



Understanding the Role of IT in Lean Implementations



Objectives

- Understanding Lean – Its origins, how it evolved, and how it has been adopted.
- Learning the key concepts, and definitions.
- Identifying examples of waste in administrative Processes.
- Understanding Value Stream Mapping.
- Examining case studies of how Lean is already paying dividends in state government.
- Understanding the role of IT in Lean implementation



What is Lean?

a **systematic** approach
to identifying and eliminating **waste**
through **continuous improvement**



History of Lean

Early 20th Century

Time & motion studies, industrial psychology

Mid 20th Century

Training Within Industry (TWI)

Late 20th Century

Lean Manufacturing

21st Century

Lean Office



Toyota's 14 Principles

1 Overview of the principles

- 1.1 Continuous Improvement
- 1.2 Respect for People

2 Researcher's Findings - 14 Principles

- 2.1 Section I — Long-Term Philosophy
- 2.2 Section II — The Right Process Will Produce the Right Results
- 2.3 Section III — Add Value to the Organization by Developing Your People
- 2.4 Section IV — Continuously Solving Root Problems Drives Organizational Learning

Source: http://en.wikipedia.org/wiki/The_Toyota_Way



Lean in the State of Washington

- The Governor has directed executive cabinet agencies to begin adopting Lean as a standard management philosophy and system across state government with the goal to
 - identify waste
 - eliminate delays
 - save money
 - provide high quality services.



Value

- Value is defined from the perspective of the customer
- To be considered value-added, an activity must meet these three criteria:
 - *The customer must care about it*
 - *It must modify the product or service (changing fit, form or function)*
 - *It has to be done right the first time*
- Look at the process from the perspective of the 'thing' that is going through the process



What is Waste?

- Any non value-added activity
- Adds problems and blocks the flow of value

Waste should be minimized or eliminated!



Non-value-added: distinctions

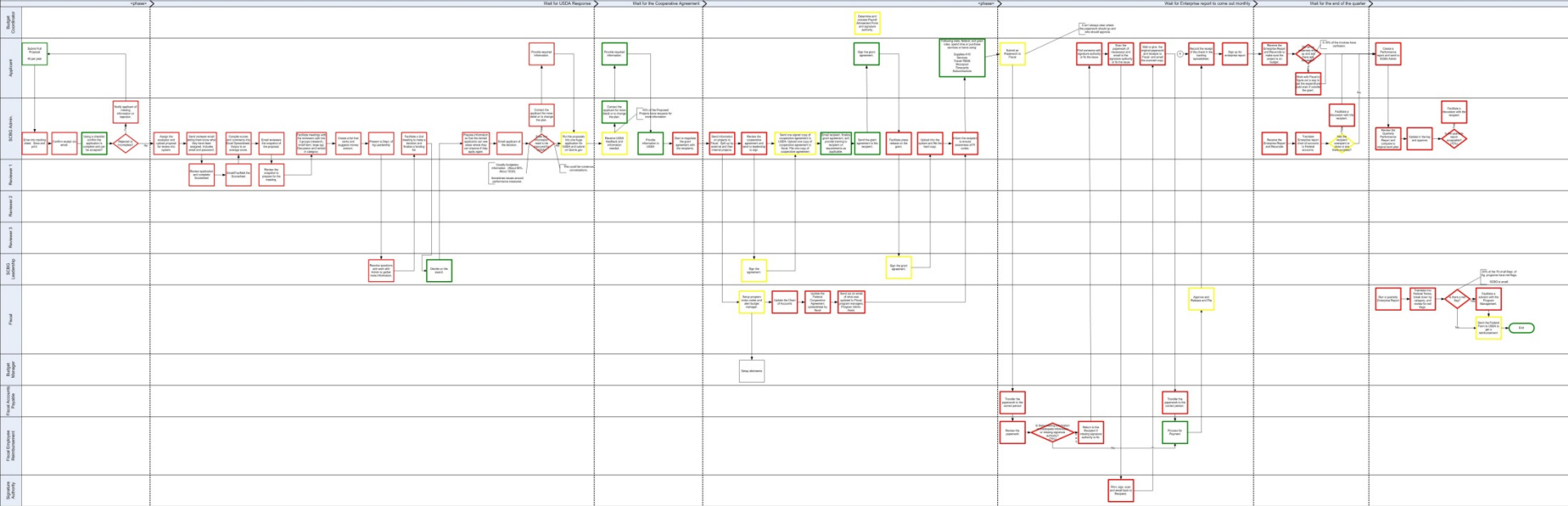
- Non-value added
- Non-value added, but necessary
(a.k.a. “business value added”)

A complex business form titled "Expense for Business Use of Your Home" with various sections and tables.



