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## Lean Communities

Manufacturing and service organizations are increasing productivity and decreasing business cost with the application of lean techniques. Governmental organizations and other sectors can also create a “lean” community that is highly competitive in attracting and retaining businesses and a preferred place to live because of efficient services and low taxes. Promoting lean practices can help communities re-invent themselves, compete for jobs, and grow in the new environment of international competition and knowledge-based industries.

# Lean Communities

## INTRODUCTION

This purpose of this module is to discuss how the techniques of lean operations developed in private industry can be applied to local government and other sectors to create a “lean” community that is highly competitive in attracting and retaining businesses and a preferred place to live because of efficient services and low taxes. In today’s highly competitive global economy, the traditional economic base of many communities such as agriculture or manufacturing has been undermined or threatened by competition from lower-cost locations. Many communities must literally re-invent themselves to compete for jobs and grow in the new environment of international competition and knowledge-based industries. Promoting lean practices can help communities meet this 21<sup>st</sup> Century challenge successfully.

This module begins with an explanation of the concept of lean operations -- how it originated and why it is so important to the success of modern businesses and a host of other organizations. Next, the module explains how lean can be applied to the service and public sectors and why it is important for communities to embrace it. Finally, examples of communities and government agencies that have begun the lean transformation are provided. But first, let’s begin with the story of a site search for a new production facility and two cities, Pleasantville and Newtown.

**A “lean” community is highly competitive in attracting and retaining businesses and a preferred place to live because of efficient services and low taxes**

**A Tale of Two Communities: A Fictional (but Realistic) Account of Economic Development in the New Economy**

Advanced Medical Devices (AMD), a California-based company producing a new generation of heart pacemakers, was looking for a U.S. location to expand its R&D and manufacturing operations. Global demand for its product was growing significantly, outstripping its production capacity in California. The company wanted to find another production location in the US because of Federal Government regulations concerning the manufacture of medical products and because of the need for a highly skilled labor force that would help ensure quality control.

After a multi-state site search, the final decision came down to two communities in different states: Pleasantville and Newtown. Both communities met the “must have” site selection criteria: an educated and skilled labor force; a suitable and expandable existing building; reasonably priced utilities with redundancy to prevent power interruptions; proximity (1-hour drive) to a major commercial airport with good air freight service; and a high quality of life to attract and retain R&D personnel and executives from around the country. As with most site searches, once the list has been narrowed down to a handful of communities meeting the most important criteria, the decision often comes down to intangibles that may have to do with quality of life or the general “business climate.”

To make the final decision, executives from AMD visited both communities. They wanted to meet representatives from local government, businesses, public education, utilities, and other sectors to get answers to questions that cannot necessarily be quantified with numbers. They wanted to look elected officials in the eye and ask them about permitting and regulations and how they would help them if they needed to expand in the future.

They wanted to tour the local community college and other educational facilities to see what they looked like. They wanted to talk with executives already doing business in the community to get their perspectives on a number of issues. And, they wanted to see firsthand what life would be like in each community. AMD wanted their new facility to be operative as soon as possible since every day of delay would cost them thousands of dollars in lost revenue and profit. So, they wanted specific answers on how long it would take to get the appropriate permits, how long it would take the electricity provider to work with AMD engineers to install and test the specialized transformers and redundant delivery system, how the community college would set up the specialized training needed, and a host of other questions.

The visit to Pleasantville started out extremely well. AMD executives were impressed by the hospitality extended to them the evening they arrived. A special dinner was given in their honor at the local country club complete with an award-winning string ensemble from the local high school’s music department. The next day company executives met with a team of city officials, economic development officials from the local power company and community college representatives to discuss AMD’s specific needs.

Regarding permitting, the Company was told that while the City would work with them, there were established procedures for issuing permits that usually took 2 months to complete. The official from the power company said that AMD’s requirements were unusual and that they would have to check with their engineering department and customer service representatives to see

what the timetable might be. The Chancellor of the Community College said he was looking forward to placing students with AMD, but that there were regulations and timetables the College had established for developing a new training curriculum. In the afternoon, the AMD team visited executives from local businesses and were told that while Pleasantville is a beautiful city, the employees of most public and private organizations in the area seemed to be more concerned about following procedures than customer service.

