

LEAN IN OTHER INDUSTRIES

Is healthcare a special case?

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Where does Lean originate?

- ◆ Toyota are credited with introducing Lean through the TPS (Toyota Production System)
- ◆ JIT and Jidoka
- ◆ Copied with varying success by other Car Manufacturers
- ◆ Note that all applications of Lean are derived from this industry
- ◆ So is Healthcare so different?

Lean outside of the Car Industry

- ◆ Lean thinking rapidly adopted by other industries
- ◆ Linked strongly with Six Sigma (GE, Motorola, Allied Signal)
- ◆ Lean for waste reduction
- ◆ Six Sigma for variability reduction
- ◆ Lean Six Sigma a natural evolution (back to JIT and Jidoka)

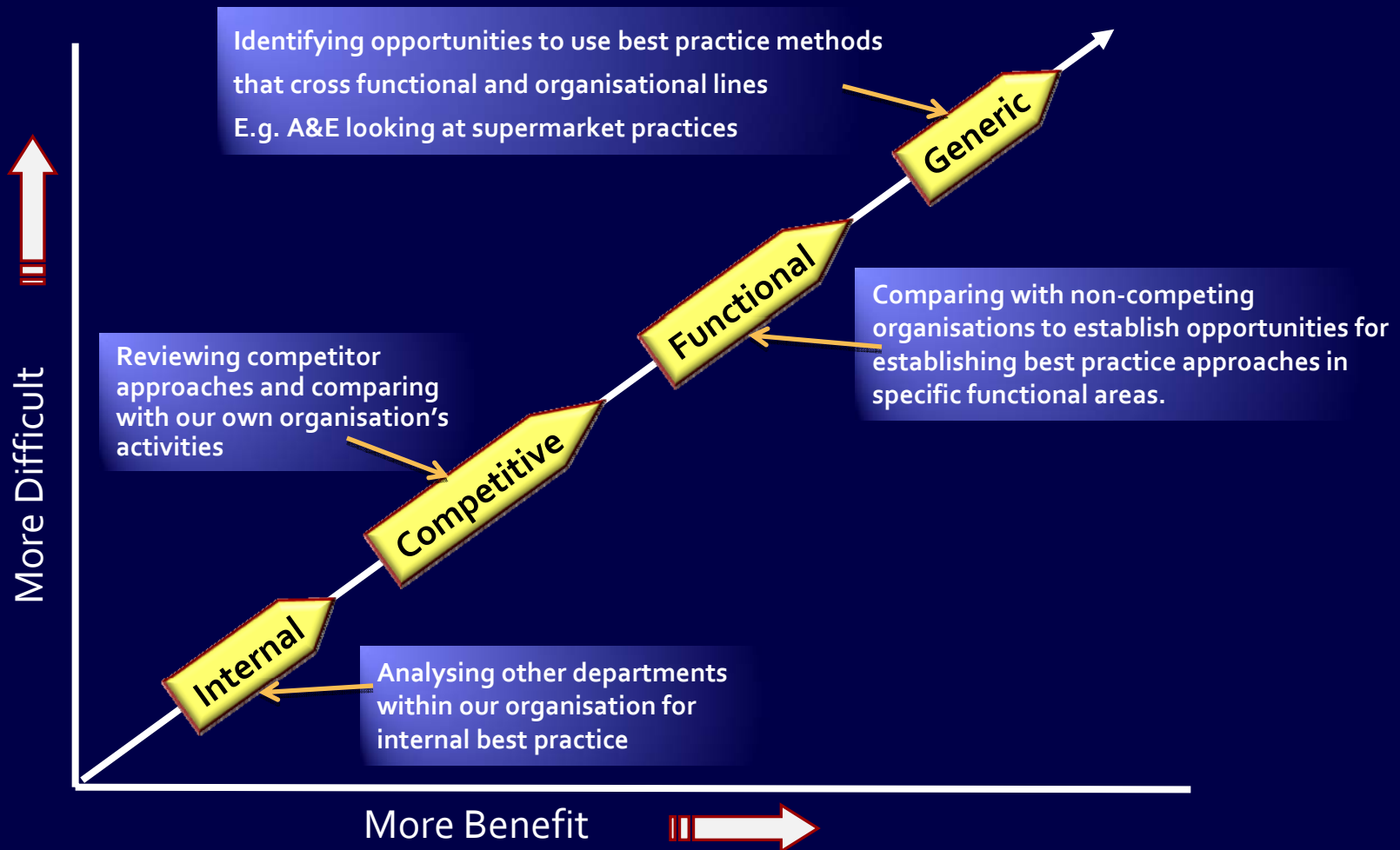
Some industries now using Lean

- ◆ All manufacturing industries
- ◆ Financial Services
- ◆ Agriculture
- ◆ Fisheries
- ◆ Food Processing
- ◆ Air Transport
- ◆ Postal Services
- ◆ Military
- ◆ Healthcare
- ◆ Distribution
- ◆ Dairy
- ◆ Blood Transfusion Services
