

# leanthinking

Plan . . . Do . . . Check . . . Act . . .

May, 2006

## what is lean thinking?

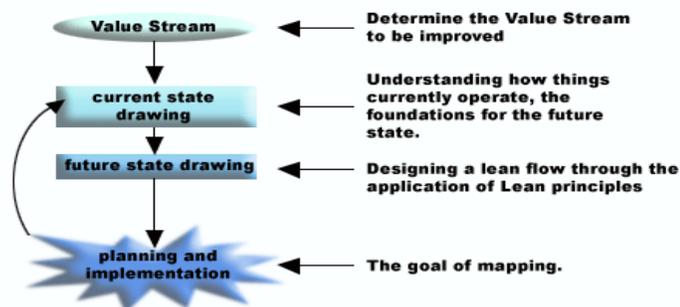
The objective of Lean Thinking is to create the most value while using the fewest resources. This is done by defining value from the customer's perspective and distinguishing process steps that create value from those that do not. Lean goals are to:

- Reduce lead time & process time, and improve quality by eliminating waste
- Unleash employee potential
- Strive for best practice with standard work and built-in-quality
- Level the process (Flow)
- Continuously improve

## how does lean thinking work?

Value Stream Mapping is

### USING THE VALUE STREAM MAPPING TOOL



used to show how work is done and how to improve that work. This approach ensures that everyone is aware of the process as it works today, everyone agrees on current performance of that process, and everyone is involved in planning its improvement. The Value Stream Map tool:

- Shows flow of process steps required to complete a product or service from order to delivery
- Reveals waste and measures process performance
- Links material and

information flow

- Gets people involved in planning and deploying a process improvement plan

The work group (employees who know specific details of the process) first draws a Current State Value Stream Map to see and understand how work is presently done. The work group measures the process time (the amount of work done to complete a task) and lead time (the total time to provide a product or service from order to delivery). The work group then draws a

*“The new lean Purchasing processes significantly reduce paperwork and provide departments with goods and services much faster than before.”*

Future State Map to improve quality and reduce lead time and process time by eliminating waste in the process.

## lean techniques

Workplace organization and standard work are two Lean tools to achieve Future State objectives. For example, administrative offices are stocked and laid out with visual controls to show at a glance where equipment and supplies belong, with automatic reorder points in each supply cabinet (i.e.

a pull system). Standard work specifies content, timing, sequence and outcome of tasks that allows employees to eliminate variation so that deviation from standards is obvious, and there is no ambiguity about who provides what to whom and when and builds in quality (error-proof).

From Lean Concepts, LLC  
[www.leanconcepts.com](http://www.leanconcepts.com)

## purchasing



**The mapping process!**

The Purchasing process was selected as one of the first value streams to be reviewed because changes to this process would have an impact throughout the entire City organization. During the scoping session, it was decided to limit the work of this first workshop to looking at Purchases over \$500 from creation of the requisition and specifications to the placing of a purchase order or term contract. The reason for limiting the scope of the value stream process, is, as you can see by the mapping of the current state below, that one value stream can be very complicated.

Once the scope of the value stream was set, a three-day work shop was held with the consultants of Lean Concepts, Purchasing Department staff and representatives of other City departments

involved in the purchasing process.

Mapping of the current state showed areas where the team felt improvements could be achieved. Some of the areas noted were:

- Unclear requirements for bid specifications, resulting in incomplete specifications
- Lack of knowledge of process
- Inaccurate and outdated Vendor File
- Incomplete project knowledge by user department
- Incomplete communication between user department and buyer
- Multi-approvals and wait time for

approvals—too many handoffs

- Interruptions to work
- Too much re-work throughout process; duplication of effort
- City Commission approval is redundant sometimes

In response to these findings, the team put together seven smaller teams to concentrate on the areas where they believed the most effective improvements could be made:

- Provide complete and accurate specs at time of requisition
- Create an accurate Vendor List
- Develop a purchasing visual management system
- Revise the contract compliance process
- Develop a plan to get to e-procurement
- Develop a department award recommendation process
- Investigate alternative

ways to remove delays in the process

During the implementation phase, the team has put together training materials and templates which have now been placed on the Purchasing website for use by employees who do procurement. The creation of these training materials was a direct result of the lean process and the team identifying the goal of reaching 90% first time accuracy for information and bid specifications when received by the Purchasing Department. One change that has greatly increased the first-time accuracy and overall results is that many of the actions that occurred late in the process were moved forward (e.g. Equal Opportunity review) so specifications are complete and necessary information is included

*“Often times we try to correct issues by dealing with the symptoms of the issue and not looking for the root cause. The Lean Thinking workshop gave us an opportunity to stop and focus on the entirety of the process and address the root cause(s) of issues within that process.”*

**Jeff Van Dellen**, Dep. Fire Chief

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when sent to Purchasing, reducing the need to double back to the initiating department multiple times to gather information. The National Institute of Governmental Purchasing (NIGP) commodity code listing is in the process of being updated and should be completed by June 30, 2006. A visual project board is being used to track bids now so Buyers and their customers (City departments) can see exactly where they are in the process at any time. These new processes and materials are being tested and reviewed to ensure continued improvement.