The AMD team then flew to Newtown where they were treated to another nice welcoming reception, this time at the home of a local bank president. Early the next morning, they had a project meeting with the same kinds of attendees as the one in Pleasantville: city officials, utility executives, community college representatives, etc. They were a little disappointed by the responses they received in Pleasantville, but were resigned to the fact that it just took time to get things accomplished. So the AMD executives were delighted to hear that the necessary permits to operate could be obtained in Newtown in about a week, that the utility company could guarantee that the power requirements could be met by the time the production machinery was installed, and that the community college could begin a specialized training program immediately. Executives with local business confirmed in meetings that afternoon what the AMD team had heard in the morning: things got done efficiently in Newtown and the local workforce took pride in customer service and thinking outside of the box. The AMD executives were even more pleased when they found out that local property and sales tax rates were much lower than in Pleasantville.

As the visitors boarded the plane to depart Newtown, they asked the Mayor who was there to bid them farewell how the City could provide such good service and maintain low taxes. She explained that several years ago a Center for Lean Excellence had been established at the Community College to help make local businesses more competitive by teaching them to reduce waste and non-value added procedures, decrease cycle times, improve quality and improve customer service. Gradually, the Center began to work with local health care providers and other service organizations to help them operate in a lean fashion as well. The Mayor then campaigned on making the City itself a model of lean operations and low tax rates and was elected in a landslide. "Our local executives tell me that the lean, efficient services throughout our community in both the public and private sectors contribute to their bottom line, make Newtown a great place to live, and inspire confidence that when their products or services change in the future, Newtown will help them make the transition," she said.

As the charter jet took off, the AMD executives looked at each other and marveled at how easy the final location decision had been. As one executive stated "Had we known how efficient the city government and other service providers are in Newtown beforehand, we could have saved ourselves lots of time and travel expense." Another stated: "AMD has to adopt lean operating concepts to be competitive in the global market for electronic medical products, and there could be no better place for us to get even better at this than in a community that also embraces lean; I look forward to doing business and living in Newtown."

## WHAT IS LEAN?

The fictional account of AMD selecting Newtown as the location for its new R&D and production facility illustrates some of the key concepts of lean organizations: flexibility, attention to the customers' external (not the organizations' internal) needs, reduced cycle times, quality control and cost efficiency. Lean began as a "second industrial revolution" several decades ago (see accompanying box) and has become a competitive imperative for companies.

### **Origins of Lean**

In the 1950s and 60s Toyota started a second revolution in production technology. Until then, manufacturing technology was primarily based on assembly-line production invented by Henry Ford in the early 1900s. This technique was efficient for producing large quantities of an identical product, and affordable automobiles became available to the masses. Assembly-line mass production reduced labor cost by substituting capital for labor and using lower skilled workers who could perform repetitive tasks. As time went on, companies discovered that they could cut labor costs even more by automating repetitive assembly tasks.

In the latter part of the 20th Century, however, consumers began to demand fewer mass-produced products and more high-quality customized products. Automated assembly line production is not geared for this: it is inflexible, wastes materials and has a relatively high incidence of defective products. The Toyota production system reengaged what mass production had discarded – the mind of the worker. While machines (modern computers) can play chess, they cannot play basketball – humans are the most flexible machines in the world. Production cells and empowered workers began to supplant assembly-lines and mass production in many modern companies.

Non-value added steps in the production process were eliminated (who better than the workers to understand their own system and recommend improvements?).

Using techniques such as just-in-time inventory, six-sigma quality control and other tools, manufacturing became "lean and agile." This new production system is more flexible, reduces waste and improves quality. Lean operations and the Toyota Production System (TPS) were thrust onto the international stage with a seminal book by Womack, Jones and Roos (1990).

Lean can be described as "the minimization of waste while adding value to the product or process" (Womack and Jones 1996). Lean distinguishes between value-adding activities that transform information and materials into products and services the customer wants, and non value-adding activities that consume resources but don't directly contribute to the product or service. The types of

waste, or non-value adding, activities in the production of any product or service include:

- **Waste of Overproduction**
  - The waste of producing more than customers buy leading to excessive inventories.
- **Waste of Inventory**
  - The waste of excess materials, parts and assemblies purchased or produced in advance of when they are required.
- **Waste of Transportation**
  - The waste of the unnecessary movement of material or product.
- **Waste of Processing**
  - The waste of unnecessary or inefficient processing.
- **Waste of Scrap**
  - The waste of materials, labor and overhead due to defects and product rework.
- **Waste of Motion**
  - The waste of non-value added movement of workers and production machines.
- **Waste of Waiting**
  - The waste of waiting for instructions, material, tools, machinery, people, etc.
- **Waste of Underutilized Employees**
  - The waste of underutilizing the full physical and mental capabilities of all employees.

