

The Context of Today's Event

You've looked at the world and discovered it's flat (or level).

You are worried about how to sustain employment and a high standard of living in a world where everyone competes with everyone.

You realize education and workforce development are critical to success.

You are asking what to do.

Let me make a suggestion...

Apply Lean Thinking

- **The best way for an organization to create value for its customers and protect high-wage jobs, while making life better for its employees!**
- **By relentlessly focusing on value and the value stream for the external & the internal customer.**
- **By using methods originally developed by Henry Ford a century ago but recently taken to a vastly higher level of refinement by Toyota.**

Not Hard to Believe for Auto Industry

- **Simply look at the progress of Toyota:**
 - ✓ **Gaining share in every market across the world.**
 - ✓ **Highly profitable.**
 - ✓ **Will become the world's largest manufacturing company in 2006**
 - ✓ **Threatening the very existence of General Motors and Ford.**

But...can lean thinking work elsewhere, much less everywhere?

Clearly “Yes” Across Manufacturing

Now conclusively demonstrated in;

- **High-volume, low-variety industries**
- **Low-volume, high-variety industries**
- **Process industries**
- **Job shops**

And...Jacksonville manufacturers take note...now proved applicable in many low-wage countries: Mexico, Turkey, India, China

Recently Being Proved in Services

- **Insurance – Jefferson Pilot in US**
- **Retailing – Tesco in UK**
- **Healthcare – Virginia Mason in US (Seattle)**
- **Aerospace Overhaul – Eagle Services in Singapore**
- **Car Repair – GFS in Portugal**
- **Municipal services – “Lean Cities” project in Germany**

Typical Results

- **Throughput time for a given activity reduced by 50 – 90 percent.**
- **Amount of human effort needed reduced by > 50 percent.**
- **Number of defects reduced by > 90 percent.**
- **Number of injuries and sick days reduced by 50 - 90 percent.**
- **Cost of a given activity reduced by 30 – 50 percent.**
- **Work force dissatisfaction and turnover reduced dramatically.**

Lean means more value with less of everything!

But...How Do You Get Lean?

Lean thinking focuses on five value streams:

- ✓ **Product/process development**
- ✓ **Supplier management**
- ✓ **Customer management**
- ✓ **Policy management (particularly improvement)**
- ✓ **Fulfillment (order through production to delivery)**

The real power comes from combining the five streams into a lean enterprise.

