

**ECONOMIC DEVELOPMENT STIMULATION FOR SOUTHEAST MICHIGAN,
NORTHWEST OHIO, AND SOUTHWEST ONTARIO
VIA EMERGING GLOBAL SUPPLY CHAIN MANAGEMENT SOLUTIONS:**

OPPORTUNITY ASSESSMENT FOR A REGIONAL SUPPLY CHAIN HUB

FINAL REPORT – EXECUTIVE SUMMARY

SUBMITTED TO:

NEW ECONOMY INITIATIVE FOR SOUTHEAST MICHIGAN

Jointly Submitted by:

**Michigan State University
And
Detroit Regional Chamber of Commerce**

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PROJECT OVERVIEW AND CONTACT INFORMATION

Michigan State University and the Detroit Regional Chamber were partners in the effort to assist Southeast Michigan/Northwest Ohio/Southwest Ontario (SEMI/NWOH/SWON) in the transition from the manufacturing age to the information age. A team of senior Michigan State University supply chain management faculty along with faculty from Wayne State University and senior leaders from the Detroit Regional Chamber and industry collaborated over this six month project to identify and quantify the opportunity to guide SEMIS/NWOH/SWON to restore a leadership position in the new global economy by taking advantage of its unique cross-border positioning within in global supply chain. The project sought and synthesized input from regional supply chain leaders to identify and create a lasting supply chain management, information technology innovation, and processing capability that can create opportunities for global enterprises in the Southeast Michigan/Northwest Ohio/Southwest Ontario region.

This Executive Summary, which complements a detailed PowerPoint final report describes the process and explains how the project successfully assessed the opportunity regarding the supply chain value-add propositions and activities that can be used to stimulate the regional economy. The project concluded that through innovative development and promotion of global supply chain capabilities, significant economic development and job growth of more than 66,000 new jobs could be achieved for the region.

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PROJECT BACKGROUND

The geographic scope of the project included the region of Southeast Michigan and the neighboring regional locations which would benefit from the creation of a regional supply chain hub. The appropriate scope of the project was not only Southeast Michigan, but also includes Northwest Ohio and Southwest Ontario. The region or scope of the project is now described as the SEMI/NWOH/SWON region. The SEMI/NWOH/SWON region's location at the crossroad of North American economic activity, coupled with a comprehensive transportation infrastructure, offers significant opportunity for the region to create economic opportunity and jobs for its people by increasing trade and building on its world class transportation and logistics assets. The region's location on the border with Canada is a strategic international position that gives the SEMI/NWOH/SWON region immense opportunity to:

- Grow cross-border trade and increase the demand for trade services supported by both the public and private sector;
- Develop the human capital to design, guide and operate a 21st Century global supply chain hub by providing education and training to develop a world class supply chain workforce;
- Engage the freight and freight services community to identify business opportunities and help design supporting infrastructure;
- Advocate for policy changes at the local, state and federal levels to provide business incentives, improve the region's transportation infrastructure, and support smooth operation while assuring border security;
- Brand and promote the region as a center for transportation, distribution and logistics (supply chain management);
- Develop a research agenda and clearinghouse for related research to guide and assist firms and policy makers; and most importantly,
- Increase the number of supply chain sector jobs for the region.

While the target sector is traditionally known as logistics and transportation, the more comprehensive term today is supply chain management. Supply chain management incorporates activities relating to procurement, manufacturing, customer service, logistics, warehousing, transportation, inventory management, and related services. This sector offers significant economic potential and, based on research at Michigan State University, the economic multiplier for supply chain activities ranges from 1.8 to 3.0. Many North American cities and global sites have identified and targeted supply chain management as a regional competency. Memphis, TN and Louisville, KY have developed substantial economic activity using the supply chain solution capabilities of FedEx and United Parcel Service. Chicago, IL, Columbus, OH, Kansas City, MO and Indianapolis, IN have similarly used their cross-road locations from a highway and rail perspective to develop a substantial supply chain industry. Table 1 summarizes the supply chain management capabilities of each of these cities. Ireland and Singapore have used supply chain management as a method to drive economic development. It is also important to coordinate the relative opportunities for supply chain hub investments within the region. There are many sites within the region that are investing in enhancing their supply chain hub infrastructure. While there may be multiple opportunities, it is important to coordinate the investments to reduce the potential for redundancy.