The Environmental Protection Department

*"The changes would not have had the same impact if they had come from the management down. This way there was more buy in and ownership by the people doing the work".*

**Barbra Hoogterp**, Library Office Assistant

(Wastewater) and the Fire Department volunteered to be first to test the new materials and processes. To date, fifteen projects have been processed using the new lean processes. First time accuracy increased to 90%, and the amount of time from requisition to purchase order was decreased to only 38 days—a 40% reduction in completion time. The templates and materials have also been tested with some first-time users with good success. Based on these successful results, the team will now be expanding the new processes to other departments over the next several months. Public Works (including Streets/Sanitation & Traffic Safety) and the Lake Michigan Filtration Plant have volunteered to be next and will be working with Purchasing

staff starting in July.

*Katie Bailey/Jeff Pierce*  
*Purchasing Department*

## **the library and lean**

Why is it that the item you want is always in the wrong size, color, not available, etc? Libraries get questions like this all the time. Keeping the customer or patron in mind is critical to providing good service, and having the materials available as quickly as possible is part of this service.



Check-in area before lean

The first project selected for lean thinking at the library was how to get the materials returned from circulation (materials

being returned by patrons or from other libraries) back to the shelves as quickly as possible. After all, since these were circulating, they were apt to be the most popular. A lean

*“As a long-time employee, I have been through several types of processes for changing the way we work. No meaningful outcomes ever happened – it stayed the same. The Lean Process that we went through actually made a positive difference in performing our jobs. It was educational and very helpful in understanding co-workers jobs in relation to your own job. It also helped create a positive collaboration between divisions that did not previously exist. Ultimately, the process has allowed us to reach our goal to speed up the process in serving our clients – the public.”*



**Check-in area after lean**  
team was selected consisting of members at all levels of work in the area and two members from other departments (a good way to get outside perspective and to prepare for the next lean project).

The goal was to reduce the time it was taking to get materials back on the shelves from upwards of 3 weeks to 36 hours. Charting the current state (the way it was at

the time), while an arduous task, revealed some clear problems and waste, especially in wait time.



**Delivery area before lean**

Since lean thinking calls for looking for the least wasteful way of performing a process, the lean group was able to work toward clustering obvious groups of activities and then focus on what could be made better in the future state.

Where is the process today? The work areas have been completely rearranged. Shelving, a natural for delaying movement, was removed in favor of carts pre labeled for their final destination and sorted at the point of entry. A pick up and delivery flow chart was developed and persons were assigned to this task.



**Delivery area after lean**

Cross training has occurred so that people are able to back one another up as needed and keep materials flowing.

And, most important of all is the fact that the materials are available for patrons to pick up when they need and want them. Patrons and staff are much happier with the results.

What's next? The second lean value stream involves ensuring that new materials coming into the library arrive on the shelves within 10 days of arrival, fully processed and ready for circulation. This process was even more difficult to map than the first. However, as we work through it, this process is proving to be just as rewarding.

*Wm. Baldrige  
Library Lean Trainer*

## **parking card refunds**

Parking Services has been participating in the

various workshops related to lean thinking in office work. Front office staff were asked where we could make improvements in customer service. They indicated that one of the more vocal complaints is about the amount of time customers wait to receive a refund check for cancelled parking cards.

In the analysis of the current state, it was found that customers waited an average of 20 days to receive a refund check. In addition, it took 32 minutes to process and approve the request. The majority of the wait and process time occurred right in our own department--a result of holding requests until there was a sufficient number to justify "batching " the requests in FAMIS! Of the 440 annual refunds, 85% were for less than \$50 (60% were for less than \$25.) We realized that by doing a

cash refund at the counter, we could reduce the average wait time to the customer from 20 days to only 12 minutes! Processing time would be reduced from 32 to 14 minutes—saving an estimated 112 hours of staff time! The Comptroller's Office was agreeable and assisted with setting up a cash account. Since implementation, 90 cash refunds have been completed and 24 refunds made by check. Parking customers are satisfied to immediately receive their refund. This change has eliminated customer complaints of, "You (Parking Services) expect your money right away, why can't I have my refund right away?" Instant cash refunds have also had the added benefit of reducing address errors and returned checks due to people moving and leaving no forwarding address. Choosing a value stream suggested by the front-line customer service staff, and then involving them in the lean value stream analysis, resulted in an improved process for both our customers AND our staff ; and the employees involved indicate they are pleased management was responsive to their suggestions.

Questions or Comments?

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