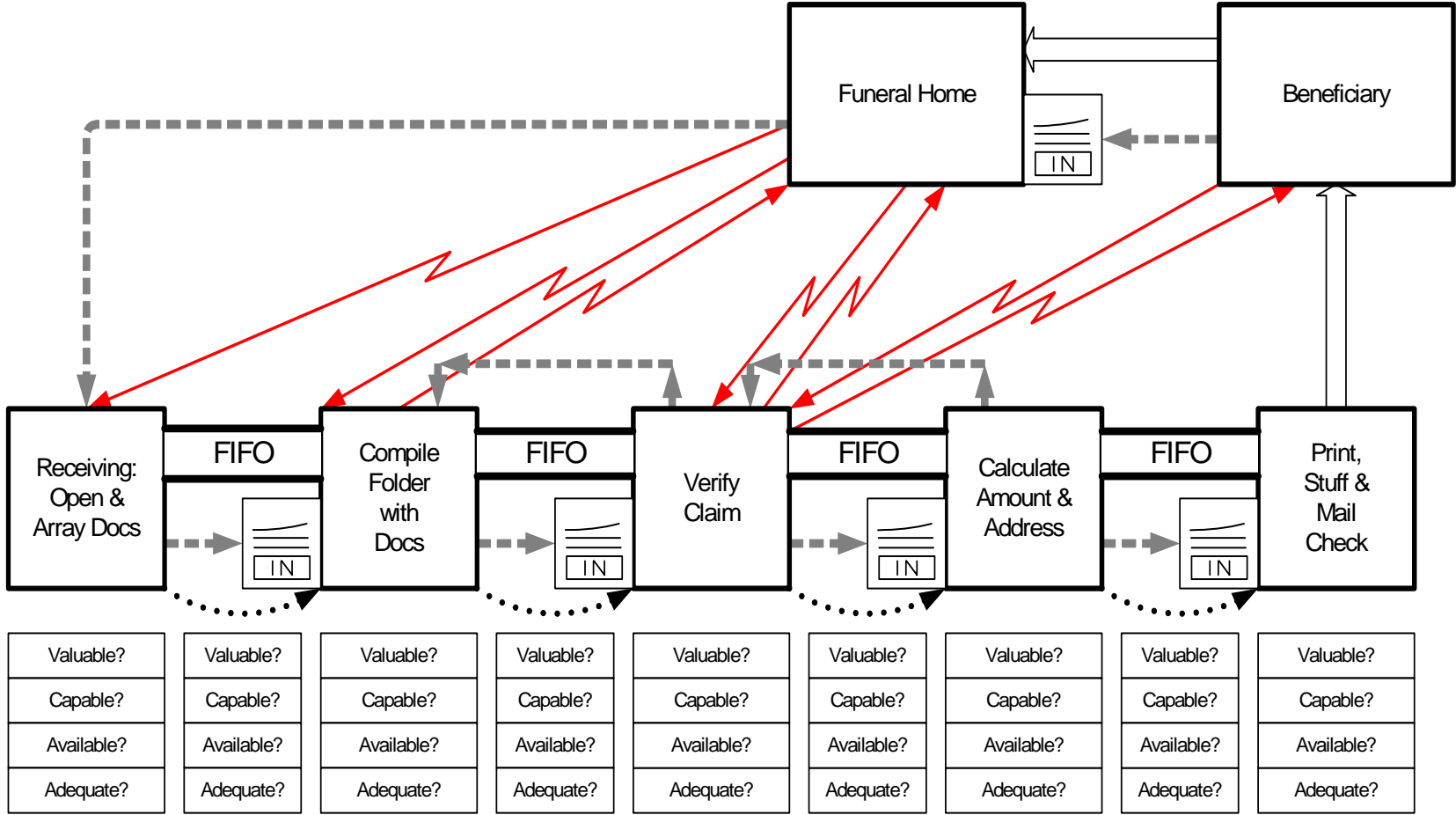
How Do You Get Started?

Focus on the value stream for each of your products (let's keep things simple today by focusing on the fulfillment stream):

- ✓ **Draw a simple *value stream map* so everyone can see the process (value stream).**

Hint: Have everyone who touches the stream draw the map together.

Insurance Claim Processing



9		7 Days		7 Days		7 Days		7 Days		28 Days
1	2 Min		5 Min		10 Min		1 Min		1 Min	19 Min

Ask What the Customer Really Wants

- **One of the greatest value creation failings of organizations: They think the customer wants what they want the customer to want!**
- **And they want the customer to want what they are organized and capitalized to provide.**
- **So...be sure you know and agree who the customer is and what he/she really wants.**
- **Unless you specify value correctly from the standpoint of the customer everything you do is waste.**

Examine Every Step in the Value Stream

- **Ask a simple series of questions.**
- **Write down the answers on the map.**

Does This Step Create Value?

- **The simple test: If you could leave out this step and deliver value to the customer, would the customer miss it?**
- **In a typical value stream, 50 to 90 percent of the steps create no value from the standpoint of the customer.**
- **They are necessary because of the way the value stream is configured and work is done!**

Is This Step Capable?

- That is, does it produce a good result every time?
- Often beginning point for Six Sigma & TQM.
- An amazing reality of today's world: We treat auto parts in the factory better than we treat customers buying and servicing cars; we treat medical equipment in the manufacturing plant much better than we treat patients in the hospital!

Is This Step Available?

- **That is, will it work properly every time customer demand needs it to work?**
- **Starting point of Total Productive Maintenance (TPM).**
- **The amazing reality of today's world: Availability is remarkably low everywhere, from the hospital to the overhaul shop to the airline.**

Is This Step Adequate?

- **That is, is there enough capacity available to avoid bottlenecks?**
- **Starting point of Theory of Constraints.**
- **Sometimes bottleneck analysis is important but Toyota Production System approaches it in a different way by:**
 - ✓ **Divides value streams into product families**
 - ✓ **Installs similar capacity at every step.**
 - ✓ **Finds ways to add and subtract small amounts of capacity through right-sized technology & flexible workers.**

Is This Step Flexible?