Supply chain hubs begin as high activity transportation centers where freight is brought in from domestic and international locations and shifted from one transportation mode to another, e.g. water to rail, rail to truck, air to truck, to complete efficient delivery to manufacturers, retailers, and consumers. As the hubs develop, activities such as warehousing, inventory management, and light manufacturing begin to occur as a result of the convenience of locating near major freight hubs. Eventually, management expertise is necessary to guide, integrate, and synchronize these activities across firms, region, and globe. It is important to consider, however, that the major driver for supply chain activity levels is derived in that the demand for the supply chain activities is dependent on the ultimate demand by consumers for the products involved.

Table 1: Cities With Supply Chain Management Capabilities

City	Supply Chain Management Capabilities
Memphis, TN	Memphis was one of the first supply chain hubs building on its location as the global hub for Federal Express. The FedEx hub has attracted storage and processing facilities that can take advantage of the inbound and outbound movement of air freight. The educational needs of the region are supported strongly by programs at the University of Memphis.
Louisville, KY	Louisville was the second major supply chain hub building on its location as the global hub for United Parcel Service. The UPS hub has attracted storage and processing facilities that can take advantage of the inbound and outbound movement of air freight. The educational needs of the region are supported strongly by programs at the University of Louisville.
Kansas City, MO	Created an inter-modal hub including rail, motor, and air to facilitate movement and processing of goods throughout the central Midwest. The initiatives include a strong focus on education.
Chicago, IL	Chicago has always been a major manufacturing and distribution center due to its proximity to inter-modal transportation services and its population density. While this will continue, Chicago locations are being challenged by other sites due to increasing congestion.
Columbus, OH	Building on the Rickenbacker Airport and other inter-modal capabilities, Columbus has established itself as a distribution hub for fashion, electronics, and appliances. The initiatives include a strong focus on education.
Indianapolis, IN	Indianapolis is positioning itself as a less congested alternative for Chicago as a distribution hub particularly for electronics and parts. Indianapolis is focusing on cross-country rail and truck movements. This initiative has some focus on education but not to the degree that Memphis, Louisville, Kansas City, and Columbus have.
SEMI/NWOH/SWON	??

The SEMI/NWOH/SWON region has the potential for offering unique hub capabilities for many reasons. SEMI/NWOH/SWON's location on the North American continent makes it possible to increase the speed of moving goods while decreasing cost. This can be done by multiple modes of transport; air, sea, rail and truck. For example, using the Arctic Circle route to or from Southeast Michigan for air shipments dramatically reduces transport time to many places across the globe. The region has the existing infrastructure as well as the capacity to handle ever increasing business. It is located between Toronto and Chicago, two over-capacity centers; it has the capacity to handle all modes of transport; and it is already the busiest international trade border in North America. The region has the busiest border yet the most antiquated and substandard border-crossing infrastructure in North America. The region's unique location and capabilities make it a very attractive location to develop into one of the world's leading international logistics and supply chain hubs. These capabilities or unique advantages include its geographic advantage, existing assets in place, and a capable workforce.

PROJECT OBJECTIVES AND WORKSHOP DELIVERABLES

This Opportunity Assessment investigated the unique capabilities, economic viability and rationale for a supply chain hub for SEMI/NWOH/SWON. Key activities completed included: 1) Identification and design of forward thinking innovative features for the supply chain management hub to become differentiated as a world class hub; 2) Economic analyses to assess the economic multiplier impact for job creation; 3) Rationalization of opportunity of the supply chain management hub concept; and 4) Documentation of the appropriate products and industries and critical success factors for the regional supply chain hub plan

The Opportunity Assessment Work Plan consisted of four work streams: 1) Preliminary Analysis and Assessment; 2) Preliminary Economic Evaluation and Opportunity Assessment; 3) Supply Chain Hub – Stakeholder Feedback; and 4) Finalize Documentation and Issue Opportunity Assessment Report. Three project workshops were conducted on January 28, March 26 and May 6 at the Michigan State University Center on Woodward Avenue in Detroit to both complete each of these work streams and develop project buy-in. Each workshop was attended by key stakeholders from both the public and private sectors. Each workshop was attended by over 30 representatives representing users of supply chain services, providers of supply chain services, economic development personnel, and researchers. A primary objective of the workshop format was to cross-fertilize the different perspectives regarding the requirements and value added propositions related to supply chain hubs by industry, economic developers, and academics.

The initial January 28 workshop focused on identifying the unique capabilities and benefits for a regional supply chain hub and then reviewed industry sectors which might be attracted to the hub. Workshop two on March 26 validated the supply chain capabilities or design dimensions, determined the policies to enable implementation of the capabilities, and provided a preliminary assessment of the economic potential of the SEMI/NWOH/SWON supply chain related industries. The final workshop on May 6 focused on validating the supply chain strategy, targeted industries and economic potential, identified the economic development policies necessary for implementation, and outlined tasks for project implementation.

