

Rural Research Report



Spring 2014
Volume 24, Issue 3

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Published by the Illinois
Institute for Rural Affairs

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Cross-Currents: Artists + Manufacturers Strengthening Place

The deep recession within manufacturing in North Carolina from 2001 to 2012 occurred in four key industries—(1) textiles, (2) textile products, (3) furniture, and (4) apparel—causing a 54 percent job loss within the sectors (Poole and White 2013, 4-5). As the financial crisis caused the national economy to plummet further in 2008 to 2012, North Carolina's manufacturing productivity and people continued to suffer. The manufacturing sector represents more than \$80 billion in the North Carolina GDP, making it the top contributor over other sectors and producing 84 percent of state exports. Nationally, in 2012, manufacturing accounted for 8.9 percent of total employment. In North Carolina, that share was 10.9 percent of total employment; and in rural areas, the share was even higher at 13.8 percent (Poole and White 2013, 4-5).

The job losses for rural-based workers in manufacturing appeared to be slightly greater than comparable urban job losses. (See chart below.) However, with 80 of 100 counties categorized as rural under federal guidelines, existing populations and workers are more disparate, often with no alternative jobs of comparable pay or skill within specific rural geographic regions. Thus, the severity of the economic downturns was critical to the stability of rural towns and populations, trends that have continued historically within the U.S.

Concurrently, state funding for the arts and artists steadily declined (National Assembly of State Art Agencies 2013, 3). State arts councils function as pass-through granting agencies to artists and arts organizations that employ artists. Employment for artists also diminished as sales slowed and private galleries closed.

Recognizing this pivotal shift, Art-Force explored developing ties for artists within the manufacturing sector to provide alternative sources of income for which their professional training and expertise could spur further product and economic development. Through research and extensive interviews with county economic development directors, Art-Force focused on small rural manufacturers in the Piedmont region of North Carolina to create new products cooperatively with professional visual artists and designers.

Table 1. Manufacturing Characteristics

	North Carolina	Rural North Carolina	Urban North Carolina
MFG jobs (2012)	438,982	221,776	217,206
MFG as a % of total employment	10.9%	13.8%	8.9%
Avg annual MFG wage	\$53,337	\$42,297	\$64,610
Avg annual private wage (excluding MFG)	\$40,425	\$32,458	\$44,826
MFG wages relative to private avg wages (excluding MFG)	132%	130%	144%

Source: Economic Modeling Specialists (see Poole and White 2013)

We sought artists who were also experimenting with innovative materials and technologies; were experienced in collaborations for urban space design; and whose prior career and creative achievements had been recognized by state and national organizations. Unique artist-manufacturer alliances were proposed following introductory meetings. The core manufacturing materials and processes were carefully matched to each artist's previous experiences with those materials. A textile artist, for example, was partnered with a canvas product company; a multimedia artist design team was allied with a specialty metals manufacturer; and a sculptor skilled in the use of iron, stone, and aggregate was partnered with an aggregate flooring manufacturer. Throughout the project, the artists maintained full professional careers in studio art or academics, and both artists and manufacturers understood that the project would have an accelerated timeline, testing the limits of possible accomplishments.

To increase economic returns, Art-Force strategically united previously unrelated interests—in this case, artists/designers with specialty manufacturers to conceive, design, and produce new products. Prior to contract discussions,

manufacturers were asked how they envisioned expanding their business models. The manufacturer of flooring tiles, for example, seeking to experiment with transitioning from two- to three-dimensional products, focused on a new line for the architectural market. The specialty metals fabricator indicated a desire for an independent company-designed product. The textiles/canvas company owner wanted to expand his offering of lifestyle products toward more contemporary, less traditional designs.

All teams participated in extensive orientation to the manufacturers' floor operations and materials to evaluate how new design solutions might expand the manufacturers' product and marketing base in viable directions. All parties shared the goal to stimulate job growth, strengthen local economies, and create revenue, which was formalized in the execution of a three-way contract among Art-Force, the manufacturer, and each artist. The contract detailed expected performance by deliverables and due date, financial compensation by quarter, roles and expectations of each party, intellectual property, dispute resolution, and other legal considerations.