- ◆ Software
- ◆ Railways

Using benchmarks to improve

- ◆ Benchmarking is an established method
- ◆ However, it is generally badly executed
- ◆ A structured and rigorous approach is needed
- ◆ Identify external organisations that will share
- ◆ Identify the best people (not the CEO!)
- ◆ Manage benchmarking as a project with SMART objectives.

Benchmarking approaches



Process types to benchmark

All process types – there are no unique situations, only the degree of criticality and emotional context

- ◆ Administrative
- ◆ Support
- ◆ Patient Flow
- ◆ Customer Handling
- ◆ Supply Chain
- ◆ Logistics and Distribution
- ◆ Hygiene
- ◆ Maintenance
- ◆ etc

Benchmarking similar processes in other industries will generate creative solutions

Identify benchmark Industry

Select suitable organisations:

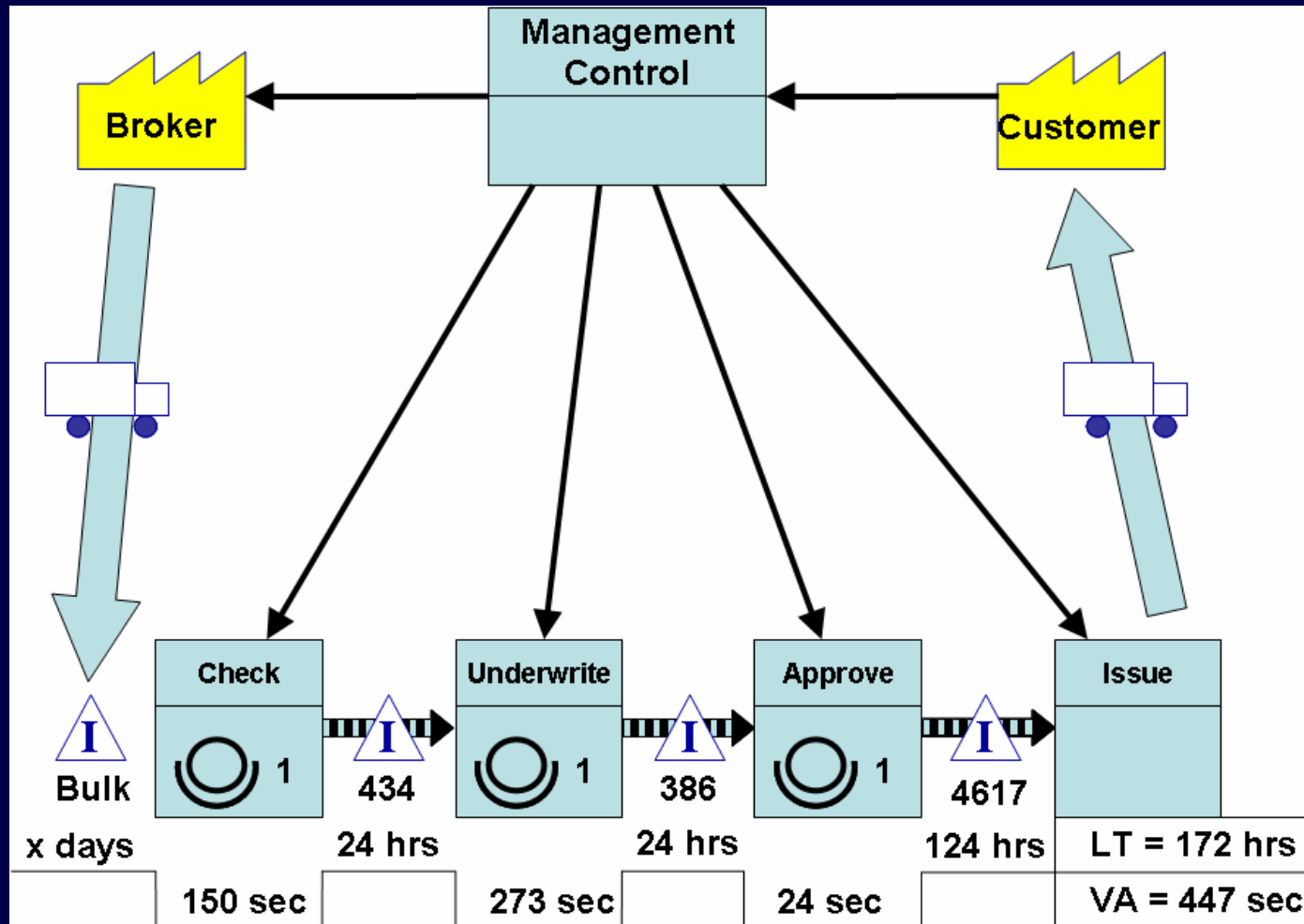
- ◆ Banks for customer data processing
- ◆ Manufacturer for patient flow
- ◆ Food Industry for Hygiene
- ◆ Military for logistics
- ◆ etc

