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UK/US SHINGO SUMMIT

2009

HECH MANCHESTER 8-9TH JUNE

Implementing & Sustaining a Vision for Change



Mike Price
Chief Executive
Ultraframe UK Limited



Ultraframe UK : Intro & Brief History (1)

- Established in 1983, by entrepreneur, John Lancaster
- Design and manufacture of conservatory roofing systems supplied to trade and retail customers – UK and export
- Ultraframe first to develop specific roofing system; “fit for purpose” solution
 - easy to install, flexible, durable products
 - no call backs
- Acknowledged as the market leader in conservatory roof design & manufacturing
- Turnover doubled (from £41.6m in 1996 to £81.6m in 2000)
- Floated on London Stock Exchange in 1998 at its peak
- “Me too” competition
- From 2003 “big ticket” macro economic slow down, shift in demographics and structural change increased competitive intensity
- Turnover reduced to £55m by 2005, as a result



Ultraframe UK : Intro & Brief History (2)

- Change of UK Board in 2005 (MP joined as Operations Director in May 2005)
- Acquired by Latium Plastic Holdings in July 2006 (for £29.2m, having been valued at £600m in 2000)
- Successfully integrated Wendland Roofing Systems into the operation by December 2006
- Minimum operating profit (c£500k on £55m turnover) in 2006
- Improved operating profit (£3.6m on £55m turnover) in 2007
- Recognised as UK Best Engineering Plant in 2007 (Cranfield School of Management and Works Management). Benchmarking feedback used to drive improvements
- Challenged for the Shingo Prize late 2008 for further benchmarking feedback. Recognised with Bronze Medallion
- 2008 & 2009 have been difficult years in terms of market volume reduction. However, we continue to invest in the right areas to take the business forward



Ultraframe UK Activities & Operations

- Factories & Warehouses :
 - Clitheroe
 - Bedford
 - [Factories exited in Accrington (2), Bristol (1), Gloucester (2), Clitheroe (1)]
- Distribution: Clitheroe; Bedford; Avonmouth
- Employ 237 people, 123 directs (shop floor), 114 office based
- Current Throughput = c47,000 roofs per annum
 - 52% supplied as complete roofs; 48% supplied as components via fabricators
 - Lead time 3 to 5 days (as standard)
 - Majority of roofs are bespoke to customer order



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Ultraframe UK : Initial Thoughts (2005)

- Lots of opportunity to improve !
 - But ... “heard it all before, don’t believe it will happen !”
- Culture change needed !
 - “living in the past” – hanging on to “glory days”
- Employee relations & communication poor (limited respect for the individual)
 - JCC confrontational – employee representatives not involved with solving problems or improving the business (lack of humility)
- The Approach :
 - Create a Vision
 - Engage the workforce
 - “Quick wins” – a sense of urgency to improve performance and a belief that it can be done !

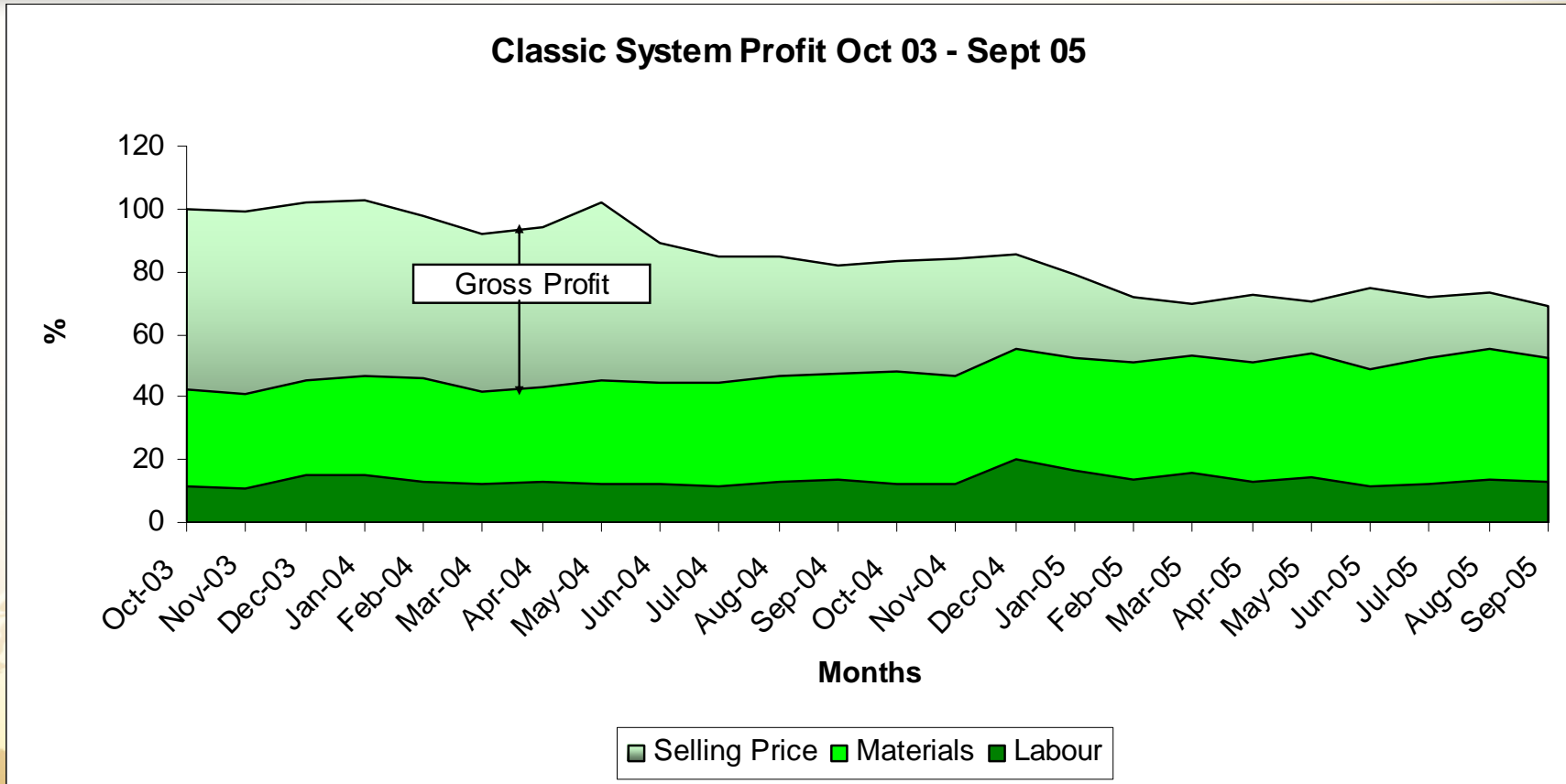


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Classic System Profitability



The graph used to communicate the need for change during annualised hours negotiations (Sep 05)

Formulation of an Operations Strategy : Introducing the Definition of The Lean Principles

