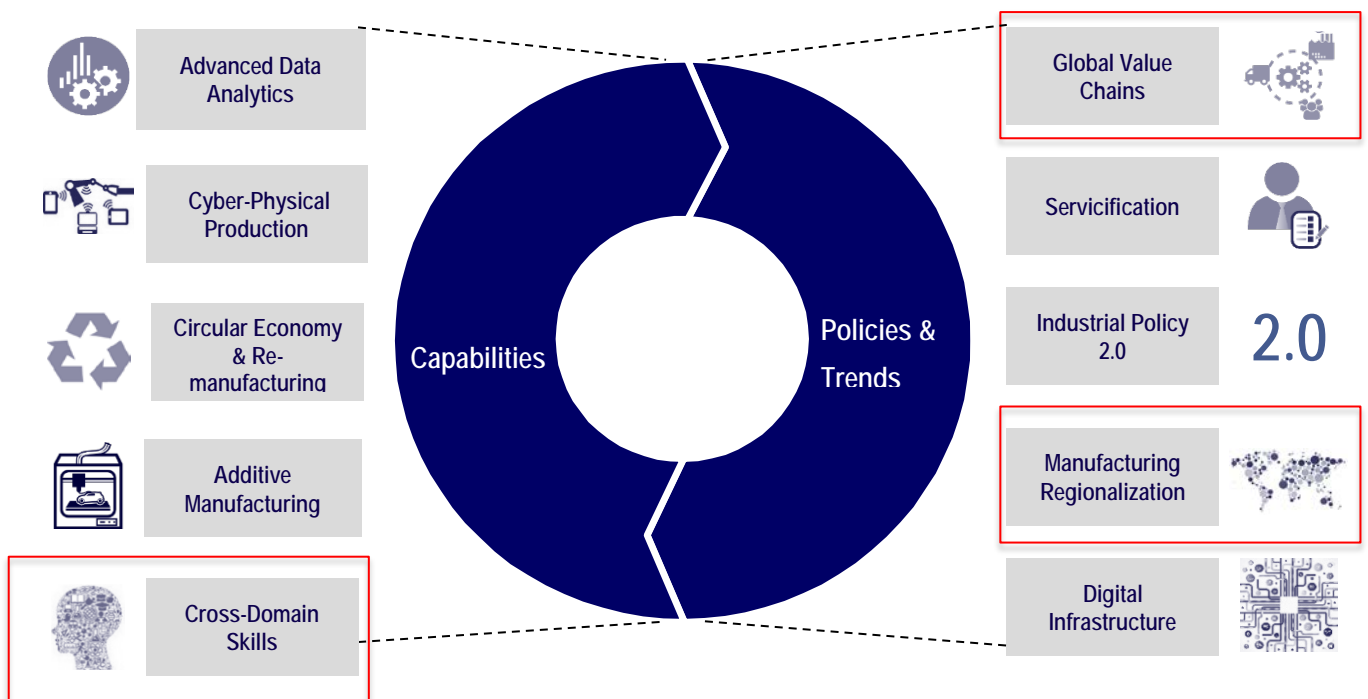


# Case 10

# Accelerating the Growth of Small and Medium-Sized Aerospace Enterprises in the Rockford, Illinois Region

## Drivers of the Future of Manufacturing



Source: World Economic Forum Global Agenda Council on the Future of Manufacturing, Whiteshield Partners framing



### 1. Challenge Confronted

The State of Illinois is the **fifth largest economy in the United States**, with \$589 billion in economic activity. The greater Rockford region is in the nation's top 10% for export intensity, with over \$3.3 billion in annual export sales, and is the nation's ninth largest employer in aerospace. It is home to five major tier-one suppliers, as well as numerous second- and third-tier firms. The aerospace industry comprises companies that produce military, commercial and space products, including aircraft overhaul, rebuilding, parts, distribution and services. **The region is recognized as a centre of aviation excellence**, which is supported by a system of supply chain partners and industry associations; it is also home to several military bases.

The following **challenges** were identified as critical to accelerate the growth of the aerospace cluster in the Rockford region:

- Boosting the aerospace cluster brand
- Developing a sustainable pipeline of STEM (science, technology, engineering, mathematics) workforce
- Innovating throughout the aerospace supply chain
- Encouraging the growth of new and existing aerospace companies

The region's many advantages represent a **tremendous opportunity for partnerships** to accelerate the growth of the aerospace cluster in Rockford.