### **CONTINUOUS FLOW**

At its most basic level, lean production is about the even flow or smoothness of work free from starts and stops, bottlenecks, and large inventories of parts, materials and work-in-progress. Lean implementation is therefore focused on “getting the right things to the right place at the right time in the right quantity to achieve perfect work flow while minimizing waste and being flexible and able to change” (Wikipedia). Lean production of a product or service is driven by the customers’ needs (pull production or kanban) as opposed to internal production goals and rigid schedules. Consider this example:

Imagine that you are an automaker and that three American customers

have ordered blue cars with black seats and four Canadian customers have ordered white cars with red seats. The orders arrive while the factory is holding just enough red seats and black seats, blue paint and white paint, and car bodies and power trains to assemble the seven cars and ship them out the same day.

As the materials are consumed, they signal supply stations to replenish them at once. The supply stations then alert the suppliers whose trucks are driving several “milk runs” each day to deliver parts moments before they are needed. The whole supply chain runs like clockwork, perfectly synchronized no matter how variable the demand from customers. In this perfectly demand-driven world, there is no waste. The assembly lines make no more and no less than is needed right then and there. (Kerr 2006).

This example illustrates two commonly cited aspects of lean production: just-in-time inventory (JIT) and supply chain management.

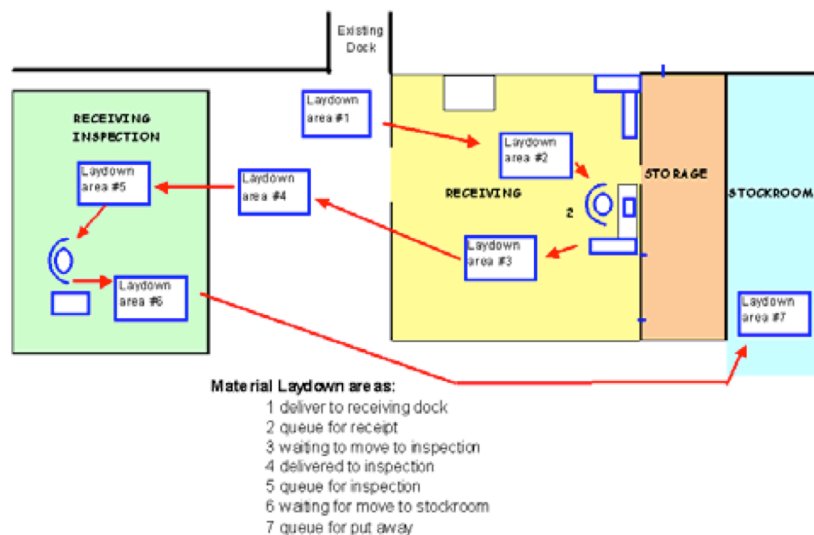
Lean production involves creating an ideal balance between automation and flexibility. While automation reduces labor cost, it can also reduce flexibility and increase complexity in a production process, hence creating waste. In lean operations, automation is replaced with “autonomation” which is automation with a human touch. With autonomation, machines are intelligent and flexible, allowing human operators to reprogram them instantly (indeed, they communicate with the entire production control system so in many cases they reprogram themselves) and they signal when they are working abnormally (a sign that production is deviating away from the ideal smooth flow).

The term “lean transformation” is often used to describe when a company or organization replaces their old rigid, assembly line internally-driven production techniques (sometimes referred to as “batch and queue”) with flexible, smooth-flowing, customer driven production techniques. Many companies and organizations do not succeed in this lean transformation because they transform only certain parts of the organization while ignoring others (Stamm and Pittman 2007). A few lean links in a chain full of weak links causing bottlenecks will still result in an overall inefficient operation.

## Lean Case Study: Electronics Manufacturer

An electronics manufacturer purchases thousands of different kinds of parts to produce a variety of products that vary with the seasons and consumer preferences. The individual components are generally inexpensive, but they must be carefully handled and cataloged to prevent damage and installation in the wrong product. The failure of a single component costing a few cents could lead to failure and serious damage to an electronic product costing thousands of dollars. In the company's existing process layout (first illustration), components are initially cataloged by receiving, then sent to inspection where they are cataloged again and inspected, and finally sent to the stockroom for storage. In this example, the material flow is non-linear with backflows and seven material laydown areas, which provide multiple opportunities for damage or misclassification. The proposed layout (second illustration) is more straightforward, saving time, inventory cost, errors and real estate.