1. Identify **Value** from the customer's perspective
2. Identify all the steps across the whole **Value Stream**
3. Make the product **Flow**
4. Respond to the **Pull** of the customer
5. Continuously improve in pursuit of **Perfection**



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Formulation of an Operations Strategy : Introducing the Definition of the 7 Wastes

- **Objective :**

To achieve a leaner future state, by reducing/eliminating the “7 wastes” and improving flow

“TIM WOOD”

- Transportation
- Inventory
- Motion
- Waiting
- Over production
- Over processing
- Defects



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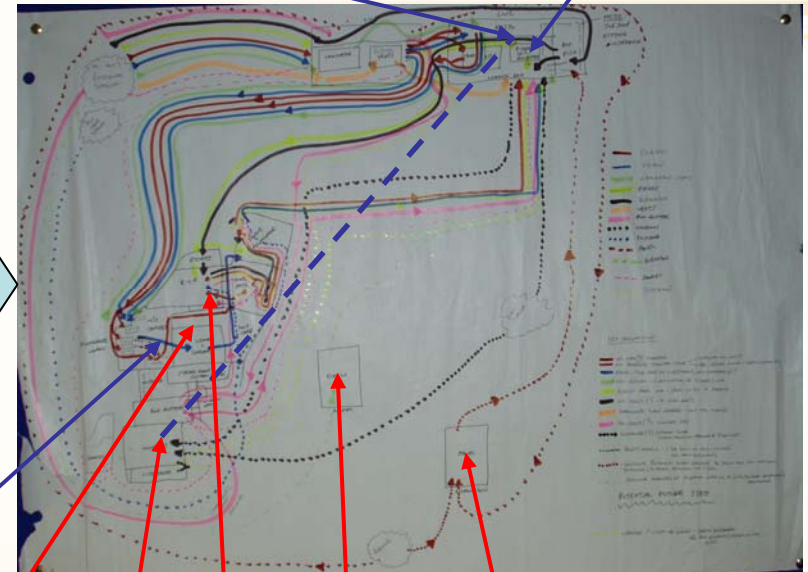
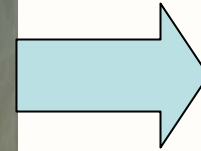
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Lean : Creating the Vision and starting the Journey

(“making the best of what we’ve got”)

Original State – May 2005

Future State Vision



Plastic Welding moved from EW to LW2

Improved LW2 Ridge Cell layout

2005 2006

Improved Uzone layout

Polycarb outsourced
Windows outsourced

“Lean Classic”

Elevation & UL500 consolidated into one unit
MAFF building sold

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Simple Business Strategy

- Fix the Business
 - Improve Customer Service
 - Stabilise the Customers
 - Control the Costs
- Redefine the Business
 - New products
 - More of the spend
 - New Areas
- Do it



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Developing the Vision Programme

Andy Crowe

Head of Product and Process Development



Background :

Prior to the Vision Programme

- Many good initiatives going on within the functional areas
- ‘Silo Mentality’ – disconnected
- Fighting for scarce business resources
- Leading to frustration as unrealistic timelines not being achieved
- Lack of understanding of the bigger picture and overall business priorities



The Start of the Journey

- We needed a fundamental change in the way we managed ourselves as a business
- The silo's had to come together and be cross functional
- There needs to be awareness of the 'bigger picture' to ensure alignment
- This is only achieved if it starts and is backed from the very top



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Vision Overview

- System of ongoing continuous process improvement focussed on Quality, Cost & Delivery by removing waste and improving flow of value.
- Split into manageable projects, with specific owners, defined benefits, plans and timescales (making improvement everybody's responsibility)
- Supporting changes to 'Culture' within the organisation – 'Creating and Maintaining a Momentum for Change' (consistency of purpose)