### 2. Solution Used

The purpose of this project was **to accelerate the growth of the region's small and medium-sized enterprises (SMEs)** in the aerospace manufacturing sector. To meet this goal, a partnership between schools, business associations and government groups executed the following initiatives:

- Media placements and trade show participation to boost international visibility for the aerospace cluster
- A new, comprehensive aerospace database to enhance supply chain knowledge and collaboration
- Faculty consultation and a new Engineers in Residence programme to facilitate innovation, technology transfer and commercialization
- Mentorship and counselling for entrepreneurs and Stage One companies
- The 2 + 2 programme to create seamless, local educational pathways for aerospace careers
- University research and training programmes to enhance skills
- Expanded internships, company tours and mentorship activities to increase interaction between students and aerospace businesses
- The Joint Institute for Engineering and Technology-Aerospace (JIET-A), an innovative collaboration between higher education and businesses, to move students directly into aerospace internships and employment

## Accelerating the Growth of Small and Medium-Sized Aerospace Enterprises

**Dates:** 2011 – present

**Keywords:** skills, partnership, innovation, aerospace

**Authors:** Mansour Taherzhad [mtaherne@niu.edu](mailto:mtaherne@niu.edu) and Promod Vohra [pvohra@niu.edu](mailto:pvohra@niu.edu)

**Entities involved:** Northern Illinois University, Rock Valley College, Rockford Area Economic Development Council and Rockford Area Strategic Initiatives, Rockford Region Economic Development District, Rockford Metropolitan Area Agency for Planning, Workforce Investment Board

**Points of contact:** College of Engineering and Engineering Technology, Northern Illinois University

**Key facts:**

- The Rockford region has a strong, collaborative aerospace cluster that needs to grow to stay globally competitive.
- This project ties together the region's major needs and accelerates its ability to retain and increase jobs and start new businesses in the sector, focusing on SMEs.
- Engaging business associations, government groups and schools brought a rich array of resources to bear.
- A combination of market development, skill building and innovative partnerships is helping the project's success.
- Internships are critical for technical success.
- Engaging under-represented populations, including women and minorities, is important to build the STEM employment pipeline.

### 3. Lessons Learned



1. Project **success is derived from the merger of economic and social upgrading.**



2. A key driver of success was to **engage a diverse group of stakeholders** from educational institutions, businesses, federal and state agencies, legislators, and public and private partnerships.



3. The programme benefitted from the **participation of under-represented groups** including women and minorities.

### Description of the Work Performed

The purpose of this project was to **accelerate the growth of aerospace SMEs in the Rockford region.** The project team consisted of Northern Illinois University, Rock Valley College, the Rockford Area Economic Development Council and Rockford Area Strategic Initiatives, and partnerships with Rockford Region Economic Development District, the Rockford Metropolitan Area Agency for Planning and the Workforce Investment Board.

The Rockford region has a **strong, collaborative aerospace cluster** that is working together in new ways to accelerate SME job creation and innovation through working with prime and tier-one aerospace companies, such as Boeing, United Technologies Corporation, Woodward and others. This project undertook the following strategies to accelerate the relationships necessary to **build strong supply chains and advance Rockford region companies to compete in this globally growing market:**

1. Market the Rockford regional aerospace cluster more strongly on a regional, national and international basis
2. Impart technical knowledge to accelerate the advancement of SMEs through technology transfer
3. Bring disadvantaged populations into this sector to be the future workforce through education, training and internships

Specifically, the project included the following key initiatives:

1. Grow market awareness of the region's companies
2. Increase SMEs' technical capabilities to meet the growing needs of tier-one companies
3. Attract new qualified local graduates into the workforce

### Key Outcomes

Many local companies must recruit outside the region for qualified workers. This project ties together the region's major needs and accelerates its ability to retain and increase jobs and start new businesses. The project also accelerated working with under-represented populations where efforts have begun to target improvements in high school to college enrolment. Specifically, Rock Valley College has introduced a Running Start programme that provides an opportunity for students to complete their last two years of high school requirements at Rock Valley College and at the same time earn an Associate of Arts or Associate of Science degree. Internships are critical for technical success and local companies have been developing their

programmes. This project helped Rockford aerospace cluster companies to accelerate and advance their businesses through aggressive marketing, new technologies and access to a qualified workforce.

## Drivers & Enablers



Partnerships between business, government and schools



A sector-based strategy



- Market development
- Skill enhancement
- Product and process innovation

## Barriers

- It may be a challenge for universities in Asia (especially India) to **convince companies to partner on real-life projects**. Although university–industry partnership agreements are reached in India, these agreements are merely used to hire students who graduate from the programmes.