Value streams

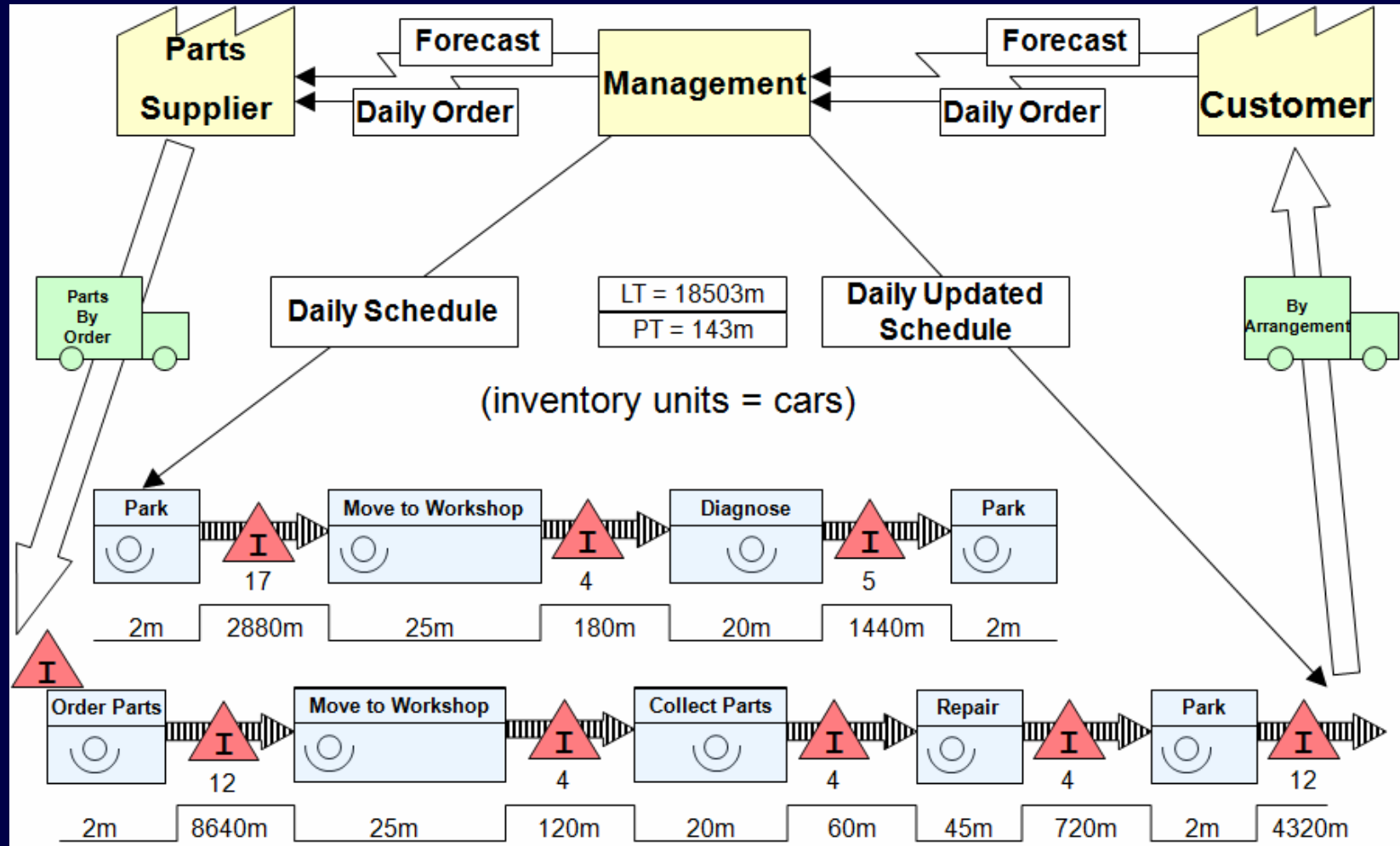
Simplified examples:

- ◆ Insurance Application
- ◆ Car Servicing
- ◆ Fish Processing

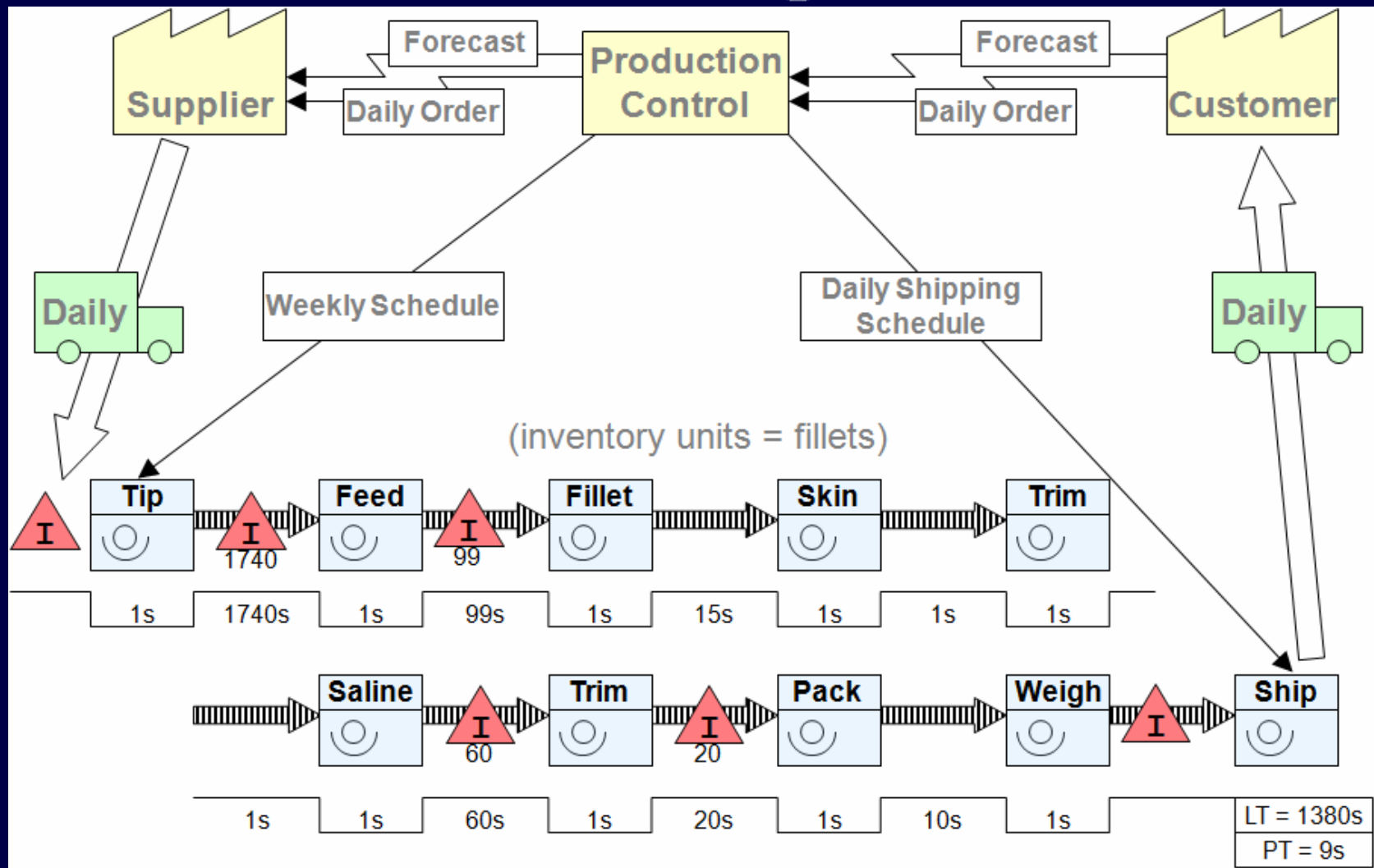
VSM – Insurance Application



VSM – Car Servicing



VSM – Fish Processing



Why benchmark?

- ◆ Identify the route to best-in-class
- ◆ Bring focus to goals and objectives
- ◆ Assess current performance
- ◆ Identify improvement opportunities
- ◆ To reduce the level of strategic error

Poor benchmarking = tourism

- ◆ Not planned – jump on a bus tour!
- ◆ Own processes not characterised or defined
- ◆ No vision of the objectives for the activity
- ◆ Gaps between current and alternatives not understood

The benchmarking process

1. Benchmarking identified as a project activity
2. Formalise and define the benchmarking process
3. Conduct a thorough analysis of the current state
4. Make detailed preparations for benchmarking visits
5. Analyse the gaps identified
6. Report and plan the future state based on the findings
7. Improve the current state and standardise
8. Monitor and control

Improvement benchmarks - typical values

| Measure | Before | After |
|---------------------------------------|-------------|-----------|
| Not Right First Time | 70,000 DPMO | 1000 DPMO |
| On Time Delivery | 65% | 95% |
| Lead Time | Weeks | Days |
| Value Added Proportion | <1% | 20% |
| Stock Turns | 2 | 50 |
| OEE (Overall Equipment Effectiveness) | 30% | 80% |
| Floor Space Utilisation | 100% | 50% |

Examples processes from other industries

- ◆ Box making machine – motion waste
- ◆ Bottle packing process – motion waste, poor changeover and downtime
- ◆ Medical appliances – 5S and floor space utilisation

