Industry Cluster Briefings Series

ADVANCED MANUFACTURING CLUSTER

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Overview

The advanced manufacturing cluster is an important component of New Jersey's economy, employing more than 119,000 people statewide. The advanced manufacturing industry is especially dependent on critical infrastructures like power, water, communications, transportation and supply chains. Disruptions in obtaining critical materials from a supplier or order cancellations can significantly impact production, revenues, and profits. A major disaster can have direct and indirect impacts through the entire supply chain. Following Hurricane Sandy, many New Jersey manufacturers experienced both direct and indirect disruption in their businesses. A Business Continuity Plan (BCP), hazard mitigation, and insurance can be critical tools to reduce risk and the resulting loss of revenue.

Business Continuity Overview for the Advanced Manufacturing Industry Cluster

Business Continuity is the creation of a plan to resume critical business processes after a disruption. Having a plan in place before a disruption, and practicing the plan, will enable a business to resume critical processes much more swiftly, efficiently and cost-effectively than an improvised response. According to FEMA, 75 percent of businesses that do not have BCPs fail within three years of a natural disaster.[1] Encouraging suppliers to demonstrate their continuity capabilities can also be a competitive requirement for future business – to provide more confidence in the suppliers' capacity to deliver on their orders. Integrating continuity planning up and down the supply chain can help identify efficiencies in "peace time" and build surety in production during disruption.

[1] http://www.usfa.fema.gov/pdf/efop/efo47103.pdf

Common risks and potential actions to reduce those risks for Advanced Manufacturing companies are identified below:

Risk	Potential Protective action
Denial of access to facilities	• Continuously update status on social media sites, website, and the press to let customers and employees know the current status and plans to get running, find temporary space if needed. • Work with local emergency management to participate in any available re-entry programs.
Loss of critical supplier capacity to complete orders	• Establish hard copy and electronic contact lists of primary and alternate suppliers (and competitors). • Establish contingency contracts with alternative suppliers.
Denial of access to key transaction and information systems (e.g. computer systems, credit card machines)	• Develop manual transaction processes to work with firm financial institutions and customer institutions. • Establish robust off-site data replication of key information systems and databases • Acquire alternative communication methods to support technology and transaction requirements.
Staffing deficiencies (access challenges, surge requirements, staff unavailable)	• Invest the time to ensure staff are appropriately cross-trained and experienced in carrying out any key aspect of your business (e.g. machinists are certified on multiple equipment platforms, staff in related divisions have hazardous materials training, etc.).
Loss of customer confidence	• Keep status of business updated on social media and the business' website; inform local media that your business survived the event. Reach out to current customers via email blasts and courtesy calls (if possible). If the location is no longer accessible, search for a temporary location nearby and publicize that address.
Vandalism and/or theft	• Develop plans with local law enforcement and emergency management to maintain security during a prolonged absence. • Invest in remotely accessed security and surveillance equipment.
Physical damage	• Develop contact lists of construction contractors, roofers, plumbers, landlords, building management etc. who can reliably respond to physical damage.
Disruption of customers operations	• Work with customers and suppliers to understand their continuity plans to appropriately set expectations for when and how those key links will be restored.

More information on business continuity can be found at these sources:

- FEMA Preparedness for Businesses
- SBA Disaster Planning
- FEMA: Ready.gov
- Red Cross Ready Rating
- Institute for Business and Home Safety

Many advanced manufacturing businesses will likely need a more complex BCP; examples of such BCPs can be found in the following links:

- IBHS Decision Track
- IBHS Advanced Tack Resources
- IBHS Supply Chain
- IBHS Logistics
- IBHS Incident Management and Crisis Communication
- IBHS Vulnerability Assessment
- IBHS Financial Controls and Resiliency
- IBHS Employee Awareness, Training, and Exercises

A reliable Business Continuity Plan (BCP) should be developed using a systematic, orderly approach. The questions below include processes any BCP should address.

Key Questions	How to proceed
What are our most critical processes?	Think of processes that are customer-facing, employee-facing or facilitate cash-flow.
Who performs these processes?	Create an employee call tree or employee accountability and notification system.
What do they need to perform these processes?	Create a list of critical tools, supplies, data sources, etc.
Where can the people who perform our critical processes work if our business-as-usual facility is unavailable?	If possible enable employees to work from home, put in place an agreement with similar businesses to reciprocally provide emergency workspace, create a list of local realtors who have appropriate space to lease.
How well do you and your employees know your plan?	Have all involved walk through the steps of the plan in a tabletop exercise. Identify gaps in the plan and fix them. Document fixes. Do this annually and this basic plan will be kept up-to-date and will improve over time.

Hazard Mitigation for the Advanced Manufacturing Industry Cluster

Hazard Mitigation is the assessment of the hazards that are most likely to strike a particular business type or location, and the creation of a plan to lessen the effect of those hazards before they strike[2]. The most common example of hazard mitigation is a fire alarm: the vast majority of all construction is vulnerable to fire, and advance warning of a fire hugely diminishes the risk of loss of life or property.

Each business should plan for the hazards they are most likely to face for example, a business in the Midwest is not likely to experience storm surge from a hurricane, so hurricane mitigation should be a lesser priority. Hazard mitigation is distinct from business continuity planning; hazard mitigation activities are undertaken before a disruption to physically reduce the effect or damage on the business. Hazard mitigation tools and resources are available from the following link to FEMA.