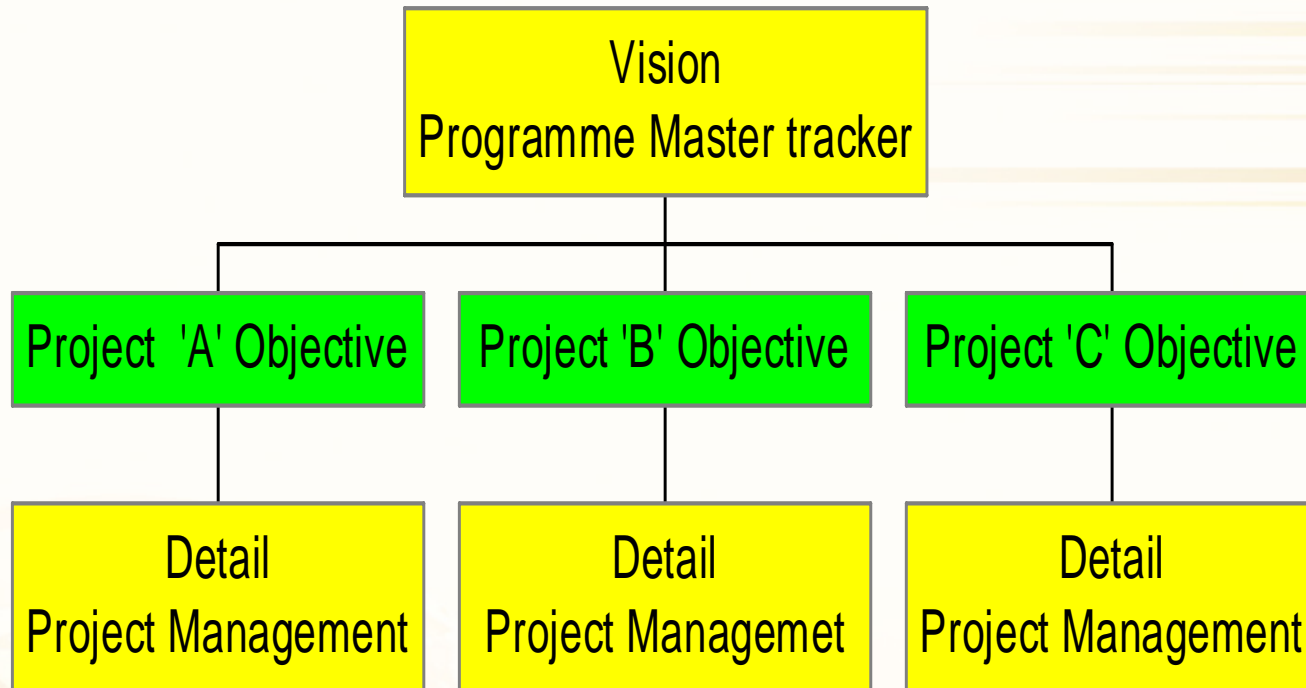


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Vision Programme Structure

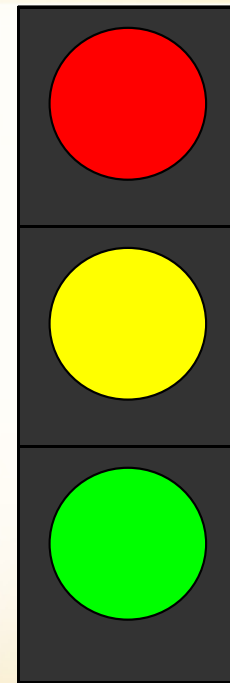


The Vision Programme Tracker


A simple spreadsheet that captures all projects and includes: -

- A brief description
- Value to business
- Costs
- Who
- When
- Issues & Risks

Visual Status



Project Objectives

		<h2 style="text-align: center;">Improvement Action Objective Sheet</h2>	
<p>Objective: <i>To review the current current process for the manufacture of</i></p> <p style="text-align: center;"><i>Classic roofs in the complete product stream and propose a</i></p> <p style="text-align: center;"><i>new process which will deliver benefits by removing waste.</i></p>			
<p>Team</p> <p>No: _____</p> <p>Action Owner: <i>Andy Crowe</i></p> <p>Team Leader: <i>Tony Smith</i></p> <p>Team Members: <i>John Potts</i></p> <p><i>Bill Campbell</i></p> <p><i>Nick Crossland</i></p> <p><i>Mike Cockayne</i></p> <p><i>Antony Musker</i></p> <p><i>Martin Lawson</i></p> <p><i>John Swift</i></p>		<p>Targets</p> <p>Indicator: <i>Productivity</i></p> <p>Definition: <i>Average roofs per person</i> <i>(calculation based on labour</i> <i>hours across process)</i></p> <p>Initial Situation: <i>1.6</i></p> <p>Date: <i>29/11/05</i></p> <p>Target: <i>2.1</i></p> <p>Date: <i>01/07/06</i></p>	
<p>Action Guidelines</p> <p>(Suggestions or advice for completing the project)</p> <p><i>The productivity measure is defined in Flatpack. It is important that we also have a measure for the wider process (internal picking, machine centre, MSD, Accumulator, Flatpack) and again average roofs per person.</i></p> <p><i>Emphasis is to be given to cellular manufacture.</i></p> <p><i>The above target is set for one month after complete implementation. This being 21 June 2006.</i></p> <p><i>Activity timing plan to be produced.</i></p> <p><i>Ensure good communication at all times.</i></p> <p><i>Look to achieve compression of leadtime</i></p>			
<p>Action Constraints</p> <p>(Mandatory instructions that must be adhered to)</p> <p><i>The machine centres are to remain in their current position</i></p> <p><i>The despatch department is to remain in its current position</i></p> <p><i>All other cells within the plant will remain in their current position</i></p> <p><i>Current state to be understood by Monday 16 January 06</i></p> <p><i>A Blueprint and a Capital proposal with cost benefit analysis to be in place by Monday 13 Feb 06</i></p> <p><i>Implementation to be complete by 21 June 2006</i></p>			
<p>Agreed</p> <p>Sponsor: <i>Andy Crowe</i> Project Leader: <i>Tony Smith</i></p> <p>Date: <i>13/02/06</i> Date: <i>13/02/06</i></p>			

The brief must have: -

- A clear objective
- Agreed targets / time lines
- Team members identified
- Action guidelines
- Action constraints
- Agreement from sponsor & owner



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Programme Management

- Integrate individual projects into one overall programme
- Manage the constraints/conflicts within the business
- Remove blockages/barriers to success
- Manage business resource and prioritise workload
- Provide support/guidance to Project Managers
- Maintain momentum by Communicating progress updates to all areas of the business using team briefs, bragging boards etc
- Regular reviews and link projects to budgets to Drive through the realisation of benefits

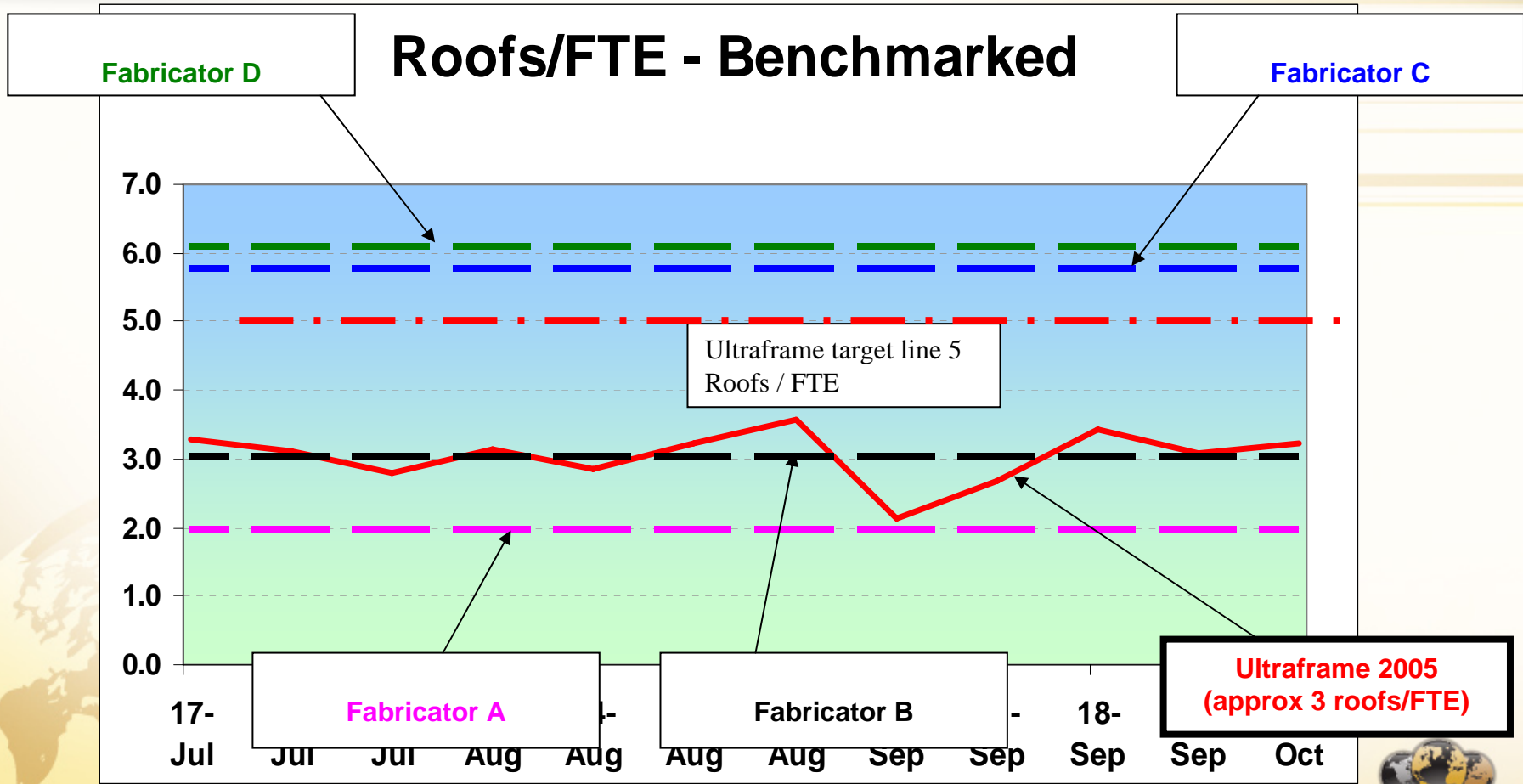


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Manufacturing Productivity Comparison



