*A plan for northwest Georgia to attract investment, grow businesses, increase prosperity, and support institutions with digital technology*

Today, we live in a digital economy in which success largely comes from getting the right technology and using it really well. Digital technology—software, especially<sup>1</sup>—is transforming what we do as well as how we do things. This applies to organizations in every sector. It is also true for regions and individuals. Indeed, it is true for *all of these together*: Organizations in regions with abundant digital infrastructure and digitally skilled individuals get and use technology better. The challenge is to align the availability of skills and technologies with organizations' changing needs. The purpose of this plan—*Digital Region 1 (DR1)*—is to build northwest Georgia's digital economy, to make sure digital technology resources and skills are available and used to attract investment, grow businesses, increase prosperity, and support institutions.

Currently, organizations spend approximately \$23,000,000<sup>2</sup> per year on digital technologies in northwest Georgia. While this number is impressive, research for this plan suggests that organizations are actually *under-investing*: Digital technology is used primarily to reduce costs, particularly by reducing the need for manual labor. Organizations seem to have invested heavily in hardware but not much in software or skills. So, northwest Georgia is not achieving anything near the full benefits of digital technology, and we don't have critical resources to realize those benefits. There is a lot of room for growth in northwest Georgia's digital economy.

Organizations need to lead, to drive the development of regional technology resources. The benefits of technology—whether from generating revenue, improving quality of life, or solving social problems—are realized via organizations. Technology and technical skills can be very costly. Organizations have reason and capacity to go digital. *It is up to leaders to say what their organizations are trying to achieve, how technology can help, and what is needed to join the digital economy.* This plan is a starting point for that process, focused on northwest Georgia's economic drivers and supporting institutions:

- Education
- Healthcare
- Local government
- Manufacturing

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<sup>1</sup> Software is key difference between the digital economy and digital technology. Computer code and digital data, especially on a large scale, enable automation and intelligence that simply has not been possible with traditional analog technologies. Phenomena such as ubiquitous computing, the internet of things, and big data are enabling unprecedented socioeconomic change.

<sup>2</sup> This estimate is based on total spending on information technology, services, and personnel reported in responses to the Organizational Technology Survey. Responses were analyzed for average spending per employee, broken out by industry. The average information technology spending per employee in each sector was then multiplied by the number of employees in each sector. This figure does not include spending for sectors that had no survey responses.

- Tourism
- Small business

As an economic development plan, DR1 must have measurable impacts on productivity and prosperity. For each of these sectors, and for the regional economy overall, the objectives of the plan are to increase:

- Technology investment and use by organizations
- The number and sizes of the region's technology companies
- The number of technology jobs and occupations
- Income & wages via digital leadership and workforce skills

### Strategic focus

The strategic focus of DR1 is to leverage hardware and infrastructure investments with complementary investments in software and workforce in order to promote top-line growth. Our research shows that northwest Georgia has generally very good digital infrastructure. Leading organizations in all sectors we examined have invested in hardware. The value of hardware and infrastructure depends on software applications and workforce skills, which depend on each other. Together, these things make it possible to improve processes and increase incomes, which generates resources and opportunities.

Advanced manufacturing and other basic industries drive this strategy, which builds on and supports education, healthcare, local government, non-profit agencies and small businesses. The rationale is basically “uses strengths to address weaknesses.” Manufacturing—along with other basic industries like tourism—is economically important because it brings capital into communities via purchasing, wages, and taxes, which support essential services and institutions. Nearly 25% of northwest Georgia’s employees are in manufacturing, compared to 9% for the state and nation.<sup>3</sup>

Northwest Georgia’s manufacturers are fairing well in the digital economy. Research conducted for this plan finds that manufacturers—particularly floor coverings—are aggressively adopting digital technology. They have invested heavily in hardware and are now focusing on software. They need more digital connectivity, advanced software and systems, and more technically proficient workers. Manufacturing and other basic industries can make technology investments without regulatory imperatives or voters to please, unlike education, healthcare, and local governments. Regardless, it can be difficult to finance technology investments.

