

Learning Enrichment Activity

Continuous/One-Piece Flow

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What is Continuous/One-Piece Flow?

It refers to the concept of moving one work piece at a time between operations within a work cell – uninterrupted in time, sequence, substance or extent.

What are the benefits of continuous flow?

- Reduced waste in waiting, inventory and transportation
- Less overhead in managing because:
 - It is more stable and predictable.
 - Lead times are reduced.
- More responsive to customer needs, particularly as they change volume or mix

Case Example:

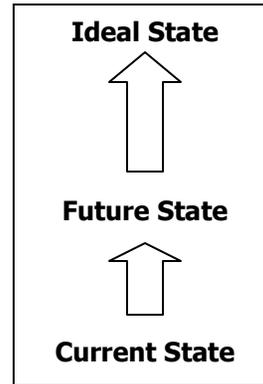
Mary went to her doctor for nagging shoulder pain. The doctor saw her 1 hour after her scheduled appointment time. He could not make a diagnosis so he sent her to a specialist (at a different facility). The specialist sent her for x-rays at another facility even though Mary suggested an MRI. The x-rays revealed nothing. The specialist then sent her for an MRI (back at the facility that performed the x-rays). A couple of weeks later, a diagnosis was made and Mary scheduled physical therapy for the following week and picked up her prescription for medication at the specialist's office. This process took 6 weeks.

Solution to Case Example:

Mary went to her doctor for nagging shoulder pain. Her doctor saw her at her scheduled time but could not make a diagnosis. The doctor referred her to a specialist (in the same building) where an MRI was performed (in that same building) at Mary's request and with the specialist's approval. The diagnosis was made and treatment was communicated via phone. A prescription was called in to her local pharmacy and physical therapy was prescribed and sent to a physical therapist in her network agreed upon by Mary. This process took 3 weeks – better but not "ideal."

Rules:

1. Structure every activity.
2. Specify and simplify every flow path.
3. Keep the flow simple and waste-free simply by letting it flow.
4. The connection between consecutive operations should be so clear they can see each other – allows for better material flow.
5. Clearly connect every customer (Mary) and the supplier (doctors/therapists/pharmacy).



- If you can't get one-piece flow, can you get two-piece or three-piece?
- Continually move closer to the ideal state.

Activity:

Batch Processing vs. Continuous Flow Processing

The human mind likes batches!

This exercise will show which process is faster. The faster process yields the benefits we discussed (recall benefits).

We have envelopes that need to be stuffed, sealed, stamped and labeled.

Divide into pairs or teams.

Individual or Group #1	Individual or Group #2
Process in batches:	Process one-at-a-time:
1. Stuff letters into envelopes.	1. Process one envelope at a time – include all of the steps identified.
2. Label envelopes.	
3. Seal envelopes.	
4. Stamp envelopes.	

Which process is quicker?

One-at-a-time production is quicker and easier, even if it is counterintuitive!

Can it be applied to all processes?

Batch Processing

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5 minutes	5 minutes	5 minutes

Total Processing Time: 15 minutes

Continuous Flow Processing



Total Processing Time: 7 minutes