- **That is, can the step deal with a variety of different products, with little changeover time?**
- **A key concern of the Toyota Production System.**
- **Important because the customer's desire for wide variety means that even clearly segmented product families will involve many variants.**

Does the Value Stream Flow?

- **That is, are the activities co-located in space/time so that each increment of value flows smoothly from the start of the value stream to the finish?**
- **A key objective of the Toyota Production System, building on Ford's original breakthroughs.**
- **Critical to responding rapidly to ever changing customer desires.**
- **Remember: Forecasts are always wrong! The only remedy is instant response to current customer desire.**

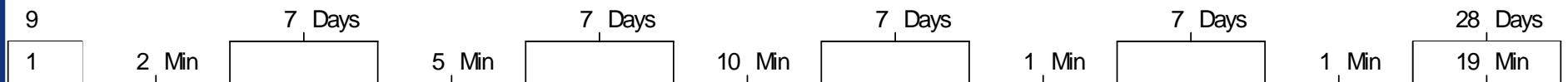
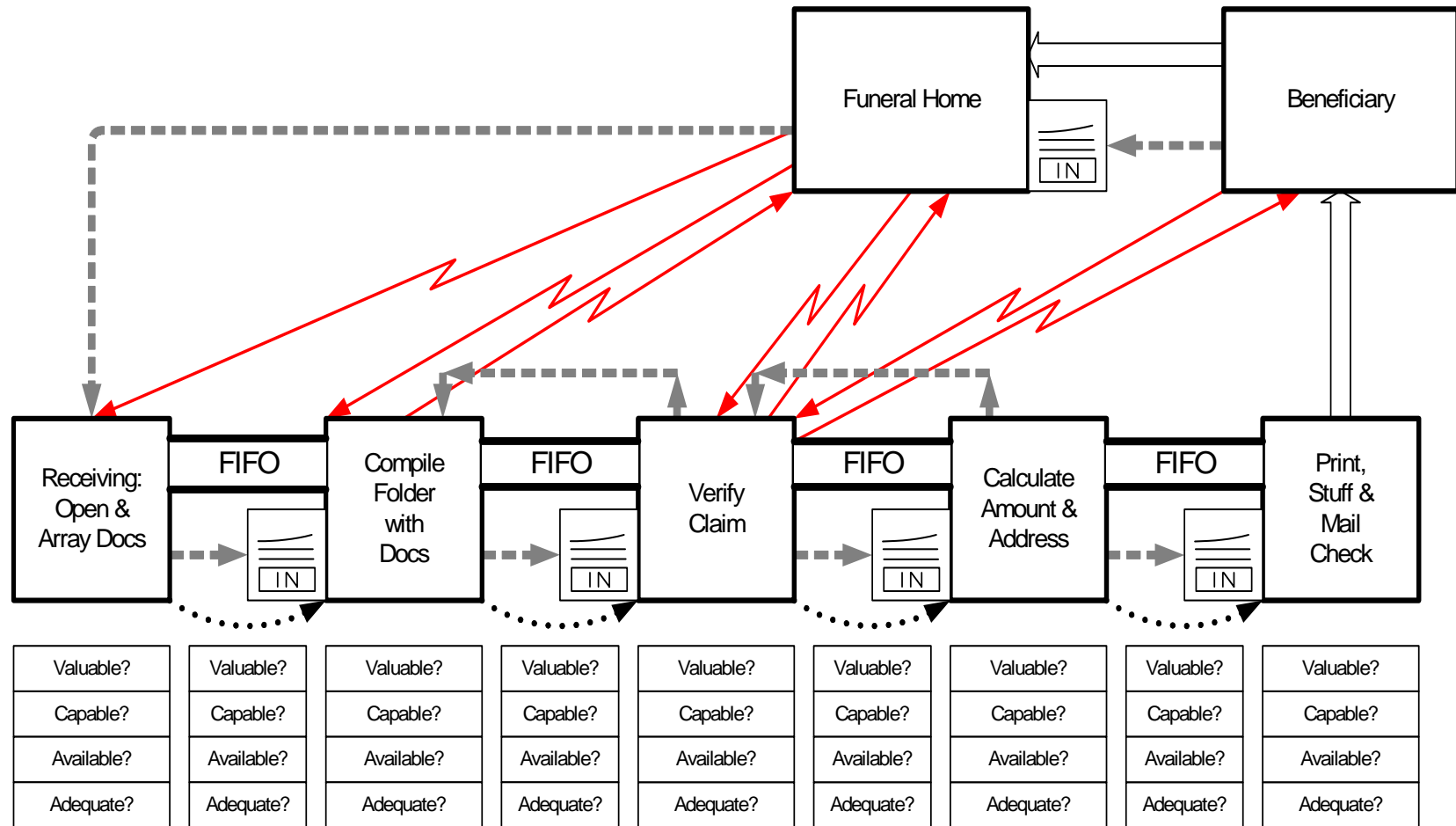
Does the Value Stream Pull?