SCM STRATEGY, TARGETED INDUSTRIES, AND ECONOMIC EVALUATION

The supply chain management (SCM) strategy involved three components. The first is to build differentiated hub(s) which can attract industry activity to stimulate economic growth and job creation. The second is to attract industries to the supply chain hub to build economies of scale. The third is to facilitate hub development through private/public sector partnerships.

Building on the expertise of the supply chain professionals in the first workshop, the following SCM strategy elements were identified to provide the necessary differentiated capabilities for the SCM strategy. Eight unique strategy elements were identified.

- Ability to serve global markets
- Infrastructure and support capabilities
- Government regulations
- Competitive tax climate
- Availability of human, land, supplier, and financial capital
- Economic competitiveness and lowest total cost to serve
- Supply chain sustainability
- Collaboration and partnership

Further information regarding each of these SCM strategy elements is provided in the detailed PowerPoint final report presentation. The synthesis of strengths and weaknesses of the SCM strategy elements are noted below:

- ***Strengths of regional SCM strategy elements***
 - Good potential for cross-border distribution hub away from congestion of Chicago-Toronto
 - Good potential for trans-loading heavy imports from Halifax, Montreal or Prince Rupert for import from ocean ports with less congestion to U.S.
 - Good airport and highway infrastructure with limited congestion
 - While wage rates are high, skilled management and labor talent is readily available
 - Land and facilities readily available
 - Relatively inexpensive outbound motor carrier capacity
- ***Weaknesses of regional SCM strategy elements***
 - Located on peninsula unless cross-border movement is considered
 - Perceived or real high union wage scale
 - Perceived or real high gross receipts and personal property taxes
 - Infrastructure barriers and custom processes, particularly at border
 - Current industry sectors in recession
 - Poor perception of current capabilities
 - Lack of public/private partnership authority
 - Absence of regional government authority to coordinate and promote supply chain initiatives

Workshop two focused on identifying the targeted industry sectors for the supply chain hub based on the potential for: 1) Uniqueness of capability; 2) Economic development and job creation within the industry sector; and 3) Potential sector growth opportunity. Twelve industry sectors were prioritized and these sectors were then grouped into three major clusters focusing on

heavy manufacturing, light manufacturing and distribution. The twelve industry sectors grouped within their respective cluster are:

- ***HEAVY: Heavy Manufacturing and industrial cluster attracted to hub for resource efficiency and differentiation***
 - Automotive renewal
 - Alternative energy
 - Carbon fiber manufacturing
 - Chemical processing
 - Defense
 - Electronics – industrial
- ***LIGHT: Light Manufacturing and industrial cluster attracted to hub for resource efficiency and differentiation***
 - Food processing
 - Medical technologies
 - Water technologies
- ***DISTRIBUTION: Warehousing and consumer based industry attracted to hub market location for distribution and value added services***
 - Beverage and alcohol distribution
 - Retail importing and value add
 - Waste management

Table 2 outlines the value proposition associated with each supply chain strategy element for each of the three industry clusters.

Table 2: Value Propositions for Industry Clusters

SCM Element	Heavy Manufacturing	Light Manufacturing	Distribution
Ability to serve and be served by global markets	Technical skill and global air-motor-rail interface	Technical skill and global air-motor interface	Technical skill and global air-motor-rail interface
Infrastructure and support capabilities	Infrastructure and labor skill		Cross border highway junctions
Government regulations	Load limits		Load limits
Competitive tax climate	Ideal for heavy manufacturing		
Availability of human, land, supplier, and financial capital	Technical talent and global SC skills	Technical talent and global SC skills	Technical talent and global SC skills Available DC capacity
Economic competitiveness and lowest total cost to serve	Reduced cost of uncertainty due to less congestion	Reduced cost of uncertainty due to less congestion	Reduced cost of uncertainty due to less congestion
Supply chain sustainability	Minimal uncertainty Reliable weather	Minimal uncertainty Reliable weather	Minimal uncertainty Reliable weather
Collaboration and partnership	Strong private sector message		

The framework for the economic modeling activity focused on three distinct stages. Stage One focused on the current regional economic activity environment associated with SCM. Stage One reflect the current decreased level of economic activity. Stage Two economic development reflects the SCM activity following economic recovery. In effect, this activity level reflects the regional trends prior to the economic downturn. These trends reflect moderate growth but do not assume return to the traditional activity levels. This stage was assumed to occur within three years. Stage Three economic development reflects the enhanced economic activity associated with SCM scale and industry attraction. Stage Three is assumed to occur within seven to ten years and this stage considers economic development related to new job creation caused by the SCM activity versus taking credit for the job creation resulting from normal economic recovery actions.