**Ultraframe 2005
(approx 3 roofs/FTE)**

Project Scope

- To review the current Classic Roof manufacturing process and propose changes that will deliver tangible benefits by removing waste
- Target = 5 roofs per FTE
- The project was to be known as 'Lean Classic'



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Tony Smith

Project Manager

‘The First Breakthrough Project’

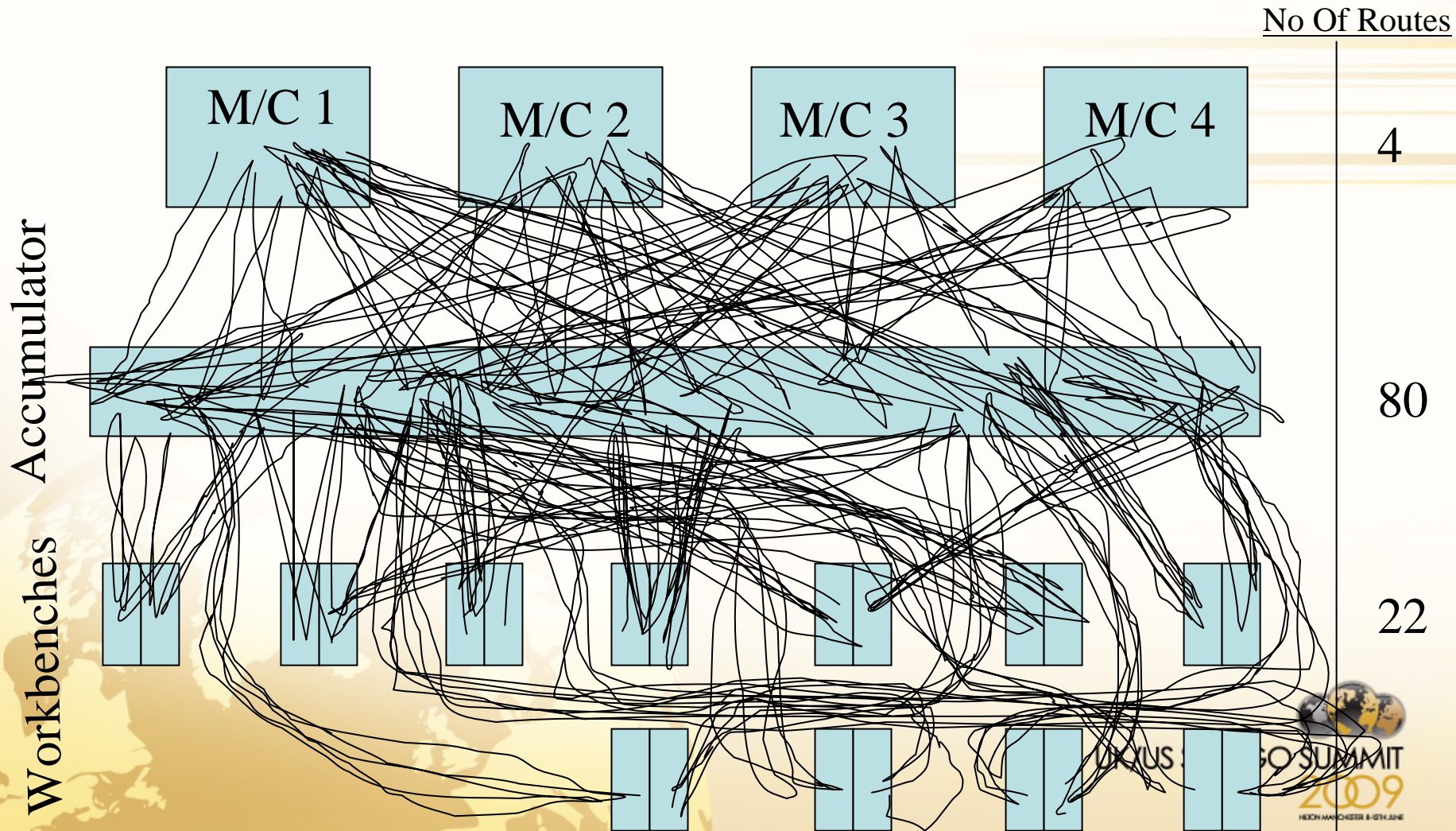


A Need For Change

- Difficult & competitive market.
- The need to secure long term future of Ultraframe.
- Increase customer added value:-
 - Reduce lead time if required.
 - Reduce handling damage.
 - Improve right first time.
 - Increase productivity.
- Increased customer value = increased sales.
- Increase manufacturing capacity.