History, Demographics, and Planning of Project City and County

The program was piloted as a project from 2012 to 2013 in three North Carolina towns (Greenville, Siler City, and Sanford), each of which has significantly different demographics, educational attainment, and per capita income profiles. The City of Sanford in Lee County is the focus of this case study, which explores the design process and alliance between the artists of Cox-Cannon Studio and WST Industries, the specialty metals manufacturer.

Lee County is a historic milling and manufacturing community located in the center of North Carolina; manufacturing represents approximately 20 percent of total county employment. The historic development of Lee County was heavily influenced by its Piedmont clay, which was the basis for the vibrant brick manufacturing that survives to this day. The red clay also led to the emergence of the pottery industry in the 1920s and 1930s. More recently, biotechnology and pharmaceutical industries have relocated to the county.

The City of Sanford in Lee County was selected because civic leaders had recently completed a comprehensive

Second Century Plan to guide future economic development, land use, and transportation that incorporated design standards with community identity. The Sanford Area Chamber of Commerce and Downtown Sanford Inc. each partnered with local organizations to implement the action plan, which promotes the area's vision for a vibrant and sustainable future, and markets the town to prospective residents, businesses, and visitors.

In addition, city and county populations are increasing (up an average of 1.5% in 2012 for the county to 58,732, and in the city to 28,094). Sanford has two railroads that intersect in downtown; three state highways run through the town; and the community supports an annual pottery festival, an artist's colony and gallery in the downtown historic district, and a renovated performing arts theater, as well as supports and programs downtown events. In 2013, a \$14.5 million bond was approved by voters for historic downtown improvements, streetscapes, and the expansion of the city's greenways and bike trails.

The First Six Months

Inspired by a plant tour where scrap sheets of steel were on the loading dock for recycling, the artist team suggested potential product designs that were lightweight and portable and would appeal to both youth and senior populations. They developed dozens of miniature paper models based on the standard 4' by 8' metal sheet dimensions used by WST. These models spanned a breadth of possible applications—from vertical light lanterns for exterior and interior use to benches, and from gates to tables with interchangeable parts.

Selecting several models to translate into steel, the team critiqued the results in terms of fabrication techniques, complexity, and cost. The final decision was to explore and prototype a family of tables. The artist team designed all components using CADD (computer aided drafting and design software) and transferred files to WST for the first stage of prototyping. Tables were fabricated using various gauges of steel and aluminum to explore contrasting styles. Sample products were evaluated for aesthetics, stability, ease of assembly, the potential to scale the tables, and the costs associated with mass production.

Factory orders and work schedules of the team challenged the momentum of the project and, consequently, prototyping proceeded at a slower pace than originally programmed. Exchanges and tensions during team meetings revealed differences between the artists and the manufacturing team, attributable to contrasting intellectual processes and vocabularies. Engineers were accustomed to functional, utilitarian solutions and efficiency in product delivery, while artists expected and applied a higher level of aesthetic scrutiny and refinement of detail. The resulting prototypes

did not attain the higher standard of artistic merit desired by design professionals, and the engineers were unaware of this disconnection. Furthermore, each subtle design change triggered extensive material and labor costs.



Team at WST Industries evaluating a table prototype (photo courtesy of Art-Force)

To address project concerns, Art-Force convened a mid-year meeting of the three artist-manufacturer alliances to collectively share their experiences and product directions. The manufacturers cited the ongoing challenge of recruitment and retention of workers skilled in the operation of high-tech equipment, welding, and quality control on the shop floor during production. The artists disclosed similar worries about the fabrication of the prototypes, made more acute because their expectations were based on hand-made works.

The Second Six Months

By January 2013, participants agreed on two table styles with a third style identified as an alternate. The team analyzed optimum dimensions and materials; modified artists' designs in CADD; and produced table tops, legs, and hardware. Assessments of stability determined that WST's software did not accurately read the CADD designs transmitted by the artists. Unintentionally, the digital languages within the alliance were out of sync as were the spoken languages of each profession noted earlier. Research and development (R&D) efforts often reveal surprises, and discussions with WST determined that their software was incompatible with designers and architects. Inadvertently,

the project had identified a roadblock to both design and quality control.

Workforce training in the production of the new products was always part of the Art-Force agenda. To that end, a new CADD program was acquired, and related staff training for implementation was completed; this more versatile design system was immediately incorporated into the project schedule. Final review of the prototypes and product pricing was provided in mid-2013 to enable production and the launch of a website for marketing and sales.