The U.S. Department of Commerce recently recognized the importance of advanced manufacturing by designating the region a “Manufacturing Community” under the Investing in Manufacturing Communities Partnership (IMCP) program. This will allow the region to access federal funds to implement its advanced manufacturing strategy being prepared by the Georgia Tech Enterprise Innovation Institute, the Northwest Georgia Regional Commission (NWGRC), and regional stakeholders.<sup>4</sup>

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<sup>3</sup> Northwest Georgia Regional Population and Economic Assessment, included as an appendix

<sup>4</sup> Investing in Manufacturing Communities Partnership: Northwest Georgia Manufacturing Community, [http://www.eda.gov/challenges/imcp/files/IMCP\\_2\\_Pager\\_Handout\\_Georgia.pdf](http://www.eda.gov/challenges/imcp/files/IMCP_2_Pager_Handout_Georgia.pdf)

The Milstein Commission, a high-level study group on “new manufacturing,” recent report<sup>5</sup> noted that manufacturing is being transformed by digital technology. Their findings confirm ours: Lack of financing and workforce are major barriers to keeping up, particularly for small and medium enterprises. Many of their recommendations parallel tactics in this plan.

Education and healthcare organizations have invested heavily in hardware and infrastructure. Their software investments have either (a) been focused on cost reduction—e-texts are less costly than printed textbooks, for example—or (b) been driven by government mandate. Electronic health records (EHR) are a prime example. While EHR is intended to improve outcomes, those who participated in the digital economy planning process said that regulatory mandates have driven up costs and reduced productivity according. Both education and healthcare face perennial challenges with adoption and training.

One of the Regional Commission’s primary roles is to assist local governments with planning and development. Local governments and non-profit agencies have generally lagged behind in using digital technology, largely they lack resources to plan and develop those uses. It makes sense to focus on this sector because it has so much to gain. A major issue for local governments is development and support of basic industries. To this end, the Regional Commission operates the North Georgia Certified Development Agency, which provides financing for business startups and expansions. Another role for the Regional Commission is to administer the Workforce Investment Board. The Workforce Innovation and Opportunity Act of 2014 is intended to streamline workforce development, to make it more flexible, and to better align with economic development and education. The *Digital Region 1* plan’s focus on software and skills directly and indirectly addresses all of these roles.

The plan is to leverage investments by basic industries for broader and deeper investments by other sectors. Digital improvements in support sectors will provide basic industries with an educated and healthy workforce, safe streets, etc. In order to grow its digital economy northwest Georgia needs capital to deploy enterprise software, expand network access, and improve digital skills. Therefore, the *Digital Region 1* plan includes tactics to increase the availability of capital for intangible goods such as software and training.

### **The Digital Economy Planning Stakeholder, Process, and Findings**

The Digital Region 1 Plan came out of a six-month process of gathering information from leaders in these sectors. At least 211 organizations contributed to the plan, many contributed in multiple ways. The plan started from the premise that for the region’s economy to develop organizations must grow and improve. Digital technology can enable all of this. Is northwest Georgia digitally ready? Table 1 provides an overview of the region’s strengths, weaknesses, opportunities, and

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<sup>5</sup> “Building a Nation of Makers: Six Ideas to Accelerate the Innovative Capacity of America’s Manufacturing SMEs,” Milstein Commission on New Manufacturing, The Miller Center, The University of Virginia, June 2014, <http://web1.millercenter.org/conferences/milstein/MilsteinReport-Manufacturing.pdf>

threats for each area of digital readiness. It shows where organizations in northwest Georgia have put their technology dollars.

Generally, the region has a solid technology base of connectivity, hardware, and infrastructure. Many organizations in the targeted sectors have recently or are currently upgrading their computer hardware. Network service providers have extensive infrastructure in the region. Leading organizations in our targeted sectors are prospering with technology, particularly using it to reduce costs and improve efficiency. There are locations—including major commercial and industrial sites—that need better, more flexible, or even just basic network services. And, there are needs for on-going investment in hardware, particularly handheld, mobile devices.

The critical needs and opportunities are for software and skills. Northwest Georgia should focus on top-line growth via digital technology<sup>6</sup>. The hardware and networks for this is largely in place. Organizations in the region need better and more software, and technically skilled workers to build, deploy, and use the software. Technologists need to know operations in order to improve processes, replace old technology, and work with other professionals and customers. All of this requires capital, and it can be especially difficult to find financing for intangible goods like services, training, etc. These findings are summarized as an analysis of digital readiness strengths, weaknesses, opportunities, and threats in table 1.