The Beginning



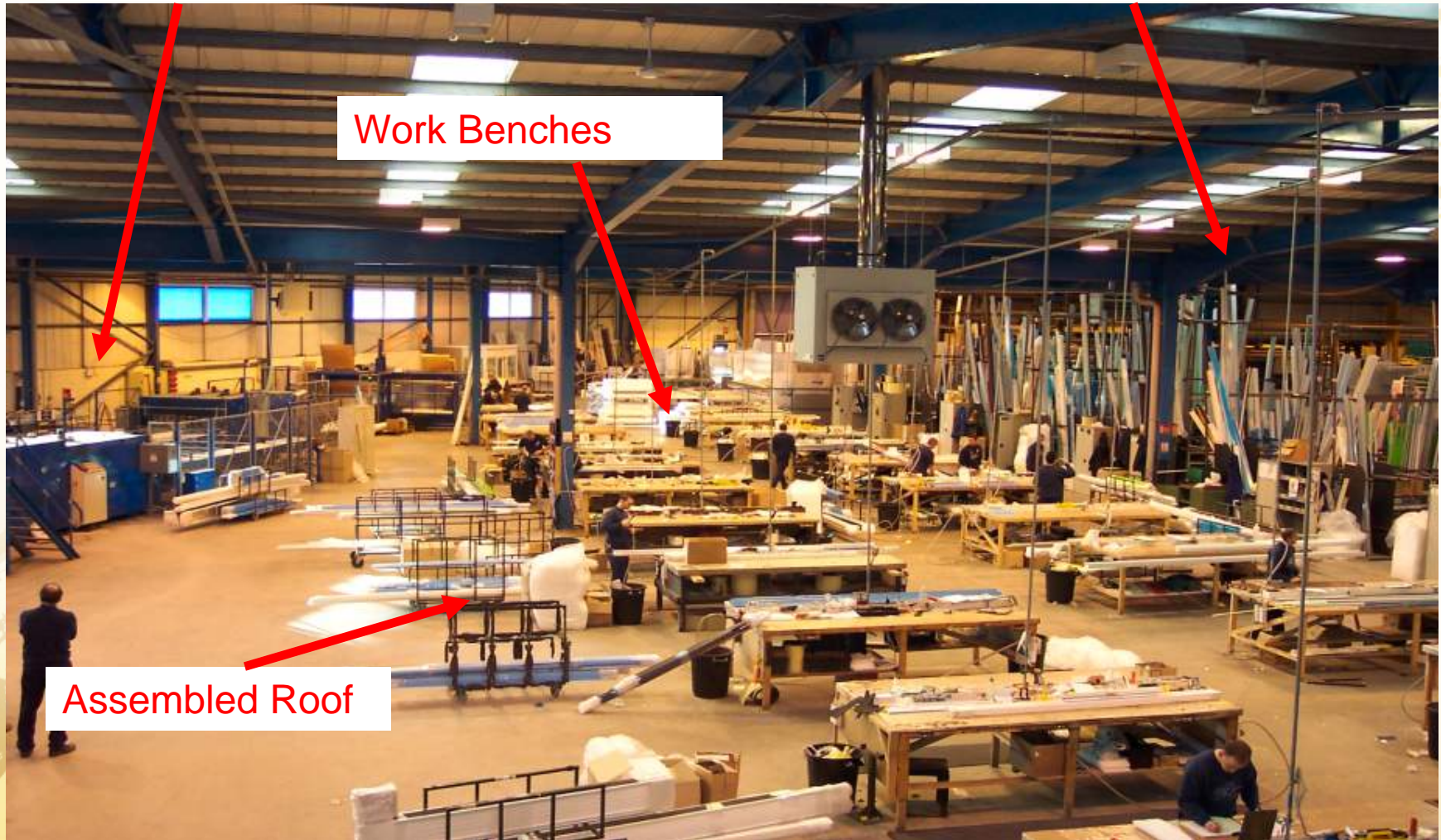
The Beginning

Shrink Wrap Line

Accumulator

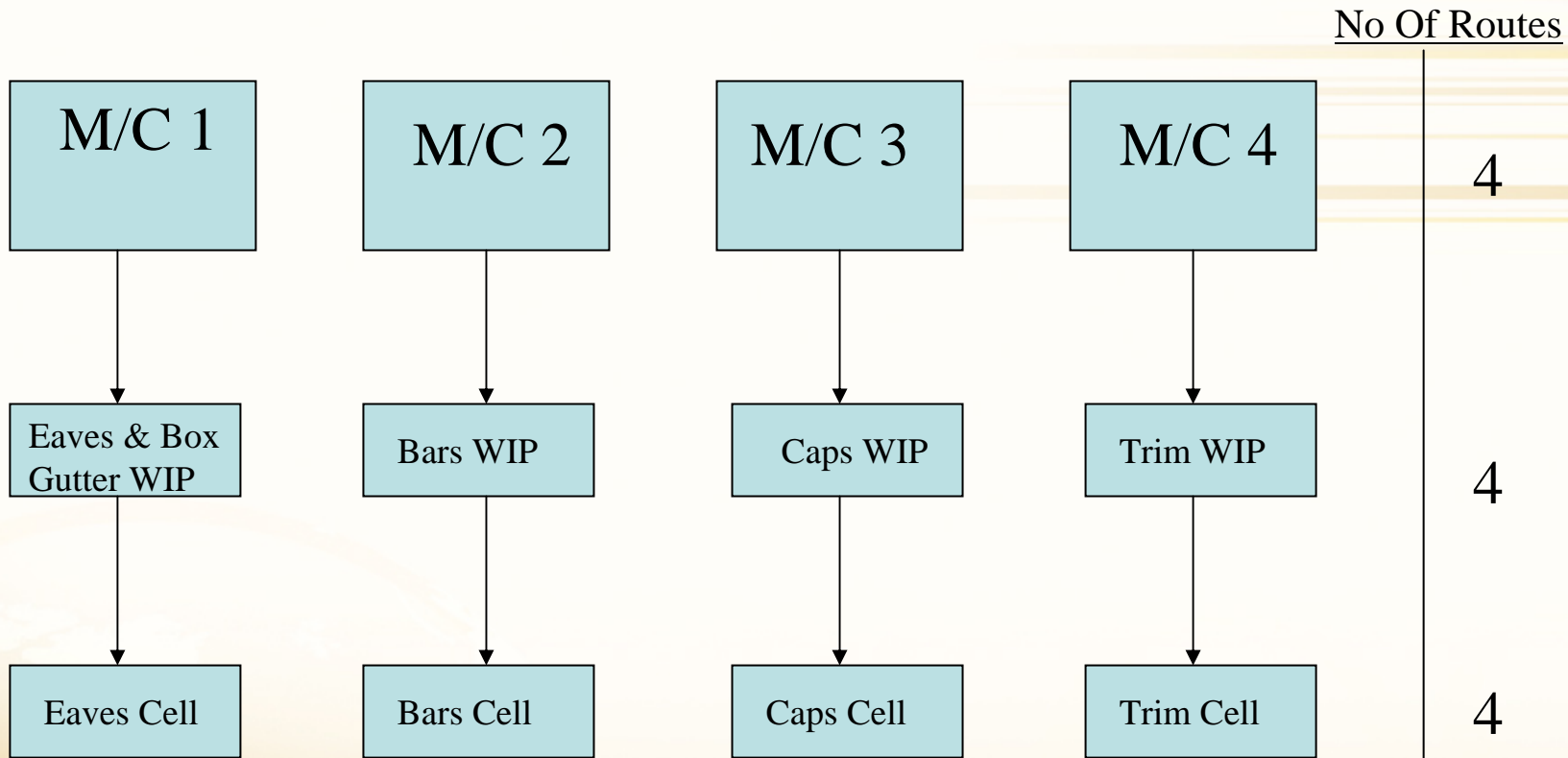
Work Benches

Assembled Roof



The Vision

Workbenches



The Approach...

- Big picture map created to identify the wastes.
- Future state created to show the vision.
- Feedback presentation to key stakeholders.
- Detailed process activity mapping.
- Detailed factory layouts, dwgs & specs
- Detailed timing & launch plans.
- Phased introductions & risk minimisation.
- Detailed budget & tracking.
- Core team & regular reviews.



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The Challenges ...

- Technical
 - All IT systems affected
 - CAD, order system, manuf tracking, wms
- Cultural
 - 20 years of status quo
 - Trade/craft environment
 - Fear of job losses
 - Cynicism of “automotive methods”
- Operational
 - Major milestones during peak season
 - Civils work in a manufacturing area
 - IT on the critical path



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A Key Decision : Removal of the Shrink Wrap Line

The EDL (Shrink Wrap Line)



Features: -

Process bottleneck.

Delays.

Complete roofs only.

High energy cost.

High material cost.

High maintenance costs.

Poor visual appearance of packed product.

Prevented the use of bar codes.