Civic Art

Implementing projects that would enhance the cultural vibrancy of towns and cities was a primary goal of the funding consortium. Given the shared professional expertise, the strategy of publicly locating a tangible product of the artist-manufacturer alliance was an appropriate response. The artists proposed reinterpreting the discarded steel panels they had admired on their first visit to WST. The civic artwork for downtown Sanford became six sheets of steel from which the first 24 table elements were made, representing both an efficient and beautiful demonstration of the alliance.

To successfully install the civic artwork required approvals and coordination among the artists, manufacturer, and the City of Sanford. A new multi-use area adjacent to a proposed greenway designed for the city's growing needs for parking, special events, and outdoor markets was identified as an ideal site. Three pairs of bright powder-coated steel panels were placed at vehicular entrances to the open area as permanent markers honoring the city's leadership



Civic art and public space dedication of bright-colored steel panels as a permanent marker of the artist-manufacturer alliance in Sanford, North Carolina (photo courtesy of Art-Force)

and pride in its historic downtown. The civic artwork's cut patterns in steel represent the first 24 table elements, illustrating an efficient and beautiful demonstration of the alliance and a tribute to Sanford's manufacturing industries.

Summary and Recommendations for Replication

The artist-manufacturer alliance is intended to stimulate the social and economic connection to place by partnering artists with small and rural manufacturers to design and generate new products within their factories. This program offers the potential to create new revenues and to stabilize or create new jobs and workforce skills. Artists took the lead on an accelerated R&D phase and, together, the team fabricated and engineered product prototypes. This pilot project was funded by ArtPlace America² in a 12-month grant that was extended with permission from the grantor to 18 months due to schedule and weather delays.

Nationally accepted indicators of direct economic impact and indicators of vibrancy include local stability of manufacturing critical to the job supply chain, applications for transferable workforce skills, retention of residents in the local community through meaningful employment, development of tangible products and services, and an expanded municipal tax base.

Indirect and intangible benefits include innovative strategies for economic development; job training and retooling for "what-if" opportunities; local pride in place, people, and product; respect for craftsmanship; and pathways out of poverty for residents and businesses. Rural communities

must target one or more of these approaches for economic revitalization. According to the Brookings Institution (2013), "Manufacturing policy is about innovation spillovers. . . . Proactive manufacturing policy better co-locate[s] production and design, sustain[s] the industrial commons that is so important to place-based regional economic growth, and ensure[s] the development of healthy and dynamic supply chain ecosystems."

The Art-Force artist-manufacturer alliance contributed both short- and long-term catalytic forces to the community's sense of place. The project was presented and promoted at civic meetings with elected officials, municipal staff, local and regional private sector organizations, and representatives of downtown development. In addition, Art-Force retained a marketing and public relations firm to assist with product push and informing the local community of the alliance and its efforts.

The initial WST goals were (1) increased and sustainable revenue accruing to the artists and manufacturer through product royalties, (2) new jobs for unemployed area residents or those seeking additional hours, and (3) local and regional supply chain (materials and process) dependencies. It is important to recognize that many variables for

“success” are influenced by national and international markets over which small manufacturing can only react to current conditions. For the Cox-Cannon Studio, we hoped that indirect income would enable them to pursue additional artistic endeavors that otherwise might not be realized due to constraints of time and money.

There are also short- and long-term impacts from such innovative programs. Short-term (one to two years) quantitative and economic measurements include manufacturer’s volume of locally sourced materials, manufacturer payroll, manufacturer’s annual sales, retrained positions and new hires, and financial investment in research and development. Long-term evaluative measures to show that the community demonstrates transformation (three to ten years) include employment rates, city and county populations, changes to city and county tax base, increases in public and private investment, downtown property inventory, downtown zoning applications and building sign permits, and façade program applicants.

In the short-term, the artist-manufacturer alliance provided WST with new ways of thinking about the plant, its intellectual and physical capacity, and its use of raw materials and equipment. Specifically, WST retrained and instructed nine people, representing more than half of their manufacturing workforce, in new technologies as a direct result of investment in upgraded CADD technology.

