

Continuous Improvement Using Lean Principles

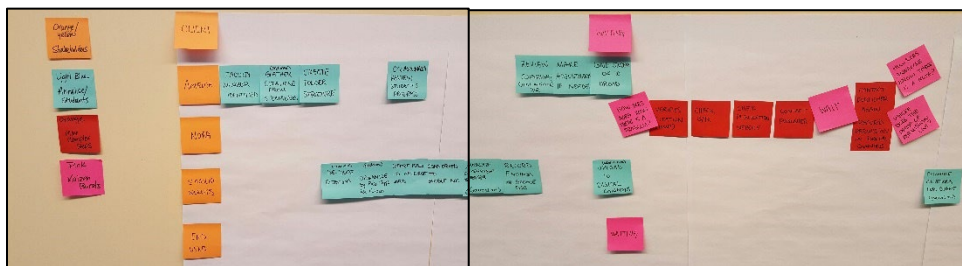
August 2016 Update

Lean at the Van Pelt and Opie Library

The Library is incorporating Lean processes, methods, and tools into their everyday activities. For example, in January of 2016, a team of library staff and student employees worked together using Lean to improve the process for adding faculty works to Digital Commons @ Michigan Tech. This digital repository offers worldwide access to research, scholarship, campus publications and other creative works by members of the Michigan Tech community. This repository is offered as a service of the Van Pelt and Opie Library.



Issues surrounding copyright add a layer of complexity to the process of depositing works in the repository. This complicates communication and creates a difficult process with many steps. Using a swim lane process map, the team mapped the entire workflow and used kaizen bursts to indicate problem areas. A kaizen burst represents areas that must be fixed in order to achieve a desired future state.



The swim lane process map revealed that there was no schedule for reviewing and posting works. It also made it apparent that there was no alert system for team

members to let them know when it was time to complete tasks. This came as a surprise to the team; they had been focused on issues of copyright research. If the team had jumped to a solution too early in the process, these root causes would not have been discovered. The team established a schedule to review and publish works and also reorganized the workflow. Eight non-value added steps were



eliminated, a reduction in process steps of 35%, speeding up the process and making it easier for staff and students to keep their individual work assignments moving forward.

Once these improvements were implemented, it became

obvious there was no way to visualize and track overall project progress. Since the conclusion of the kaizen, the team has developed a project dashboard that quantifies progress. It has gone through many revisions to ensure it's useful not only for the team, but also for quick, accurate reporting to project stakeholders. The team sees this dashboard as one of the best outcomes of improving the process of adding faculty works to Digital Commons @ Michigan Tech. If the team had stopped improvement activities after the initial kaizen, it never would have been developed. It shows the value of continuously analyzing and working to improve processes and systems that have already benefited from Lean.

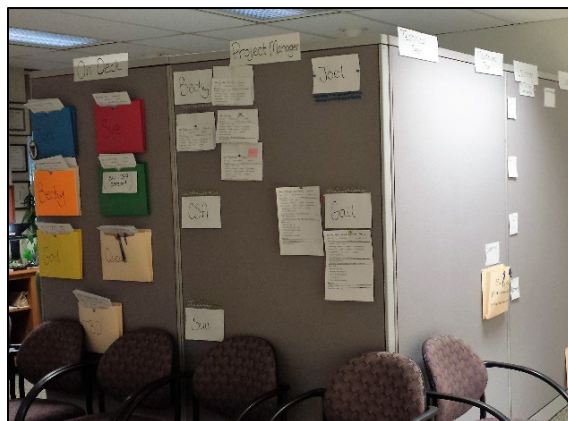
MTRI				
	Number of Works Identified	Metadata Only Record Published	Full Record Published	Full Record Goal
Tier 1	15	0	15	15
Tier 2	54	54	0	10
Tier 3	276	0	0	50
Totals	345	54	15	75

Qi & Johnson (SBE)				
	Number of Works Identified	Metadata Only Record Published	Full Record Published	Full Record Goal
Tier 1	1	0	1	1
Tier 2	39	38	0	10
Tier 3	110	55	5	1
Totals	150	93	6	12

Explanation of Tiered Publishing Phases	
Currently in Tier 1 Process:	Rule 1: 0s in Tier 1 & 2 "Full Record Published" require a comment
Currently in Tier 2 Process:	Rule 2: Large relative #s need a comment
Currently in Tier 3 Process:	Suggestion: Comment on all other 0s as needed.
Goal Met:	

Lean Outreach and Connections

- **Graduate School Presents Kaizen Outcomes.** Debra Charlesworth (Graduate School) and Marco La Manna (PhD Candidate in Electrical Engineering) represented Michigan Tech at the Midwestern Association of Graduate Schools (MAGS) Annual Meeting in Chicago, Illinois in April. Charlesworth and La Manna presented a paper, "Using Lean to Improve Communicating the Degree Completion Process." They described the results of a kaizen held in the Graduate School in 2014 to improve the process of communicating degree requirements to faculty, staff, and students. You can see one result of the kaizen which is the [Degree Completion Timeline](#) web pages of the Graduate School.
- **14 New Lean Facilitators Graduated.** Fourteen employees, representing the Executive Team areas of Academic Affairs (5), Administration (7), and Student Affairs and Advancement (2), graduated from a rigorous training program to become volunteer Lean facilitators. They'll lead continuous improvement events, consult on Lean projects, conduct value stream and workflow analysis, and teach and use Lean thinking and problem solving skills to the benefit of the university.
- **John Deere Visitor Speaks about Lean to Faculty, Staff, and Students.** Doug Moeller, the Enterprise Manager, Operations Competency for John Deere, was the guest speaker for the Lean facilitator graduation. While he was at Michigan Tech, he was also a guest speaker for students in a Lean manufacturing course, met with students from the Leaders in Continuous Improvement student organization, and talked with several faculty and staff.
- **Website Conversions Tracked with a Lean Kanban.** University Marketing and Communications is using a kanban to keep track of the 150 sites, 10,000 pages, and 17,000 images they are converting to a new template this year. This kanban gives the employees a visual cue when the next step needs to be started. It also provides the status of the entire project at a glance, allowing everyone to know if things are running smoothly or if resources need to be realigned to relieve bottlenecks.
- **Informal Lean Activities Documented.** Some areas on campus have reached a level of Lean maturity where they no longer need the direct support of the student coordinators or Lean facilitators, so their events weren't being captured in the Office of Continuous Improvement's (OCI's) database. A simple shared form now captures this information for a more complete picture of campus Lean activities.
- **OCI is a Stop on the Campus Tour.** A student coordinator in the OCI noticed the campus tours were walking by the Lean office and saw an opportunity to spread the word about Lean. She called the campus tours office and asked them to add the OCI to the tour. Informative posters about Lean at Michigan Tech and the Leaders in Continuous Improvement student organization are strategically placed directly outside the office to support the tour guides. All prospective students and their adult chaperones are hearing about Michigan Tech's Lean efforts.



Formal Continuous Improvement Events as of June 30, 2016

Executive Team Area	Active as of 28 Mar 16	Completed since last report 29 Mar–30 Jun 16	Completed FY16 YTD	Completed FY15 Full Year
Academic Affairs	1	0	10	11
Administration	7	0	12	9
Financial Services and Operations	0	0	0	0
Information Services	0	0	1	1
Research	0	0	0	1
Student Affairs and Advancement	0	1	4	1
Total	8	9	27	23