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A Key Decision : Removal of the Shrink Wrap Line

The Change Curve

- Shock/Denial



- Resistance



- Acceptance



- Growth

- “We’re going back to the dark ages !”
- “We’ll be slower not faster !”
- “I’m leaving !”
- “They’re making fools of us !”
- “Can we have rollers to help?”
- “Can we have more space between the benches?”
- “We should sleeve that as wellit looks much better”.

Time

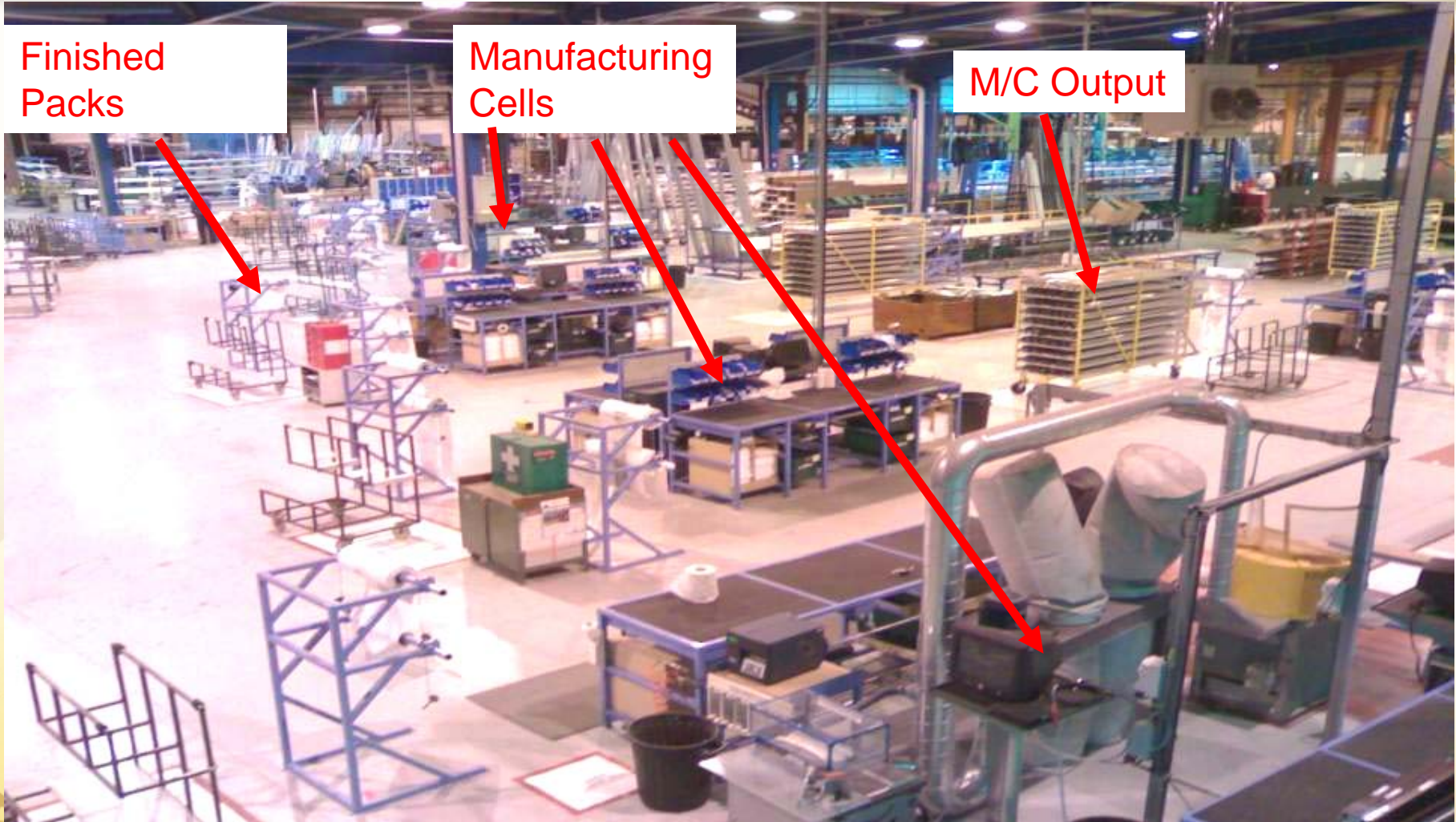


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Today



Finished
Packs

Manufacturing
Cells

M/C Output

The Shift in Manufacturing

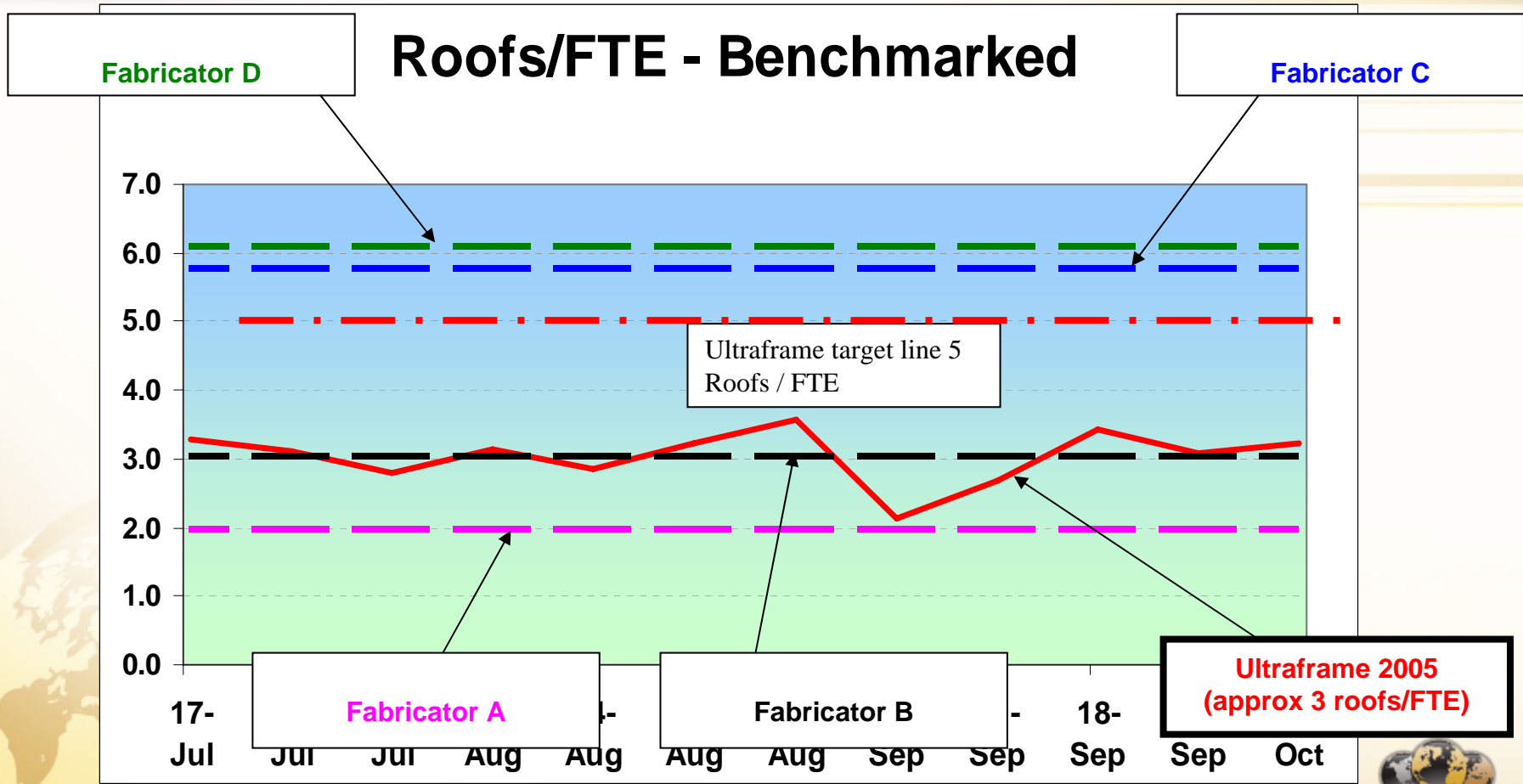
- One man/one roof → Cellular manufacture
- Paper work sheets → On screen work instructions
- Assemble & pass on → Finish in cell
- Stock buffering & overproduction → JIT machine centre delivery into cells
- Manual amendments & interpretation → Fully specified work instructions
- Labour intensive manufacturing operations → Operations undertaken up stream with suppliers & m/c
- Excessive walking & carrying → Product delivered into cells