Grant Application Current State

Specify Crop Block Grant Process-Internal Recipient





8 Types of Wastes

1. Defects
2. Overproduction
3. Complexity
4. Waiting
5. Inventory (work-in-process)
6. Transportation
7. Underutilized people
8. Over-processing



Four Types of Office Waste

- Information
- Process
- Physical Environment
- People



Information Waste

- Redundant input and output of data
- Incompatible information systems
- Manual checking of data that been entered electronically
- Data dead-ends (i.e. data that input is never used)
- Reentering data
- Converting formats
- Unnecessary data
- Unavailable data
- Unavailable, unknown or missing data
- Unclear or incorrect data
- Data safety issues (i.e., lost or incorrect data)
- Data discrepancies



Process Wastes

- Defects
- Scrap
- Rework
- Workarounds
- Inspecting, checking, and double-checking
- Approvals
- Variable flow in a process
- Too much inventory
- Incompatible work
- Overproduction
- Waiting
- Overprocessing



Physical Environment

- Waste related to the movement of people or objects



People Utilization Waste

- Unclear role (unclear responsibility, authority, and accountability)
- Lack of training
- Work or task interruptions
- Multitasking
- Underutilization of talent
- Hierarchy and structure
- Recruitment errors
- Lack of strategic focus
- Handoffs



Time: The Next Dimension of Quality

Video



Traditional Production



Like a meandering stream with many stagnant pools, waterfalls and eddies.





Flow Production

A pipeline with steady, predictable flow

- Work in Process is a known, fixed Level.
- Scheduling is predictable.
- Product or service moves quickly and Continuously through the system.





Waste in the office is hard to see





Value Stream Mapping

- Value stream: the set of activities that comprise a business process
- A Value Stream Map: a visual representation of a process
 - Helps you see the flow
 - Shows how each role impacts other roles and the process as a whole
 - Visibly identifies non value-added steps (waste)

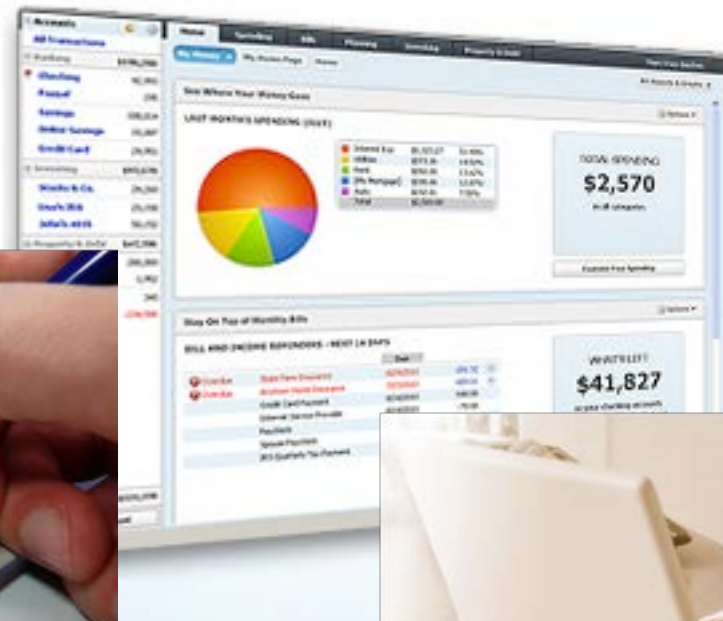


Value Stream Mapping Process





Exercise: How do you pay your bills?