### Existing Process Layout





## Proposed Layout

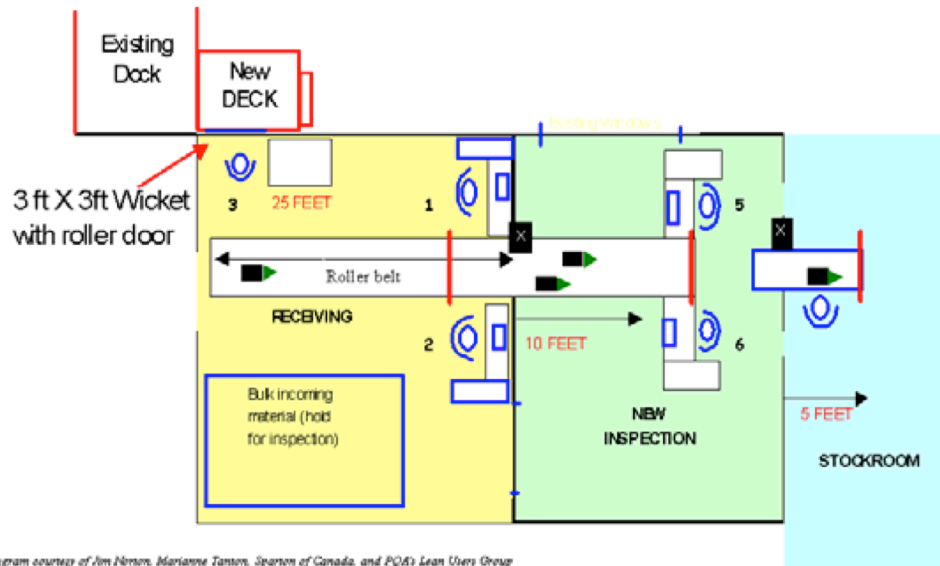


Diagram courtesy of Jim Hiron, Marianne Tanton, Sparon of Canada, and PQA's Lean Users Group

Source: Process Quality Associates.

### STEPS TO A LEAN TRANSFORMATION

A 5-step approach an organization can take for lean transformation has been proposed by Womack and Jones (1996) and adapted to service organizations by Abdi, Shavarini and Hoseini (2006):

1. **Specify Service Value.** Identify what the customer actually wants. The value of a product or service is defined solely by what the end-use customer wants and will pay for. In the case study above, the customer simply wants a reliable electronic product at the lowest cost. In the Tale of Two Communities, the customer was Advanced Medical Devices and they wanted quick permitting, utility service and workforce training. They got none of these in Pleasantville, but Newtown delivered.
2. **Identify the Service Value Stream.** What is the process for service design, development, procurement, distribution and sales for satisfying the customers' needs? How does the supply chain function? Where are the wastes? In the electronics case study, the excessive cataloging and movement of the parts does not add value for the customer. In service organizations, waste and inefficiency are introduced to value streams when staff members performing different steps of a task do not effectively communicate with each other, remaining in their "silos" focused on their small part of the process.

3. **Make the Service Flow.** Does the process involve “batch and queue?” Are there bottlenecks? Is there no clear line of sight through the process? If the answer to any of these is yes, then the aim is to reduce or eliminate these and move as close to a continuous flow as possible. The proposed layout in the electronics case study provides a non-wasteful value stream for getting parts into production to satisfy the consumer. Flow in a service context means to behave in a manner that minimizes delays or stoppages in the work performed by others. Common practices that cause delays include contradictory or confusing words or actions delivered by service managers or colleagues. Disruptive behaviors by managers or employees cause widespread frustration and reduce commitment, participation and co-operation.
4. **Supply at the Pull of the Customer.** The concept of pull in lean means respond to the pull, or demand, of the customer. In the example above of different configurations for cars ordered by customers, the automobile manufacturer has an ideal continuous-flow, just-in-time inventory system that responds throughout the production process and supply chain to changing customer demands. Lean service providers must also design their operations to respond to the ever-changing requirements of customers, while maintaining a smooth, continuous flow process with minimal waste and high quality. In the Tale of Two Communities, the City of Pleasantville, the utility company and the community college did not practice lean operations. For all three organizations, one can imagine the bottlenecks and lack of communication within and among the three entities relating to AMD’s need. Obviously the organizations were not capable of adapting to AMD’s unusual “need for speed,” nor were they capable of assigning AMD a higher priority in the queue due to its high level of importance and future positive benefits for the organizations and community as a whole.
5. **Practice Continuous Improvement.** As stated earlier, many organizations implement lean operations in one business unit or department at a time leaving weak links in the chain. This is not surprising since it is extremely difficult to implement a lean transformation across all units simultaneously. As long as the transformed units can maintain a focus on lean performance while less efficient sister units implement lean, then this piecemeal approach will eventually lead to a complete lean transformation. New tools and techniques, however, are always being developed to take lean operations to even higher levels, so organizations must understand that lean is a continuous process, not a one-time discrete event.