Examples of Potential Hazards	Examples of Mitigation Actions
Flooding	• Build with flood damage resistant materials: http://www.fema.gov/media-library-data/20130726-1503-20490-6330/fema15.pdf • Raise electrical system components: http://www.ready.gov/floods • Anchor fuel tanks • Install sewer backflow valves • Elevate buildings in low lying areas • Consider utilizing the National Flood Insurance Program (NFIP): http://www.fema.gov/national-flood-insurance-program
Loss of Power	• Invest in and regularly test an emergency generator: http://www.emd.wa.gov/preparedness/GeneratorSafety.shtml • Have battery-operated light sources on hand, keep stock of batteries: http://www.ready.gov/blackouts • Invest in an Uninterruptible Power Supply (UPS): http://www.energystar.gov/index.cfm?c=new_specs.uninterruptible_power_supplies, http://en.wikipedia.org/wiki/Uninterruptible_power_supply • Plug computer and electronic equipment into surge protectors: http://www.disastersafety.org/blog/surge-protector-and-power-strip-know-the-important-difference/ • Unplug any sensitive electronic equipment in advance of severe storms

[2]http://www.fema.gov/what-mitigation/federal-insurance-mitigation-administration

Hazard Mitigation continued:

Examples of Potential Hazards	Examples of Mitigation Actions
Strong Winds	• Utilize Exterior Insulation and Finish System (EIFS): http://www.fema.gov/media-library-data/20130726-1627-20490-4852/how2027_eifs_walls_4_11.pdf • Elevate items in house/business that could flood; bring in items from outdoors that could become projectiles: http://www.ready.gov/severe-weather • Protect windows and doors with covers: http://www.ohsep.louisiana.gov/factsheets/avoidingwinddamage.pdf • Reinforce or replace garage/loading doors • Secure metal siding and metal roofs • Secure built-up and single-ply roofs • Secure composition shingle roofs • Brace gable end roof framing
Fire	• Eliminate electrical outlet overloads: http://www.usfa.fema.gov/citizens/home_fire_prev/ • Test smoke detectors regularly: http://www.ready.gov/fires • Replace long-term use of extension cords with permanent wiring • Replace broken or frayed electrical cords • All employees now how and where to shut off electrical power • Separate incompatible materials (flammables and corrosives): http://www.lbl.gov/ehs/chsp/html/storage.shtml • Keep flammables in approved safety containers: https://www.osha.gov/dte/library/flammable_liquids/flammable_liquids.html • Use flammable liquids only in well-ventilated areas

Insurance Considerations Specific to the Advanced Manufacturing Industry Cluster

When purchasing business insurance it's important to obtain the right amount, and the right product for each type of manufacturing processes. Ensuring that a manufacturing company is neither over insured nor underinsured is critical. Coverage must be designed in consultation with key personnel and legal counsel.

Businesses can purchase bundled coverage, like the Commercial Package Policy (CPP). The CPP combines Commercial Liability and Commercial Property and some additional policies designed for specific industries. The Commercial Package Policy provides both property and liability coverage but has more flexibility to tailor the insurance coverage to the specific needs of a mid-sized to large business or a higher-hazard type of business. Making sure the CPP also includes Business Interruption Insurance, which is defined as insurance which covers the loss of income resulting from a fire or other catastrophe that disrupts the operation of the business, is critical for precision manufacturers, particularly due to the often high cost of specialized raw materials and inventory.

Commercial Property Insurance will provide coverage for any building owned or leased, including improvements and permanent fixtures and equipment, business property on premises and personal property of others in the "care, custody or control" of the company.

Manufacturers may need to add insurance coverage or inquire with their agent in regard to the following for day-to-day business or major disasters:

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Common Questions to Ask an Insurance Provider

Firms should have an annual insurance policy review with their providers. Included below are some common questions to ask during those reviews:

1. Which perils are or are not covered under the current policy?
2. What insurance regulation changes are coming in the next year?
3. What increases in coverage should be considered?
4. What is the provider's biggest concern with current insurance coverage?
5. Are there any additional options?
6. Are there any incentives or benefits available to businesses that have undertaken mitigation or continuity activities?

Questions Specific to the Advanced Manufacturing Industry Cluster to Ask an Insurance Provider

Because the risks associated with this industry can be unique, there are additional questions that firms should explore to start the discussion of how their insurance policy covers the firm's risk:

1. Are goods in transit that may be destroyed or damaged in a disaster scenario covered?
2. If there are buildings being constructed or equipment is being installed at the time of disaster, is there coverage available to cover those losses?
3. Can data loss or theft, in both disaster and non-disaster circumstances, be insured?
4. Is there coverage available for employee theft and embezzlement, including theft of intellectual property?
5. If new facilities or equipment are purchased, can coverage automatically be increased to cover their value?
6. Are accidents due to employee neglect or faulty equipment covered under the current policy?
7. Can the provider issue coverage for product liability, such as defects, recalls, or class action litigation?
8. Is coverage available for development and production costs for unique products damaged or destroyed in disaster?

(Insurance considerations cont.)

- Goods in transit destroyed or damaged
- Damage to buildings or equipment under construction
- Data loss or theft
- Employee theft and embezzlement, including theft of intellectual property
- Allowance of coverage increases for new facilities or equipment
- Accidents due to employee neglect or faulty equipment
- Product liability (defects, recalls, class action litigation)
- Development and production costs for unique products damaged or destroyed in disaster

The National Flood Insurance Program (NFIP)[3] was created by Congress in response to increasing costs of floods, primarily due to disasters. At the time NFIP was enacted, flood insurance was not readily available or affordable through the private insurance market. Congress agreed to subsidize the cost of the insurance so premiums would be affordable. NFIP was recently changed, and the following links provide critical information on the program and those changes.

- Flood Insurance Issues in Recovery
- National Flood Insurance Program and Reforms
- National Flood Insurance Program
- Building Higher

[3] http://www.fema.gov/national-flood-insurance-program