Kaizen

Rapid Improvement Workshop (RIW)

- Focus improvement in a targeted area usually for a one-week period of time
- Managers, engineers and operators work together on the shop floor or at the gemba (where process occurs)
- Changes are identified and made during the workshop



Elements of a 5S Program

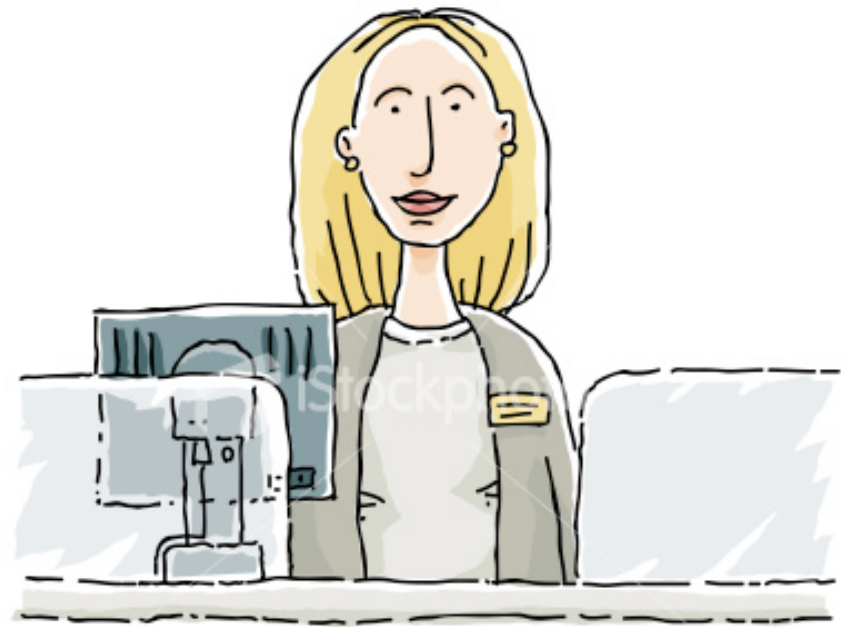
- Sort
 - The needed from the unneeded
- Set in Order
 - Standardize the best location and make it visible
- Shine
 - Put away; clean as you go
- Standardize
 - Agree to the rules
- Sustain
 - Put checks in place to ensure people are following through



Standard Work

A single, documented way to do a task or process

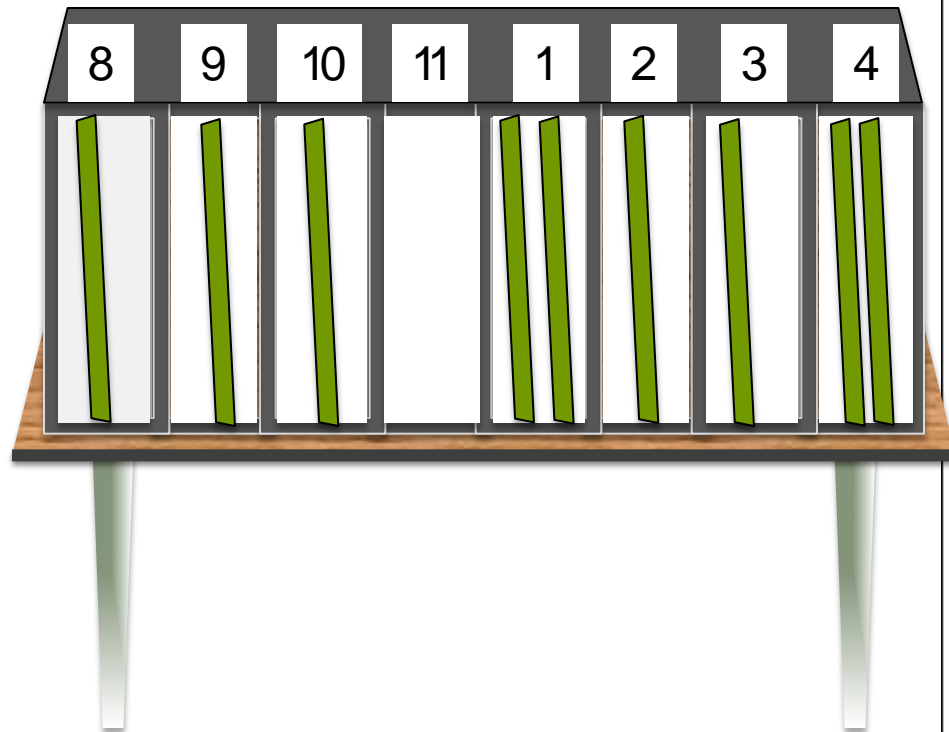
- Applies to both repetitive and creative tasks.
- Foundation for improvement
- Eliminates variation, defects, confusion, interruptions, hand-offs.