- **Sometimes flow is impossible and there are breaks in the value stream.**
- **How does each downstream step tell the next upstream step what it needs? Can it pull (the right answer!) or is it subjected to push?**
- **A key contribution of the Toyota Production System: Just-in-Time.**
- **Less of an issue outside of manufacturing because most products are built to order and need to flow smoothly from start to finish once launched into production.**
- **Hint: Don't launch products which can't flow!**

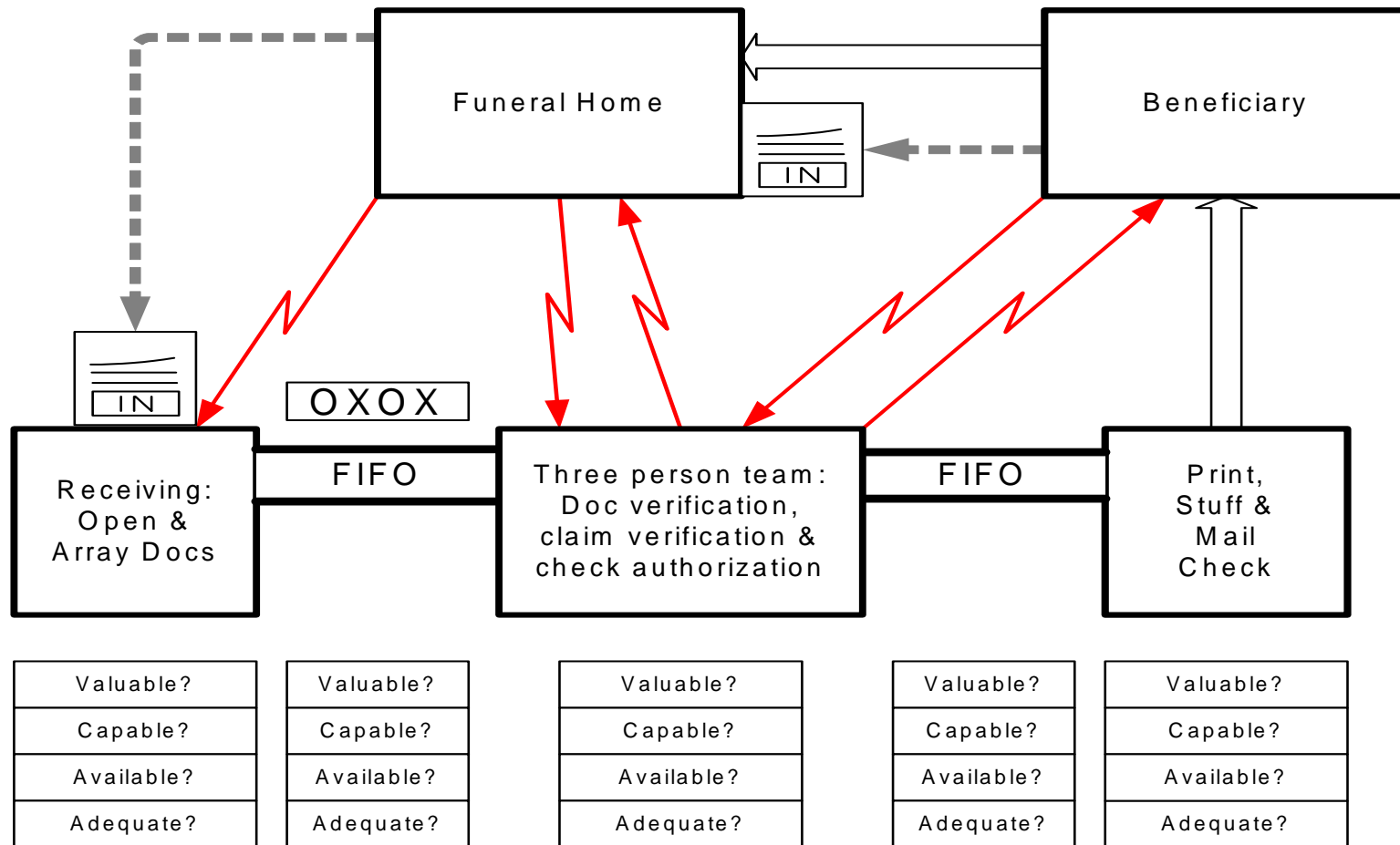
Is the Value Stream Levelled?