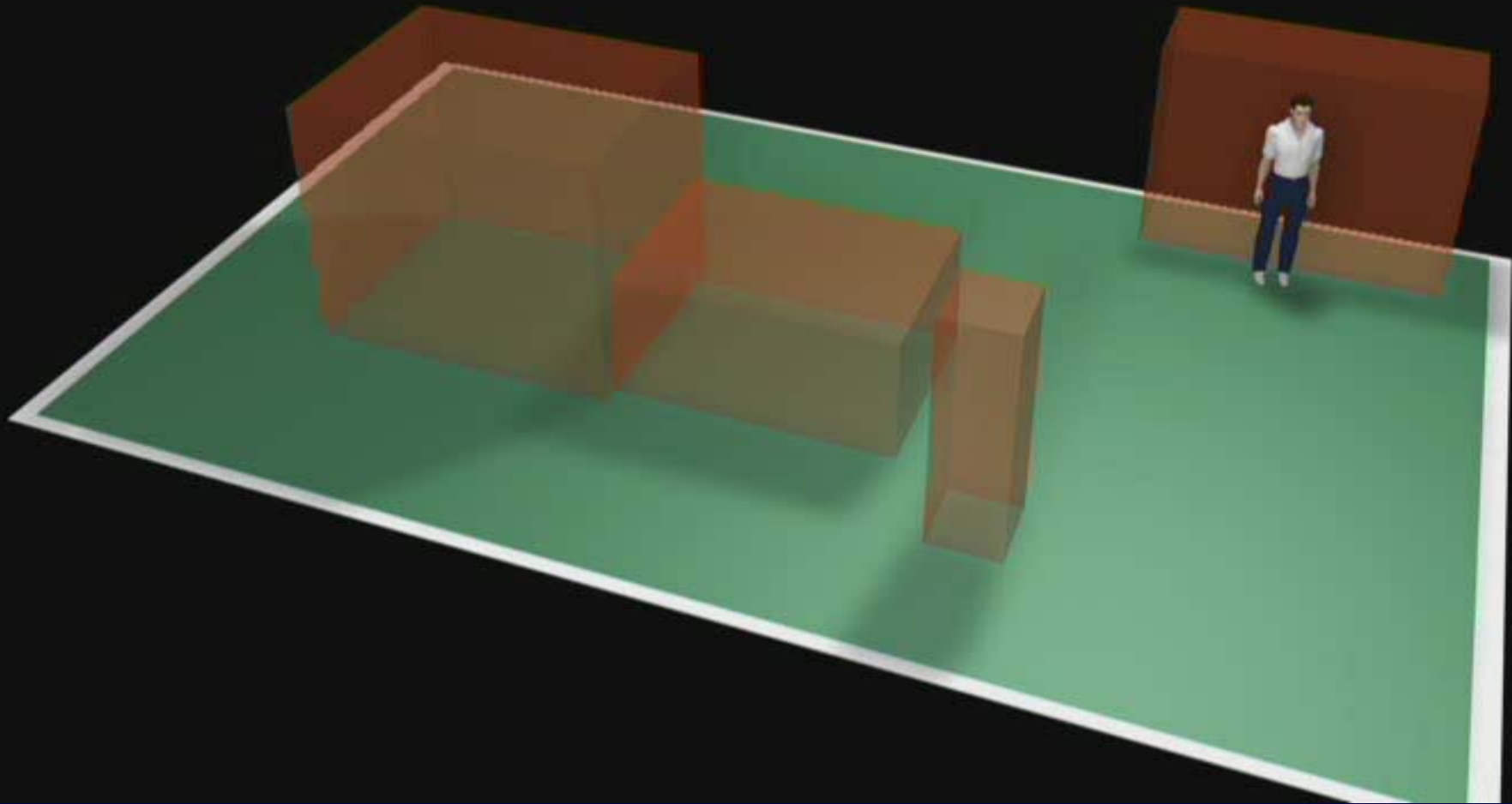
Packaging Machine Process Change



Box Making Machine Process Change



Box Making Machine Spaghetti Diagram



5S - Medical appliance manufacturer

Space used before



Space reduced after

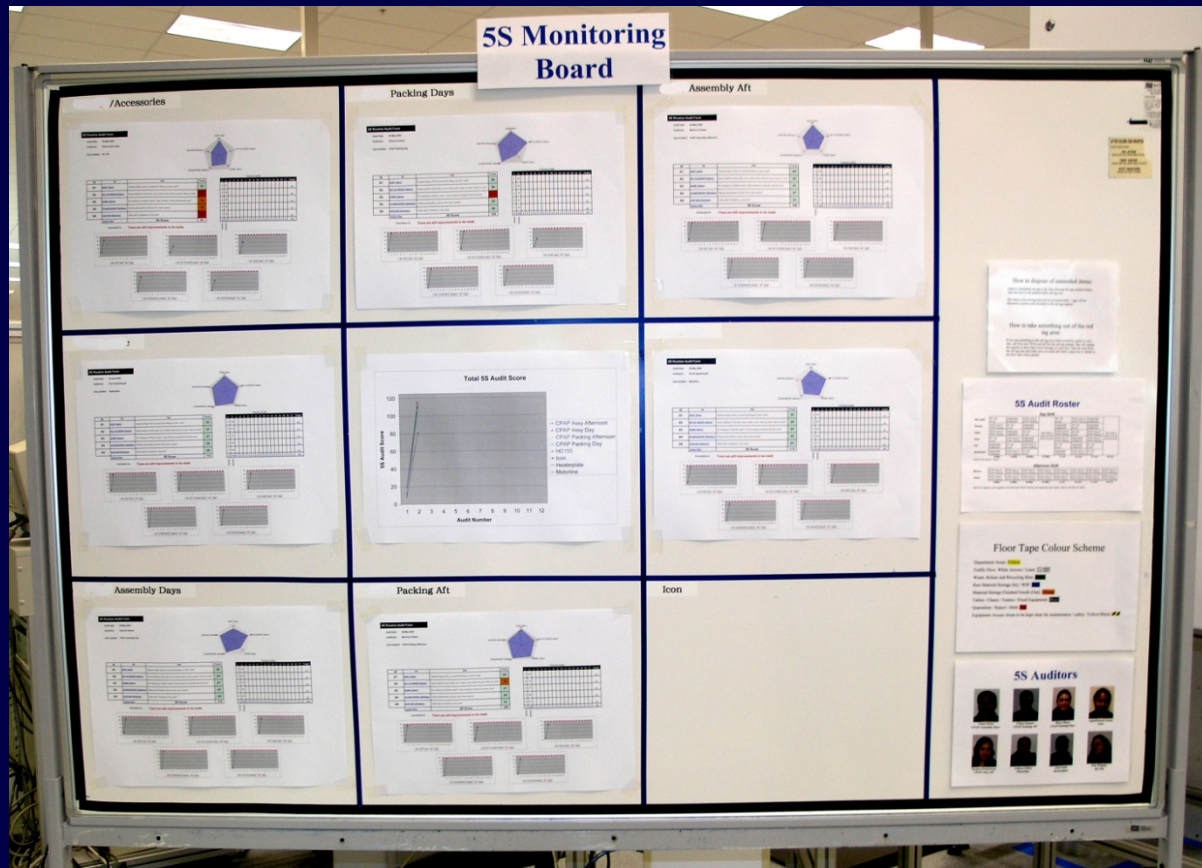


All the space here was freed up by the introduction of cells and single piece flow.

Batching was creating long lead times and taking up space



5S Improvement monitoring



Red-tagged items after 3 weeks



Routine red-tagging



Designated red tag area

The 7 wastes

-Applicable to all organisations

- ◆ **Over Production**

More or sooner than your customer or the next process wants. Components, documents, data etc.

- ◆ **Transportation**

Too much transport between sites, departments etc. Non-value added movement.

- ◆ **Idle Time**

Waiting for work. Help, information, parts, documents, data etc.

- ◆ **Bad Quality**

Defects, wasted resources, rework, documents, data etc.

- ◆ **Inventory**

Stock, WIP, parts, documents, data etc.

- ◆ **Process**

Too many or inappropriate operations (reporting, rechecking etc).