Visual Control

Control of an activity or process
by the use of visual signals



To do	In process	Comp.
	Jed 	
	Maria 	
	Asha  	



Push vs Pull

Push: Handing off work (physically or electronically) to the next role in the process whether they are ready for it or not

Pull: Handing off work to the next role when they are ready for it



Kanban

- Kanban: a signal that provides visibility throughout pull system



Teamwork / Cross-training

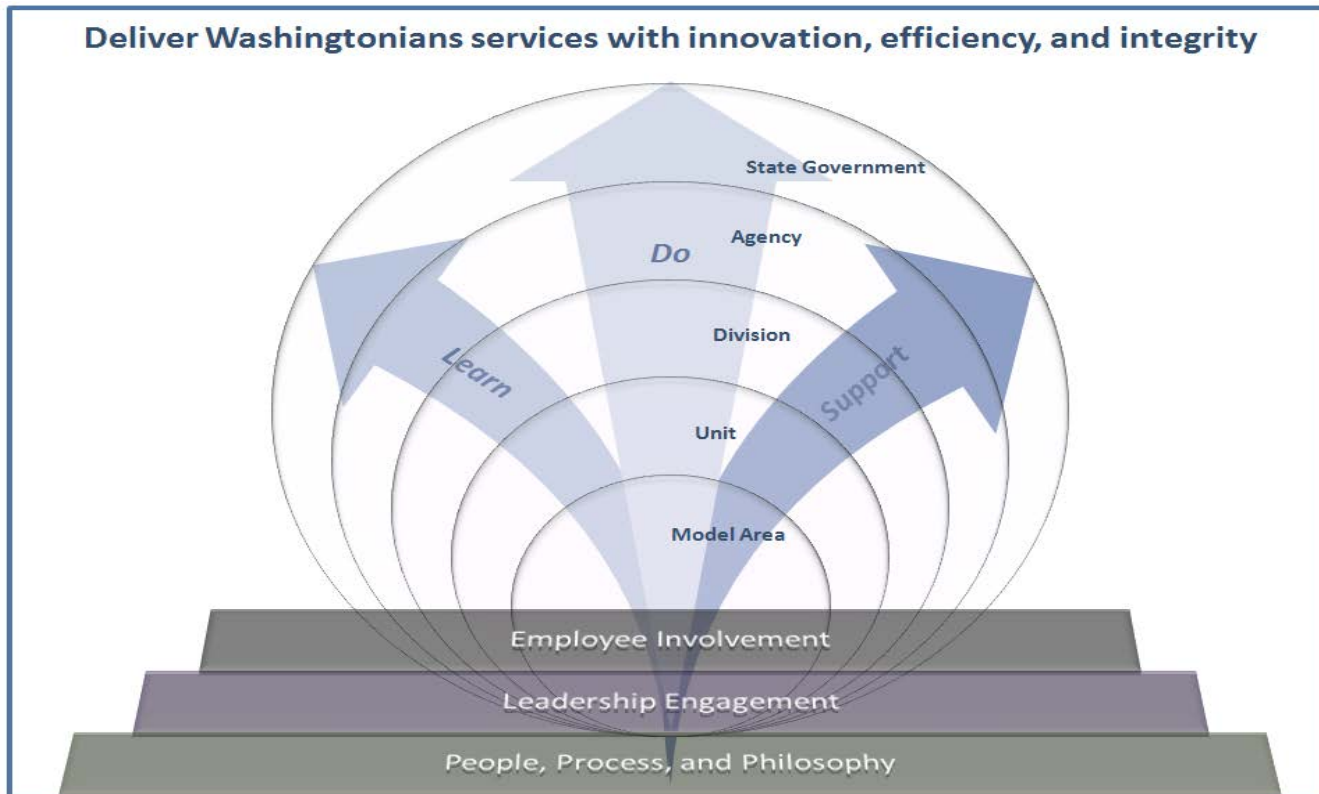
- “It’s not how much [work] is created by one person, but how many products were completed by the [organization] as a whole.”