### Digital Region 1: Growth and Improvement via Technology

The digital economy plan is to focus on “top line”<sup>7</sup> benefits of digital technology—how it can fuel growth and improve outcomes. It is important to continue using digital technologies to increase efficiency and substitute for manual labor. But, this does not increase economic growth unless workers are transitioned to higher-value work. Using digital technology for improvement to generate greater customer value drives demand for and investments in technical skills, in contrast with use that focuses on cost reduction. More importantly, top line growth attracts investment as it generates wealth, expanding the tax base, and providing support for local cultural and social institutions. The critical issues for Digital Region 1 are:

- *Engaging owners, top officials, executives, and other key decision-makers* in using digital technologies for top line growth and improvement
- *“Selling” people on digital technologies and technical jobs* in order to get broader and deeper digital skills in the region’s workforce
- *Increasing availability of capital to finance software and services* for improvements and innovations that increase customer value and revenue

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<sup>6</sup> “Digital technology” necessarily includes software—code and data—because it determines how hardware and infrastructure operate.

<sup>7</sup> “Top line” refers to gross sales or revenue and those factors that increase customer value or willingness to pay. In contrast, “bottom line” refers to revenue minus expenses, including factors that increase or reduce costs.

**Table 1. Overview of regional digital readiness strengths, weaknesses, opportunities, and threats**

Areas of Digital Readiness	<i>Internal</i>		<i>External</i>	
	Strengths	Weaknesses	Opportunities	Threats
<i>Business Operations &amp; Processes</i>	Bottom-line, Cost control, efficiency, and reduced need for manual labor	Top-line growth & revenue generation; difficulty and lack of financing	Lean production & startup and strategic innovation; multiple funding sources	Competitors leap-frogging, market foreclosure; funders focus on real assets and short-term job-creation
<i>Workforce Skills &amp; Capabilities</i>	Basic IT workforce	“Hybrid” IT; broad digital skills, deep technical expertise; information about workforce demand & supply	Abundant developmental resources, including informal and non-traditional	Strong demand and higher pay elsewhere, including adjacent markets (Atlanta, Birmingham, Chattanooga, etc.)
<i>Software Applications</i>	Enterprise systems of record (accounting, etc.)	Systems for differentiation and innovation	Emerging platforms for revenue growth and open-source applications	Lack of provider or vendor support for emerging “minor” markets
<i>Code &amp; Data</i>	Move towards analytics (e.g., EHR in healthcare and ERP in manufacturing)	Legacy systems, past transaction; data stuck on paper	Big data and cloud computing; new development frameworks	Lack of standardization; too many frameworks
<i>Network Connectivity</i>	Middle mile, basic connectivity to areas with strong demand; long-term, static connections	Last mile or 100 feet into locations without strong demand; short-term, flexible connections	Public-private partnerships for targeted infrastructure improvements	Other locations actively marketing digital readiness and high-performance networks
<i>Hardware &amp; Infrastructure</i>	Recent investments by providers and by major organizations	Virtualization, cloud, and bring-your-own-device; automation for SMEs	Low cost devices for end users and general purposes	Rapid depreciation and obsolescence; expensive, proprietary devices; platform diversity

Note: Each row in this table (“area of digital readiness”) corresponds to a layer in the “stack” model discussed in the Introduction section of this report. This model all the things needed for functional digital systems.

## Digital Region 1 plan: Executive Summary

Leaders should focus on how digital technology can improve their organizations and can grow in the region's digital economy. But, they should also understand that digital technologies present new types of threats even as they provide new and better ways to deal with old threats. Regional leaders should work together to develop, manage, and promote economic resources via digital technologies. Specifically, focus on location, natural resources, network infrastructure, and, of course, workforce to attract high-value, rapidly growing industries. The challenge with this is *innovation*. The targets for attraction and recruitment will almost certainly put a premium on innovation. The old "cheap land, cheap labor, y'all come" attraction and recruitment strategies are unlikely to work (let alone result in technology-based top-line growth). Leaders need to create or find innovative approaches to attraction and recruitment that fully capitalize on digital technologies.