### Glossary of Lean Terms

Lean has its own vocabulary with many Japanese words. Here are a few key terms:

**Flow:** The progressive completion of tasks along the value stream, so that a product or service proceeds from design to launch, order to delivery, and raw materials into the hands of the customer with no stoppages, scrap or backflows.

**Kaizen:** Continuous, incremental improvement of an activity to create more value with less waste.

**Pull:** A system of cascading a product or service in which the supplier produces nothing until the customer signals a need.

**Value:** A capability provided to the customer at the right time at an appropriate price, as defined in each case by the customer.

**Value Stream:** The specific activities required to design, order and provide a specific product (or service) from concept launch to order to delivery into the hands of the customer.

**Value Stream Mapping:** The identification of all the specific activities occurring along a value stream for a product or product family (or service).

**Waste:** Anything that does not add value to the final product or service.

Source: Radnor and Walley (2006).

## WHAT IS A LEAN COMMUNITY?

Simply put, a lean community is one where lean principles are practiced in government and across the spectrum of community sectors – health care, education, business support services, etc. The Tale of Two Communities shows us the potential importance of lean operations for recruiting new businesses, one of the key components of economic development. Lean is also one of the best tools for retention and expansion of existing businesses (another key component of economic development) as the accompanying box illustrates. But in addition to economic development, adopting lean operations throughout the public and private sectors makes the community a better place to live and improves the quality of life for all citizens. Lean communities are the kinds of places that educated knowledge workers want to live, and they are a tremendous economic development asset in today's economy. As they say in Hollywood, build a lean

community and they (businesses and residents) will come.

What are some characteristics of lean communities that local governments can implement and businesses benefit from? There are many, but a lean community should have the following:

- A strategic plan with goals, objectives and action steps that promotes and supports lean enterprise programs in all sectors. Milestones should be specified and regular progress assessments performed.
- An organization that coordinates and champions lean throughout the community with a descriptive name such as “Lean City” (insert the appropriate city, parish or regional name). Creating a lean community is a very challenging undertaking, akin to the most ambitious community and economic development program. As such, the lean effort must have broad community buy-in and support. Funding through a public/private partnership should be secured to create and support a Lean City coordinating organization. Without private sector support, most communities could not afford a lean program. Private sector participation also provides continuity to the program as administrations change. The Lean City organization should:
  - Serve as the focal point, coordinator and champion for all lean activities throughout the community, much like an economic development organization functions to create jobs and coordinate all economic development activities.
  - Advocate lean in all sectors and educate business and community leaders on its importance; provide educational programs on-site at local businesses and organizations.
  - Work proactively with local businesses and organizations to help them with lean transformations, including consulting and facilitation if funding allows.
  - Support nationally recognized lean certification programs for industry such as those offered by the Society of Manufacturing Engineers and the Institute of Industrial Engineers;
  - Offer certification for organizations that do not fall under existing national programs as an incentive to transition to lean;
  - Stay abreast of the latest research and practices in lean engineering and communicate this to local businesses and organizations;
  - Offer a directory of lean tools, resources and training opportunities;
  - Revise and update the strategic plan for lean transformation on an annual basis. Issue regular reports on milestones met (and missed) and progress made on the plan;
  - Identify sources of grants and funding for lean research and

transformation; serve as the main fund-raising organization for the lean initiative.

- Work closely with the new state Lean Center of Excellence (LCE) at the University of Louisiana at Lafayette<sup>1</sup>. While LCE was initially founded to support manufacturing operations throughout the state, it now has many non-manufacturing clients including service organizations in the public and private sectors. It can serve as a supporting partner to the local Lean City organizations covering individual communities or groups of communities in close geographic proximity.

While the state LCE will be a key ally to communities in the lean transformation process, the ultimate responsibility will rest with Louisiana's communities and parishes. It is not feasible for one state center to work close enough with local business and organizations throughout all of Louisiana to effect lean transformations. Since the lean initiative and commitment must be community-wide to be successful as described above, the main facilitating organization must be the local Lean City organization which is familiar with and in close proximity to local businesses and organizations. The relationship between LCE and the local Lean City organizations will be similar to that between LED and local and regional economic development organizations: strong initiatives at the local level with the state organization playing an overarching supporting and enabling role.

Also like economic development agencies, the Lean City organizations might serve a city, parish or region, depending on the population base and political situation. Many smaller cities and parishes would be better off joining regional lean coordinating organizations because of resource requirements and economies of scale. Communities and parishes will have to weigh this tradeoff: the population base covered must be large enough to generate the necessary resources to support a Lean City entity, yet small enough to allow familiarity with and custom services to businesses and organizations in the territory.