Taiichi Ohno

- Cross-training yields a more flexible, adaptable work team.

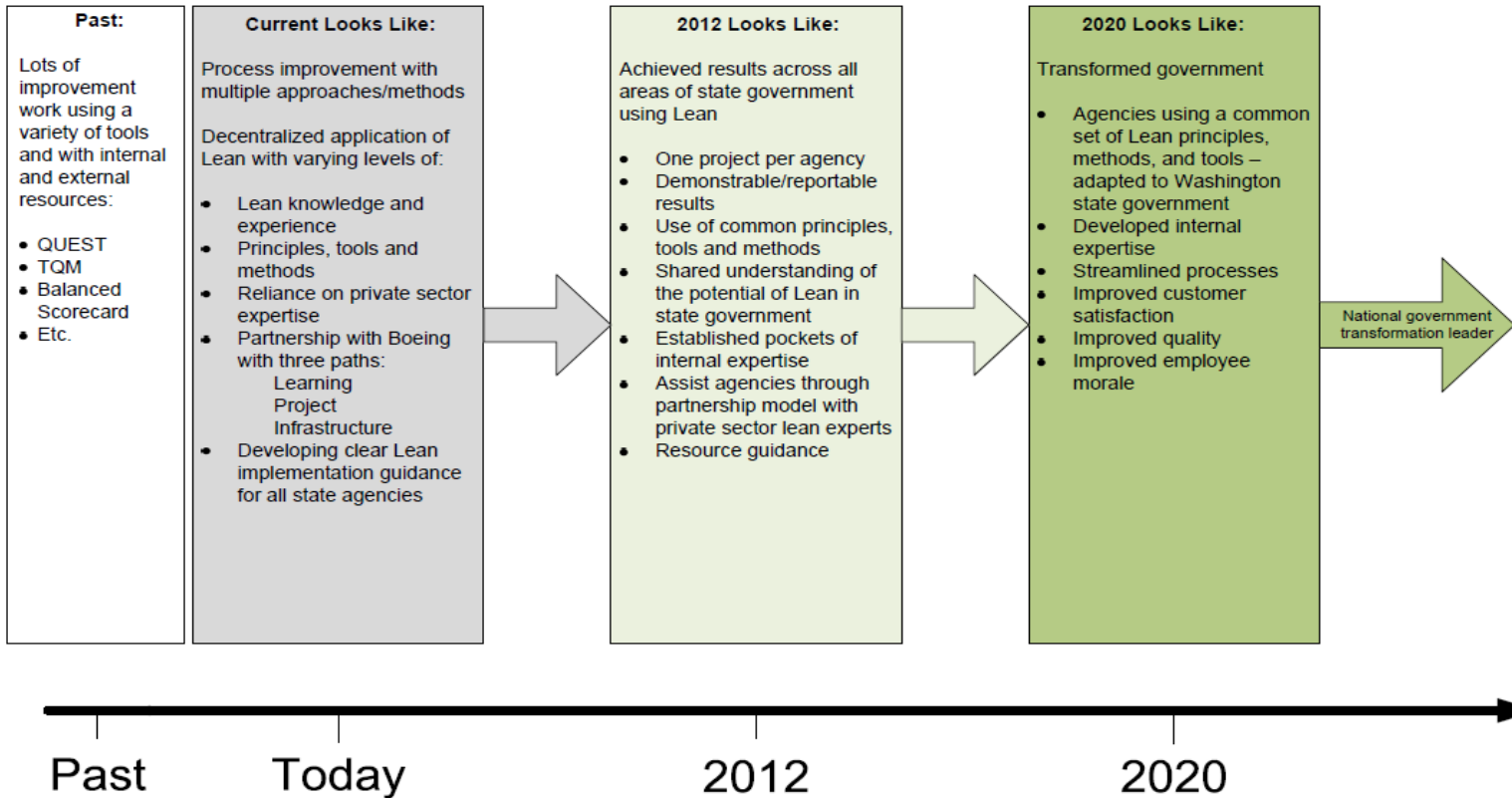


Washington State Government Lean Deployment Model





Washington State Government Lean Journey





Types of Projects Completed

High Variability
Low Variability

<p>Youth Rec Grant Applications Specialty Crop Block Grant Applications OCVA Grant Applications</p> <p>Focus tends to be on visibility and redo loops</p>	<p>Public Disclosure Requests Organic Materials Certification</p> <p>Focus tends to be on visibility and reducing redo loops</p>
	<p>Time and Leave Reporting Food Safety Sanitary Certifications Pesticide Waste Disposal</p> <p>Focus tends to reducing time and redo loops</p>

Low Frequency

High Frequency



Public Disclosure Request Kaizen

- Rapid Improvement Event Objective
 - Appropriately manage risk
 - Ensure requests are being researched correctly
- Challenges
 - 9 different processes in place
 - The person in charge of risk was not aware of all of the requests and could not intercede when necessary.
- Solutions
 - A Share Point list that allows visibility of the status of all requests.
 - A Share Point list that allows tasks to be assign for complex requests.



Time and Leave Reporting

- Kaizen Objective
 - Reduce the time it takes to complete and process leave slips and time cards.
- Challenges
 - Everyone was convinced a paperless solution was the answer.
 - Quality was a bigger problem.
- Solutions
 - Modified the current paper leave slip to make it more mistake proofed.



Food Safety Certifications

- Kaizen Objective
 - Reduce the time it takes to process Food Safety Certifications.
- Challenges
 - Requests were coming in from a number of media which caused duplication, redundancy, and defects.
- Solutions
 - Revised the form to make it more mistake proofed.
Created A Web Based fillable form for the public to use.



Specialty Crop Block Grant Request

- Rapid Improvement Event Objective
 - Reduce the time it takes to manage and report on grants that are received by the agency.
- Challenges
 - The grant is an external grant that is then awarded to the agency.
- Solutions
 - A Share Point list that acts as a cover sheet for all of the pertinent information on that grant.
 - A Share Point “checkbook” to eliminate redundant reconciliations and defects.



A Discussion on Commonly Asked Questions