In addition, WST launched the WST Design Group (wstdesigngroup.com) to promote design projects and extend their manufacturing base. Recently, the WST Design Group has been in discussions with Caterpillar Inc. to create markers for their manufacturing campus similar to those created for downtown Sanford. WST has also retained a marketing firm to promote its new design interests, and the CADD software is in “constant use” as another tool to increase employee efficiency and business profitability.

Yet, perhaps one of the most significant contributions that the project brought to the company, according to Tim Skibitsky, President of WST, “was to open our eyes to what else we could be doing and making that align with our personal interests and corporate goals.”

The artist half of the financial equation will not be fully realized until the tables have been sold. There is a non-compete, non-disclosure agreement between Cox-Cannon Studio and WST currently protecting intellectual property and design processes. It is important to note that the artists generated more design concepts than the project could realize during 18 months.

Through the artist-manufacturer alliance, city and county economic development professionals and civic leaders recognized that the arts and creativity are powerful redevelopment tools. Further, by collaborating with complementary area businesses and organizations, the project indirectly supported and enhanced a long-term economic initiative directed by the county to help position Sanford as a site for innovative manufacturing.

Personalities, professional practices, and vocabularies are distinctively different for artists and manufacturers and can affect motivation and workflow. These traits and practices should be considered early through an interview process for potential partners, or by a more formalized orientation “boot camp” to align expectations for positive and realistic work relationships. When selecting a manufacturer (or other going concern) as a project partner, it is important to be aware whether the company operates entrepreneurially or is more comfortable as a small business enterprise, which can impact successful invention.

Artists may see their prototypes as art objects, whereas once an artist shares the design with the manufacturer, the design becomes jointly held and the manufacturer continues research, evaluation, and development for production efficiency. This is a critical transition in design that can challenge a partnership. In the final analysis, it is the manufacturer’s financial risk to undertake and generate new products. All owners acknowledged that the artistic design process made them look at designing products differently. It could be advisable to engage independent design professionals to critique prototypes early in the process, affirm market demand and pricing for possible new products during ideation, schedule the rollout of product lines for future consideration, and know the workforce skills required to produce the work.

Complex projects that bring together potentially opposing work styles, problem-solving methodologies, personalities, and pacing require agility and strategic thinking. These programs and projects demand hands-on, full-time professional project management. Managers must be highly trained in the arts and adaptable to the constantly shifting dynamics of experimental and innovative alliances.

Among project participants, it is vital to have a shared commitment to scheduling and educational priorities integral to program demands. Even when contractually affirmed, it can be necessary to reiterate that for a project to succeed, everyone needs to simultaneously focus on the same objective or problem. These types of projects demand thoughtful planning, design, and prototyping; it is necessary to know when to let creativity, happenstance, and experimentation drive the process and when to freeze-frame a specific direction or outcome. This is especially relevant

in an innovative design process, which rarely follows a linear sequence, and because digital technology facilitates accelerated production and delivery schedules. Success may be organic and unpredictable; it is, therefore, critical to summon emotional and financial resilience—if not genuine humor—during cycles of failure.

Ultimately, this project proved to be a vital and successful strategy for creating a social, artistic, and commercial connection to place and reaffirming the community's authentic identity.

Endnotes

- ¹ Art-Force Incorporated is a 501c3 nonprofit organization that stimulates and diversifies economic development in distressed communities. Art-Force allies artists, designers, and creative thinkers with entrepreneurs, small businesses, educational institutions, and local agencies to reaffirm connections to place through cross-currents of artistic design and production.
- ² ArtPlace America is a collaboration among 14 foundations, eight federal agencies, and six financial institutions dedicated to strengthening the field of creative placemaking. Toward this end, ArtPlace America has invested in projects in which artists and arts organizations play an explicit and central role in strategies to help shape their communities' social, physical, and economic futures. Participating foundations include the Barr Foundation, Bloomberg Philanthropies, Ford Foundation, The James Irvine Foundation, John S. and James L. Knight Foundation, The Kresge Foundation, The McKnight Foundation, The Andrew W. Mellon Foundation, William Penn Foundation, Rasmuson Foundation, The Rockefeller Foundation, Surdna Foundation, and two anonymous donors. ArtPlace America seeks advice and counsel from its close working relationships with the U.S. Departments of Agriculture, Education, Health and Human Services, Housing and Urban Development, and Transportation; the National Endowment for the Arts; and the White House Domestic Policy Council and Office of Management and Budget.

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