Canadian data for the SEMI/NWOH/SWON economic modeling activity was not available to the project team as this information required a longer lead time to secure. The economic modeling results reflect the impact of the regional supply chain hub on the SEMI/NWOH region and one could assume that the impacts of including SWON into the analysis will increase the positive economic results.

Stage Three economic analysis results for heavy manufacturing forecasts creation of 41,200 new jobs and increased economic activity of \$5 billion annually. Stage Three economic analysis results for light manufacturing and distribution forecasts creation of 25,500 new jobs and increased economic activity of \$5.5 billion annually. Total Stage Three economic analysis results for all three industry clusters of heavy manufacturing, light manufacturing, and distribution forecasts creation of over 66,000 new jobs and increased economic activity of over \$10 billion annually. Table 3 summarizes these Stage Three results. Further information regarding each of the economic modeling results is provided in the detailed PowerPoint final report presentation.

Table 3: Enhanced Economic Activity Associated with Supply Chain Hub

Industry Cluster	Increase in Economic Development	Number of New Jobs Created
Heavy Manufacturing	\$5 Billion	41,200 New Jobs
Light Manufacturing and Distribution	\$5.5 Billion	25,500 New Jobs
TOTAL	Over \$10 Billion	Over 66,000 New Jobs

ECONOMIC DEVELOPMENT POLICIES AND COLLABORATION AND COMMUNICATIONS

To achieve the predicted results, the region must refine some economic and regulatory policies and enhance communications regarding the unique capabilities for each of the strategy elements. The assessment recommends policy refinements for the elements noted below. Further information regarding each of these policy refinements is provided in the detailed PowerPoint final report presentation.

- Ability to serve global markets
- Infrastructure and support capabilities
- Government regulations
- Competitive tax climate
- Availability of human, land, supplier, and financial capital
- Economic competitiveness and lowest total cost to serve
- Supply chain sustainability

Policy refinements are critical to the success of implementing the recommended SCM strategy along with collaboration and communication across all stakeholders.

An assessment of comparable regions showed success through a multi-stakeholder collaborative. Each region or state had a unique composition and the SEMI/NWOH/SWON region will require its own unique stakeholder collaborative. Some additional work should be done to determine the necessary representation, legal structure and investment model. Collaboration and communications are necessary to: 1) Increase awareness of unique regional capabilities; 2) Reduce redundant infrastructure investments; 3) Increase potential for critical scale through effective investments, borrowing and grants; and 4) Communicate a common and consistent message to potential clients.

PROJECT FINDINGS, RECOMMENDATIONS AND NEXT STEPS

The Opportunity Assessment has re-enforced the economic development potential for the SEMI/NWOH/SWON supply chain hub. The recommended policy changes and communication initiatives can generate 66,000 new jobs building on this SCM activity. However, there is the risk of additional job losses to the region if the hub development activity is not pursued.

The organizational model for the hub should include all impacted stakeholders; both public and private stakeholders. Collaboration and communications across and amongst all stakeholders is essential to the hub's success.

Key competencies to facilitate establishment and growth of the hub include supply chain expertise, economic development, collaboration, and grantsmanship. Each of these competencies is explained below:

- Supply Chain Expertise
 - Design of supply chain solutions to offer value add for industry
 - Monitor to assure effective implementation of solutions for industry

- Economic Development
 - Market and communicate supply chain solutions to targeted industries
 - Creation of industry partner communities
- Collaboration
 - Facilitate regional, multi-state, and international collaboration
 - Integrate stakeholders to work together to design, market and implement supply chain solutions
 - Monitor results to assure hub success; Jobs created and value created for industry
- Grantsmanship
 - Design regional physical infrastructure footprint for the supply chain hub(s)
 - Pursue funding to finance the infrastructure improvements

Maintaining momentum over the next few months will be critical to project success. Key steps to the next phase of the project include:

- Identify key public and private stakeholders critical for project implementation
- Continue with workshop meetings to implement project findings and recommendations
- Identify leader organization and governance to implement the supply chain and economic development strategies
- Pilot the implementation of the strategy by designing and implementing a supply chain solution for an industry

ACKNOWLEDGEMENTS

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