Please Note: These are my personal opinions and do not reflect the opinions of your management or mine.



IT Involvement in Kaizen Events

- How does Business decide (in a timely manner) whether to include IT representation on a Lean project?
 - This question emphasizes the importance of a Value Stream Map.
 - There is a crystal ball element.
 - Better to invite and bring a laptop or workstation. Normally these are simple applications and having an IT professional present can make them go faster.



Tasks for IT Participants

- Are tasks for IT participants different than that of Business participants?
 - By the nature of your skill set yes.
 - Better if you can meld them together in a team approach.
 - Better yet, maybe IT's roll should be to provide **sanctioned** systems and tools where Business is able and free to “build” their own simple applications.



IT Leading Events

- Can IT successfully “lead” or influence a Lean project that involves Business groups? Or should Business always lead?
 - I like to use the word facilitate instead of lead projects. IT professionals make wonderful facilitators.
 - Each business process needs to have a Process Leader defined. This is the person responsible for achieving success on-going results in the process. For most business processes this is not an IT professional.
 - Normally Process Leaders do not make effective facilitators. In most cases, they can’t see the big picture.
 - In other words, IT professionals can facilitate the improvements, but they should not own the results unless they own the process. This does not mean they cannot influence.



Does Business understand IT?

- How do we get Business to understand there is usually an IT component to everything they do?
 - They know this. They embrace this (mostly).
 - They are just afraid to ask and immediately try to find the work around.



You have to tell the story

- How do we get Business to “care” about a Lean effort that would help get rid of IT waste?
 - Emphasizes the importance of the VSM
 - Effective PR. People are curious.
 - Report Outs to Management
 - Lean Boards
 - Lean Newsletters



Example Success Stories of Projects Driven by IT

- Most are driven by the Process Leaders which is as it should be.
- Here are two IT facilitated
 - Serials Solutions Lead Generation
 - Community Colleges of Spokane Student Portal