The Improvements

- WIP reduced from 24 hrs to less than 8 hrs.
- Process routes now 64 was 7040.
- Internal supplier quality performance into flatpack improved from 14 % to 6%.
- Capacity increased from 49 to 65 roofs (8 hr shift).
- Traceability – Full electronic traceability of packs & contents.
- Environmental – removal of EDL line contributed to winning the Energy Efficiency Award (LBEA).
- Manual Amendments reduced from 14% to 2 %.
- Health & Safety – reduced handling, reduced pack weights, reduced manual ops (grinding drilling etc).
- Productivity improved across value stream from 3.2 to above 5 roofs/man/week along the value stream.

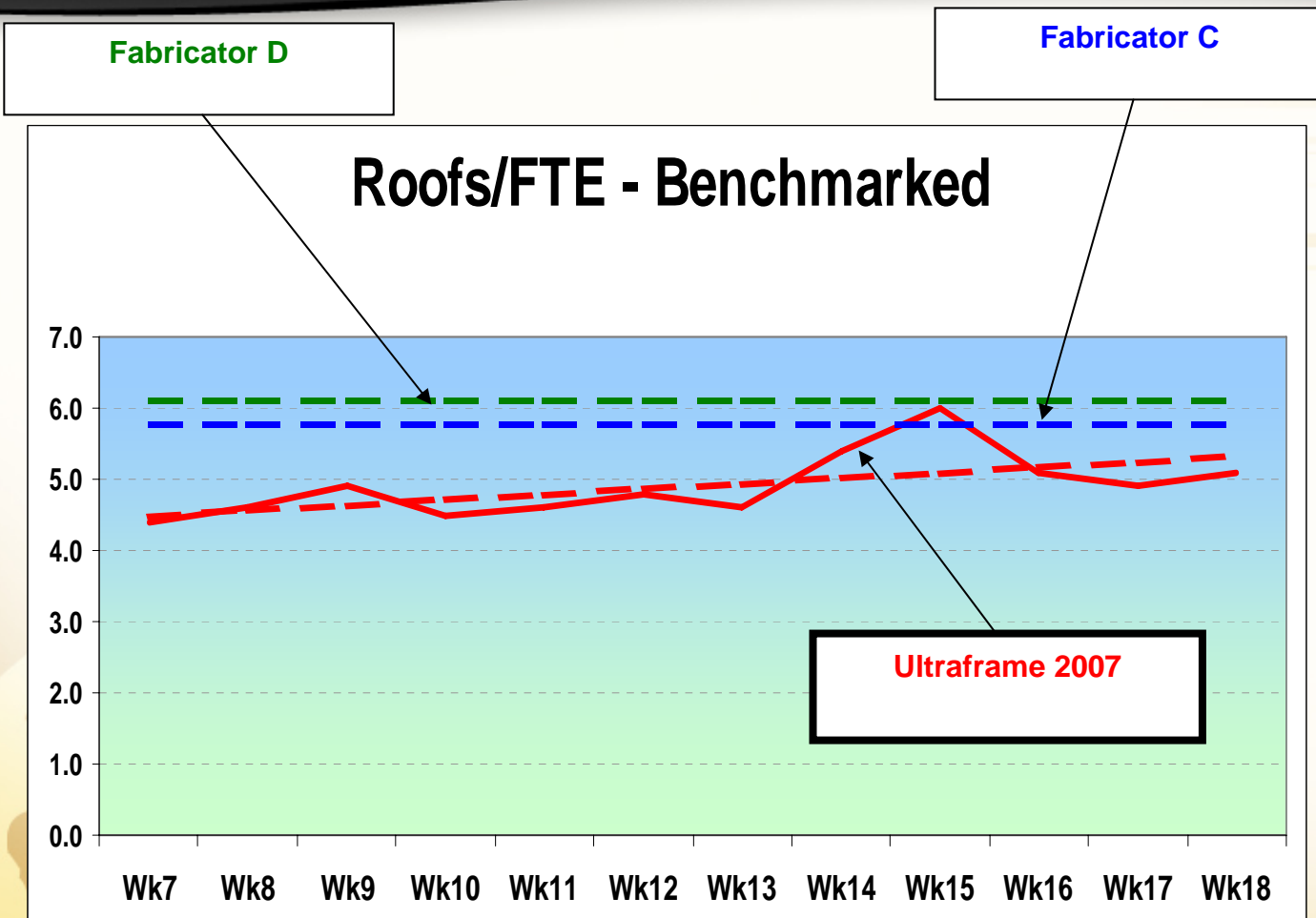


Manufacturing Productivity Comparison



Ultraframe 2005 (approx 3 roofs/FTE)

Lean Classic - The Results



Showing continued improvement in productivity. Fabricators "A" and "B" no longer in business !

Lessons Learned

- Spend enough time in the detail & planning.
- Challenge perceived knowledge. Get the facts!
- Make a significant change as soon as possible.
- Identify the critical path and review regularly.
- Plan in key milestones & reviews.
- Phase/Step introductions (smooth the transition).
- Be opened minded but don't loose sight of the objectives.
- Be flexible – circumstances change throughout a project.
- Maintain your integrity – you will be challenged!
- Be aware !
 - A small percentage will resist all the way!
 - Have a strategy to deal with the dementors!
 - Core teams require the pro-active & positive!