The Lean City organization could be an entirely new entity, or it could be part of an existing organization such as a Chamber of Commerce or a stand-alone economic development agency. It could also be a department of city or parish government. However, since it is recommended that the Lean City organization be a public/private organization, again like economic development, preference in many cases might be given to establishing a separate non-profit Lean City organization.

<sup>1</sup> The Lean Center of Excellence is a joint venture of Louisiana Economic Development (LED), the Association for Manufacturing Excellence (AME) and the Manufacturing Extension Partnership of Louisiana (MEPOL). The Center will not only educate private sector companies but also educate and facilitate the positive transformation of municipalities and other government entities in Louisiana'

### **Lean as a Business Retention and Expansion (BRE) Tool**

In the course of conducting an economic development assessment in the Athens, Georgia region, a consultant identified a powerful example of a successful business retention and expansion program. During an interview at a local plant that employed several hundred persons, the manager stated that corporate headquarters had almost decided two years ago to shut down the facility due to low productivity. He went on to say that, if not for the Center for Continuous Improvement's help with increasing productivity, the axe would have fallen.

Hearing such a strong testimonial, the consultant investigated and discovered that the Center for Continuous Improvement was founded at the Athens Technical Institute in response to the needs of several local companies. These needs were discovered in the course of BRE interviews. The main symptom was that productivity was lagging at many of these facilities. In both manufacturing and service sectors, these companies' managers knew they needed to improve productivity and quality but lacked the knowledge and/or resources to implement an improvement program by themselves. At the suggestion of Athens Tech, several local companies agreed to combine resources and establish the Center for Continuous Improvement. The Center would work jointly with the companies to improve productivity and quality.

The Center became a research, training and implementation resource for Total Quality Management (TQM), and lean operations. Each member company working with the Center was able to accomplish the following:

- Instill team culture throughout the facility;
- Create a vision and values;
- Perform cycle time studies resulting in improved quality, less waste, and higher productivity;
- Implement ergonomic practices to reduce injuries and cycle time;
- Improve customer service; and
- Improve purchasing and material management techniques.

The Center continues to serve as a focal point for research and training in lean operations. Member companies help each other, sharing ideas and visiting each other's facilities. This example demonstrates that productivity and quality can be dramatically improved in local companies by adopting lean operations, increasing the likelihood that companies will remain competitive, stay, and grow in a community. The revolution in management and production techniques required to achieve this can take place using local resources. Through BRE programs, economic development agencies can be a catalyst to make this happen. For more information on this case study, see Ford and Pittman (1997).

As noted above, one of the guiding principles of lean is customer service. Everything is driven by customer needs and market demand. Lean enterprises constantly assess whether their processes and products are serving the customer (outwardly focused) or being driven by internal dynamics (inwardly focused). All too often governments are inwardly focused and fail to address the needs of local businesses and citizens, which usually leads to a bad business climate as exemplified by Pleasantville.

Some of the services and benefits a lean community can offer new or established businesses include:

- Excellent government services --- utilities, fire and police protection, transportation infrastructure, etc. --- even more responsive to the needs of businesses and citizens.
- Low tax rates through lean, efficient government.<sup>2</sup>
- One-stop shops for business services including permits, zoning/land use, incentives, etc.
- Assistance with lean assessments and transformations through the lean clearinghouse. Many businesses, especially smaller ones, do not have the knowledge or resources to complete the lean transformation. Since lean is a competitive imperative, these businesses are in danger of becoming obsolete (see the Athens, GA case study above).
- A strong partnership among government, businesses and educational institutions to provide workforce development programs responsive to business needs and changing economic conditions.
- Business retention and expansion services for local companies. Businesses may relocate away from a community or fail to expand there because of relatively minor issues that could be resolved with local support and assistance. Local government that is customer-oriented and proactive in working with businesses to meet their operational needs and facilitate future growth by providing adequate infrastructure, industrial sites, etc. can be a real competitive advantage. All too often business expansions are thwarted by inadequate infrastructure or other local government services with serious financial consequences to companies.

In short, a lean community can provide an excellent business climate and quality of life with customer-driven public services, low taxes and a public/private partnership that works closely with businesses and other local organizations to help them attain a lean, competitive status.

<sup>2</sup> Lean government does not necessarily imply job cuts for public employees. Rather, it implies that existing employees and agencies will perform at a much higher level and government services will be much improved. If local government does decide to “downsize” as a result of adopting lean, it could do so by attrition, not layoffs. Such decisions would be up to local elected officials and voters.