- ◆ **People Motion**

Too much movement in offices, between departments, reaching and excess movement, ergonomics.

How to use benchmarking results

Where the process or nature of the value stream is similar, imitate or improve on the methods observed:

- ◆ Cleanliness procedures in the food industry
- ◆ Kanban systems in product manufacturing
- ◆ Diagnostics and maintenance in car servicing
- ◆ Reduced floor space utilisation
- ◆ Machine availability and changeover
- ◆ Customers as suppliers in banking
- ◆ Data and information maintenance and distribution

Points to consider

- ◆ Remember that there are no special cases
- ◆ The most beneficial benchmarking is the most difficult to conduct
- ◆ Step changes often result from observing unrelated industries (e.g. Toyota)
- ◆ Generate creative healthcare solutions from non-healthcare industry approaches

Benchmarking risks

- ◆ What is 'world class'?
- ◆ All organisation cultures are different
- ◆ Leads to laziness and inhibits innovation
(“Searching for specific procedures among ideas is the sign of the lazy mind” – Crosby)
- ◆ Too much emphasis on the same industry
(The RAF worked with Bolton Hospital in the UK to reduce death rates in hip operations and reduce paperwork)
- ◆ Trying to benchmark poorly defined processes
- ◆ Industry experts, specialists and consultants!

Benchmark adoption of Lean & Six Sigma worldwide

- ◆ “In the third quarter of 2007, 3,082 executives in mid-sized to large firms were surveyed in six countries....
- ◆nearly three-quarters of the executives polled identified kaizen as their primary method (for improvement)”

(Industry Week 16-11-07)

Lean and Six Sigma in USA Healthcare

“53% of hospitals report some level of lean deployment, and 42% report some level of six sigma deployment. Few hospitals participating in the study reported "full deployment" of either lean (4%) or six sigma (8%). The conclusions are based on 77 hospitals”

(ASQ study - Healthcare Finance News 24-03-09)

Reasons for lack of deployment in USA Healthcare

- ◆ The need for resources (59%)
- ◆ Lack of information (41%)
- ◆ Leadership buy-in (30%)
- ◆ Unaware of Lean or Six Sigma (11%)

(ASQ study - Healthcare Finance News 24-03-09)

How to start...

Do something!