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Video

- Lean Classic from the Operator's Perspective



After the Culture breakthrough

- A Product & Process Breakthrough

The conditions were right to make changes to our core product and core computer aided manufacturing package.

- We had improved our core flat pack manufacturing area however we still had a need to pre build a full roof on 20% of our throughput



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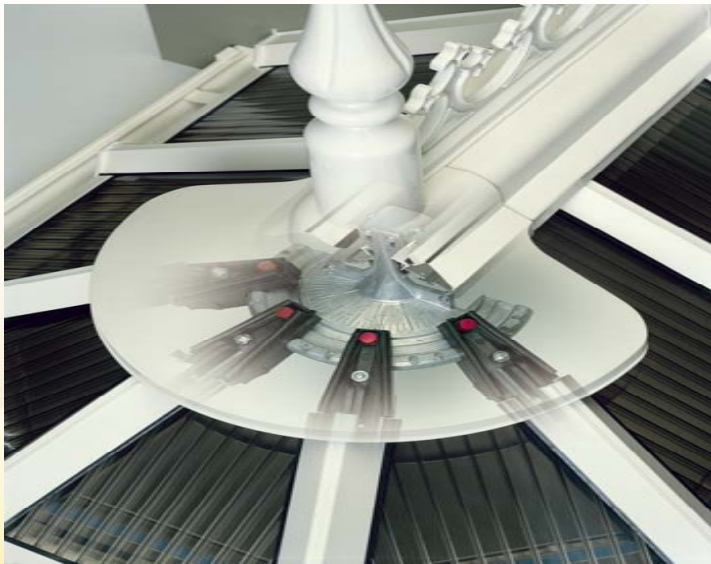
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Project Springboard

A project that delivered: -

A new highly configurable product with a brand new CAM package



Old product



New product

Springboard Delivers

- Higher quality engineering.
- Quicker installation times on site.
- Throughput times reduced in the plant maximising the flat pack process (now averaging 92%).
- An excellent platform for future Process and Product Development.



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Financial Impact of Vision programmes (to date)

The cumulative financial benefits of the vision (lean) projects to date are in excess of £6m:

- Vision projects £4.2m
- Supply chain cost reductions £2.6m



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The Vision Programme Today

The programme was initially a top down approach

Early quick wins demonstrate commitment to the improvement programme

This has now changed as 'Vision' has become a way of life at Ultraframe with a rolling programme of Improvement activities

The programme has an identity that means something to everyone and there is an expectation and the necessity today for change



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Best Engineering Plant 2007



- Entered for benchmarking feedback
- One of the top four awards :
 - Best Engineering Plant : Ultraframe (UK)
 - Best Process Plant : Reckitt Benckiser Healthcare (UK)
 - Best Household & General Products Plant : Coca-Cola Enterprises
 - Best Electronics & Electrical Plant : Selex Sensors & Airborne Systems

Ensuring the momentum is maintained : “you can’t be a prophet in your own land !”

“Collecting a trophy in the Best Factory Awards isn’t a destination, it’s a point on the journey; a time to take stock of how far you’ve come and to celebrate that achievement”

Chris Rowlands
Editor, Works Management (2007)
Best Factory Awards Judge (2007)

Best Factory Benchmarking Report :

- Highlights areas of strong performance and potential areas for improvement
- “Gap analysis” to identify areas we can further improve – action plan
- “Learn from the best” – exchange visits to other BFA winners to see how they have improved their plants
- 2 years on, most of the gaps have now been closed !



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2009 – Shingo Prize Challenge

- Next stage of Benchmarking
- By going through the process we have ensured that : -
 - The whole organisation is involved
 - We understand our Strengths
 - We understand our Opportunities
 - We take time out to recognise and celebrate our achievements
 - Everyone wants to continue pushing our vision forward by using the feedback to help inform and develop our plans
- Achievements recognised by award of Bronze Medallion
- By acting on the feedback we hope to progress to Silver Medallion level in the next two years

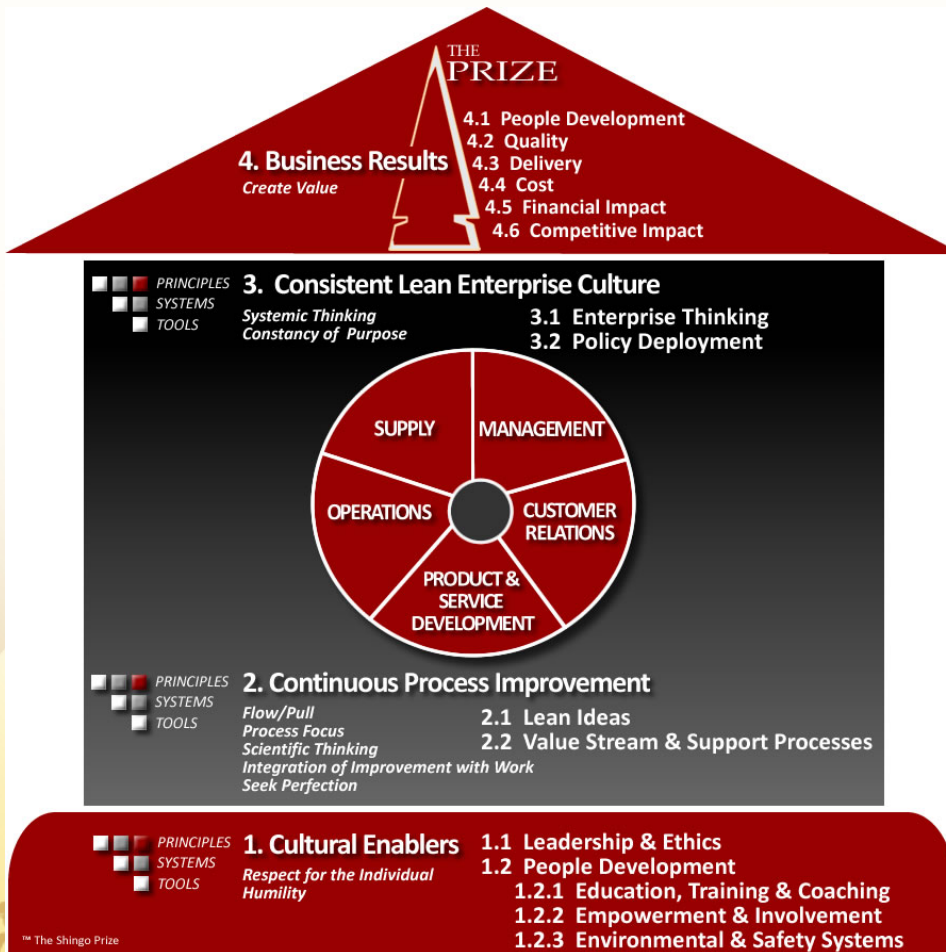


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The Shingo Model



- An excellent framework to assess your level of lean transformation
- Can you demonstrate evidence of the principles, systems and tools in your business ?
- Good Luck on your Journey !

Thanks for listening !

Any questions ?

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