- **Most value streams have much greater variation in output than variation in actual consumer demand.**
- **This is because sales & fulfillment systems strive to meet time targets (e.g., end of the quarter) or are full of noise (e.g., bull whip effect in supply chains.)**
- **Toyota always tries to level the flow of value at average consumer demand over short periods (e.g., ten days.)**
- **This makes it possible for the whole value stream to run smoothly at the lowest cost and highest quality.**

Insurance Claim Processing: Current State



Insurance Claim Processing: Future State



5		4 Hours		4 Hours		8.3 Hours
1	2 Min		16 Min		1 Min	19 Min

How Can You Do This?

Start with some advice from Toyota:

“Brilliant value stream management is our *strategy*.”

We get brilliant results from average people managing and improving brilliant value streams.

We observe that our competitors often get average (or worse) results from brilliant people managing broken value streams.”

Ask A Few Simple Questions

- **What are the key value streams in my business?**
 - ✓ **Some will have internal customers.**
 - ✓ **Some will have external customers.**
- **Who is responsible for monitoring and improving them?**
- **How can I see them at a glance as a higher level manager?**

Draw Your Maps

- **Make someone responsible for every value stream – its “current state” and its “future state”.**
- **Include representatives on the team from every part of your organization that touches the value stream.**
- **Include customers too, if at all possible!**
- **Go quickly to determine the current state.**
- **Determine who will do what when to achieve the future state & soon.**
- **Start the process again when the future state is achieved!**
- **Always display the map, so everyone can see.**

A Bonus for Your Organization

- **Drawing maps together will make everyone feel better.**
- **When you put good people in a bad value stream the one thing sure to result is “bad” people, blaming each other.**

In addition:

- **Making someone responsible for every value stream and drawing maps will magically create demand for all of the process improvement methods your people know but rarely use (from TQM, Six Sigma, TPM, the lean tool kit, etc.)**

Why It's Important to Apply Lean Thinking

- **We are doing much better in manufacturing, despite off-shore drift.**
- **But we are no longer a manufacturing economy.**
- **We are a service economy and one where very few of the lessons of lean thinking have been applied.**
- **This creates a large drag on our standard of living and on our pleasure of living (as both consumers and workers).**
- **This is the real challenge of this century for managers and educators.**

Educators Are Missing in Action

- **No one is taught anything in school about value streams, process management, and problem solving (except in industrial engineering where the curriculum is 25 years out of date!)**
- **Yet this is what most of us do most of our working lives: participate in processes and – sometimes -- try to improve them.**
- **So we need to teach/learn lean thinking.**

The Challenge for Educators

- Check out the LEAN network just formed, to get state-of-the-art curriculum. (See www.lean.org)
- Dialogue with employers about what knowledge is actually needed and when.
- But...most lean learning is in an actual work context – Toyota assumes that new workers know nothing except how to read, write & do math, and takes it from there.
- Work-study is therefore an excellent way to learn that can be a win-win-win for students, faculty, and employers.
- Finally: Educators can lean their own value streams!