Focusing on how the region is using digital technologies is an innovation. This approach requires information about the region's technology assets, but focuses on the impacts or value generated (benefits minus costs) rather than the technology itself. The practical functions of technology—what it does—would need to be clearly understood. The purpose of a "use approach" might be to identify these functions. A variation of this approach would be to identify best practices, case studies, and exemplars of digital technology uses from around the nation and world as benchmarks for comparison, or as models for northwest Georgia.

Essentially, the regional digital economy plan is to learn. Key decision-makers are aware of their need for knowledge, and want to know more about how to acquire and use digital technologies. They want to better use the technology and get better impacts. The dual focuses of learning for key decision-makers should be how to increase revenue with digital technologies, rather than just reduce costs, and how to improve workforce productivity by increasing technology skills. The challenge is that workers' skills must fit with *future* technology.

As the leaders are engaged in learning about digital technologies for top-line growth, workers must be developing fundamental skills that would enable that type of growth. These fundamental skills are creative, collaborative, and social as much as technical. Then implementation digital technologies for top-line growth must be done in a manner that layers deeper and more advanced skills on top of those fundamental skills. All of this depends on being able to finance and invest in digital technologies. Although the finance sector has been a leader in digitization, it is still fixated with real assets, making very difficult to fund services and software.

### Digital Development Strategies and Tactics

In order to build, grow, and strengthen northwest Georgia's digital economy first establish some fundamental resources, then explore and learn about how to make the most of digital technology, and finally make targeted investments via public-private partnerships that will catalyze additional growth. Each of the tactics below address one or more areas of digital readiness (refer to table 1). A work plan, including timeframe and cost estimates is included in the appendices. The DR1 plan

is to pilot tactics in a few places that have demonstrated support for digital development, work out the bugs, and then roll them out to the rest of the region:

**Strategy 1 Develop resources to promote & support digital development**

*Make sure we have what we need to grow northwest Georgia's digital economy, including expertise, financing, and marketing.*

**Tactic 1.a** Establish a team of technology champions from leading organizations in target sectors to share their expertise and promote digital technology

*Addresses: All areas of digital readiness*

**Tactic 1.b** Develop a technology financing program, leveraging commercial lenders and economic development agencies

*Addresses: Workforce Skills & Capabilities, Software Applications, Code & Data, Network Connectivity, Hardware and Infrastructure*

**Tactic 1.c** Provide a digital strategy template/tool for organizations based on information technology best practices

*Addresses: Business Operations & Processes*

**Tactic 1.d** Brand and market Digital Region 1

*Addresses: All areas of digital readiness*

**Tactic 1.e** Assess demand for and supply of digital skills, particularly for industrial automation and internet technologies

*Addresses: Workforce Skills & Capabilities*

**Strategy 2 Explore and learn about digital technology for top-line growth**

*Celebrate what we're doing with digital technology and discover what's possible in the digital economy*

**Tactic 2.a** Conduct "Grow Digital" programs for small businesses, non-profits, and government agencies

*Addresses: Business Operations & Processes, Software Applications*

**Tactic 2.b** Convene a few large conferences about how to make the most of digital technology

*Addresses: All areas of digital readiness*

**Tactic 2.c** Conduct multiple small hands-on workshops highlighting particular technologies to engage and inform leaders and workers

*Addresses: All areas of digital readiness*

**Tactic 2.d** Offer "externships" for students and job-seekers to explore tech occupations by helping others use digital technology

*Addresses: All areas of digital readiness*

**Tactic 2.e** Establish a network of "makerspaces" oriented toward automation and other top-line applications of digital technologies

*Addresses: Workforce Skills & Capabilities, Software Applications, Code & Data, Hardware and Infrastructure*

**Strategy 3 Make targeted investments via public-private partnerships**

*Build partnerships to divide the costs and multiply the benefits of deploying critical technology assets*

**Tactic 3.a** Jointly procure technology, particularly software and training for local government and non-profit agencies

*Addresses: Workforce Skills & Capabilities, Software Applications, Code & Data, Network Connectivity, Hardware and Infrastructure*