## EXAMPLES OF LEAN IN THE PUBLIC AND SERVICE SECTORS

Since lean began and has evolved mainly in the manufacturing or goods producing sector, our introduction to lean in this module has been largely in that context. However, in the past few years, lean principles have been increasingly applied to service organizations and governments. A study by Warwick University in England found that lean methods are applicable to the public sector, but that often government bodies approach leans in a more piecemeal approach using selective tools, as opposed to a holistic, enterprise-wide transformation. (Radnor, Walley and Stephens).

Research has also shown that public-sector organizations that integrate lean transformation into their overall improvement or capacity-building strategy and have strong management involvement are more likely to be successful. “Similarly, organizations with a history of managing change, which had previously tackled process change and were able to build effective, multi-disciplinary teams across traditional organizational barriers, had the greatest capacity for lean improvement” (Radnor and Walley 2006). This makes sense as the lean transformation process often has to struggle against the natural tendencies of organizations and staff members to resist change, maintain current practices and stay within the “comfort zone.” Therefore, change management is an integral part of successfully implementing lean operations. Two examples of successful lean operations in public sector entities are given below.

### **CONNECTICUT DEPARTMENT OF LABOR**

In 1999, the Connecticut Department of Labor (CTDOL), decided to engage the services of an outside lean consultant to provide services to businesses and residents of the State more efficiently and cost-effectively (Hasenjager 2006). The consultant and CTDOL established numerous cross-functional teams to:

- Identify customer values and needs;
- Map out and analyze departmental processes and procedures;
- Review and implement team building skills;
- Supervise simulation of lean techniques; and
- Review lean principles and theory.

The lean teams worked to eliminate unnecessary paperwork, approval processes, worker actions, information retrieval, backlogs and confusing forms using practices employed by manufacturing enterprises to implement lean: just-in-time inventory, “poka yoke” mistake proofing, pull production, visual control, and value stream mapping and flow. The results were significant:

- 119 steps eliminated, redesigned or automated;
- 1,181 cycle time hours eliminated, redesigned or automated;



- 33.5 staff hours eliminated, redesigned or automated on a unit basis for four processes; and
- More than \$500,000 in staff time saved over the course of a year.

The lean transformation was achieved in just three months. In 2000, CTDOL won the Platinum Award for Innovation from the Connecticut Quality Improvement Award Partnership, the first and oldest state-level Malcolm Baldrige National Quality Award for Performance Excellence organization in the country.

Because of the success of this initial lean initiative, CTDOL decided to use lean techniques to figure out how to eliminate two separate and duplicative systems to detect fraud in the state's unemployment insurance program. This situation resulted in employers often having to fill out duplicate forms on a regular basis. Using the same lean transition techniques and team approach, the Department was able to integrate the two systems with the following results:

- 10,000 duplicate forms to employers per year were eliminated;
- 3,387 staff hours per year were eliminated;
- \$151,158 in staff cost was saved per year and redirected to fighting fraud (customer value added);
- 10,000 satisfied employers through savings in time, money and frustration;
- Enhanced worker respect and an empowered staff.

### **CITY OF SANDY SPRINGS, GEORGIA**

The residents of Sandy Springs, adjacent to Atlanta, voted in 2006 to incorporate and provide their own services rather than rely on Fulton County. With incorporation, Sandy Springs became the 7th largest city in Georgia, with a population of 87,000 and four Fortune 500 company headquarters. The City decided to outsource its operations and employees (with the exception of fire, police, elected officials and department heads) to a private firm in order to be fully operational in just a few months. The private firm that won the contract hired almost 200 new employees and now performs most all city functions including permitting, traffic engineering, tax collections, infrastructure and information technology.

The private firm has instituted lean operations for Sandy Springs, providing better services at a lower cost. For example, the contract requires the firm to meet strict performance criteria such as answering all calls to the City on a 24 hour, seven days a week basis with a live voice. Citizen complaints and issues must be addressed within a prescribed time period and residents must receive follow-up calls to make sure their issues have been resolved. By correcting and updating the tax roles, hundreds of thousands of dollars in unpaid tax levies have been collected.

These superior services are provided at less cost to the taxpayers --- both citizens and businesses. Two other new cities in the Atlanta area, Johns Creek and Milton, also outsourced their operations to the same private firm, and through shared services such as call centers and code enforcement, economies of scale and significant savings are realized. The firm handles human resource issues since the company employs the city workers. The University of Georgia has estimated that the City of Sandy Springs annually saves \$20 million through lean operations. This represents a savings of approximately forty percent over what it would cost the City to provide its own services (Pittman and Stamm 2007).