**Tactic 3.b** Create Wi-Fi clouds and “walled garden” websites for central business districts, cultural and recreation assets, public facilities, and other destinations

*Addresses: Code & Data, Network Connectivity, Hardware and Infrastructure*

**Tactic 3.c** Build “plug & play” high-performance network access into industrial and major commercial/office sites

*Addresses: Network Connectivity, Hardware and Infrastructure*

**Tactic 3.d** Conduct “open sources” demonstration projects, particularly with local governments, non-profit agencies, and small businesses

*Addresses: Business Operations & Processes, Software Applications*

**Tactic 3.e** Develop remote/rural broadband services

*Addresses: Network Connectivity, Hardware and Infrastructure*

Each component of this plan directly addresses one or more areas of digital readiness in order to achieve the overall goal and purpose of *Digital Region 1*. While the tactics can be implemented independently, each strategy builds on prior strategies and tactics. Each also has built-in benchmarks and milestones. The general objectives above provide metrics for these strategies and tactics so they can be tracked and evaluated against the digital economy plan goals. And, all of these tactics build on numerous efforts and resources in the region, particularly among educational institutions, to build the workforce, increase access to capital, and grow the region’s economy.

**Implementing DR1**

*Digital Region 1* fits well with the Regional Commission’s overall purpose and enables it to move into the digital economy, too. The Northwest Georgia Regional Commission currently has few resources to implement this plan. There are several practical ways to achieve the plans goals and objectives:

- **Make implementation collaborative, distributed, and open process.** Several goals can be achieved simply by repositioning existing programs or resources (financing, for example) or by building on and promoting standard practices and technologies. Be sure that anyone who wants to help has a clear and simple way to get involved and make a contribution. Working through existing organizations, such as Chambers of Commerce and development authorities, will make the plan go farther and faster. Use these



- relationships to build the public-private partnerships necessary to implement strategy 3.
- **Initiate DR1 in locations and with stakeholders that participated in the planning process.** Those who participated in the Digital Economy Plan process have demonstrated their interest in and understanding of the goals. An early stage of the implementation process should be to review the DR1 plan with them, and to dialog with them about specific tactical activities and outcomes. Identify how DR1 aligns with and complements existing activities, efforts, and goals.
  - **Ask for real buy-in and create sponsorship opportunities.** DR1 does a lot for organizations of all kinds, particularly local governments, Chambers of Commerce, etc. The Regional Commission should ask for real buy-in in the form of resources, or at least a commitment to act on and participating in executing the plan. One simple way to accomplish this is to seek sponsors for particularly activities or facilities, including in-kind contributions and promotions.
  - **Enlist the support of technology providers.** Digital development is, at the end of the day, business development for technology companies. They should provide funding and resources to execute the plan. This means implementation must have real payoffs for technology companies, but it also means they must be willing to educate and inform more than sell.
  - **Seek grant and other funding for particular tactics.** Many parts of this plan fit with the priorities of private foundations and public agencies, as well as the mission of the Regional Commission. Leverage IMCP and other funding wins to acquire resources for specific objectives. Make special efforts to reach out organizations that exist to promote digital technologies, skills, etc.
  - **Establish a unit to lead implementation.** While DR1 fits with the Regional Commission's purpose, it also goes beyond that purpose to focus on very different audiences, issues, outcomes, and even ways of working: Digital technology. The DR1 unit would have to be small and lean and catalytic. Its overall purpose would be to coordinate and enable others to drive digital development, primarily by convening events, developing resources, and disseminating information. Ideally, the DR1 unit would be able to leverage Regional Commission resources. It would also need the flexibility to develop and tap new sources of support, and to use different means to achieve evolving purposes.

The economy is now all caught up in digital economy. Prosperity for northwest Georgia means capitalizing on the digital infrastructure we have recently developed. In order to get good return on investments in hardware, we need powerful software and abundant skills. The software is available and the skills can be developed. The real challenge is to just understand what's possible, to get a vision for using technology, and to translate that into new products and services, expanded market reach, greater income, and higher profits, while enhancing quality of place. Such technology use will be a magnet for industry and capital investment, resulting in more and better job opportunities. That is *Digital Region 1*.