These two examples were chosen purposely to illustrate how the transition to lean operations was handled differently by different governmental entities. The City of Sandy Springs chose to outsource most of its operations in order to provide new government services in a lean fashion. But, as the example of CTDOLE shows, governments do not necessarily have to outsource to achieve lean operations: they can do it from within. Indeed, the potential threat of outsourcing should give government agencies strong incentive to adopt lean operations.

### Implementation Steps

As noted previously, the lean community process is similar to comprehensive community and economic development initiatives and should be approached in a thorough, ambitious and inclusive way. To implement lean, therefore, communities should utilize the principles and processes in Module 1 - Introduction to Community Development. Here are some recommended steps Louisiana communities and parishes should follow to implement lean:

- Form a committee to begin public dialogue on the lean transformation. The committee should be composed of trusted elected officials and private sector representatives. The committee should be inclusive and reflect a broad cross-section of community residents. The committee's activities should include:
  - Becoming knowledgeable about lean and the benefits of a lean community; a visit to the state Lean Center of Excellence would be appropriate.
  - Holding public meetings to discuss lean and its advantages, as well as the costs and efforts involved in the process. Exploring funding options and options for forming the Lean City organization.
  - Produce a report that recommends proceeding with the lean initiative at this time (or not) and serves as a blueprint for implementation.
- The community and committee should consider early on whether or not

- they want to hire a consultant to help with the activities listed above, or go ahead and do these activities themselves and hire a consultant to help implement the program at a later date. Again, this is similar to community and economic development efforts where often an outside facilitator is brought in to assist with the process. As the state LCE grows, it may be able to provide such consulting services on a widespread basis throughout Louisiana, depending on available resources.
- Follow the plan and begin the implementation:
    - Raise the public and private funds.
    - Establish the Lean City organization; decide how it will be structured (e.g. separate non-profit organization or part of an existing organization), staffed and funded. Create a board of directors to guide the organization which includes financial backers, elected officials, private sector representatives, persons knowledgeable on lean and other appropriate community leaders and volunteers.
    - Monitor the program and issue regular public reports on progress.
    - Periodically (at least annually) revisit and adjust the strategic plan.
  - Continue to work closely with the state LCE and advocate support for lean at the state level. LMA and other key state organizations should be active participants in the overall lean transformation effort. Communities will learn much from each other as lean transformation efforts progress.

An example of how to begin the lean community process is contained in the preceding story of the Center for Continuous Improvement in Athens, Georgia. In this case, the private sector took the initiative when several companies joined together to fund the Center and receive the kind of training needed to ensure they remained competitive in the global economy. The Center was housed in the local technical college because the founder was a faculty member there. This initiative could have easily included service and/or public sector organizations, and been housed in an existing non-profit organization or a new organization.

While lean is well established in the private sector, it is a relatively new concept in the service and public sectors, and certainly at the community-wide level. This module has offered examples of service and public sector organizations that have adopted lean, and has outlined as clearly as practicable at this point the concept of a lean community. The fact is that Louisiana communities that undertake lean transformations will be plowing new ground, so it is not possible to provide a “tried and true” blueprint and implementation plan. Soon, however, as communities undertake lean initiatives a body of knowledge and best practices will develop that other communities can utilize in their lean efforts. The state LCE, LMA and other partners in the process will serve as clearinghouses for these best practices and “lessons learned.” This module itself is a work in progress and should be periodically revised to reflect knowledge gained as the

State and its communities embrace lean, which will provide strong competitive advantages in community and economic development.

## CONCLUSION

This module has provided an overview of lean operations in the manufacturing, service and government sectors. It has also identified some characteristics of the prototype lean community. No perfect lean community will ever exist (just as no perfect lean company will ever exist) because lean transformation is an on-going process, not a one-time event. The real-life examples of lean operations in government agencies offered in this module demonstrate that lean service organizations and communities are not only possible, they are already begun to arrive.

The transition to lean, especially for government and service organizations, is not easy and often outside help is needed to achieve success. Furthermore, lean is not a one-size-fits-all formula; it is unique to each individual organization. Hundreds of books and articles have been written on lean, though surprisingly little on lean in the public and service sectors.

While it is not possible to describe it in full detail in this module, we have attempted to provide the reader with an introduction to the main concepts of lean and some initial guidance on how to approach the transition to lean. Readers are urged to contact the Center for Lean Excellence in Lafayette or Louisiana Economic Development for further information.

Application in the government and service sectors is the new frontier for lean. States and communities that adopt lean will be regarded as international leaders. They will benefit tremendously as population, jobs, and incomes grow and the quality of life for all residents increases, just as in our fictional Newtown.

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