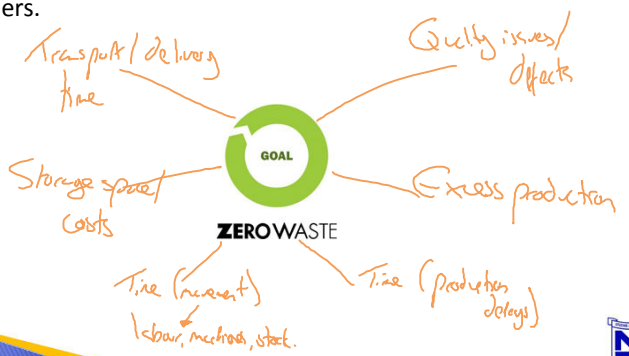
Lean Production at TOYOTA

*An approach to organising operations that aims to achieve **high quality** and **competitive prices** by using all its **resources efficiently** (minimising wastage of time, space, capital, people and materials).*

- ✓ Customer-led (pull) production
- ✓ Just-in-Time (JIT) stock control – no stockpiling
- ✓ Production flexibility
- ✓ Culture of respect for employees, suppliers and customers
- ✓ Built-in quality (Jakota) - right first time
- ✓ Continuous improvement and waste elimination (Kaizen)
- ✓ Teamwork and quality circles

Quality output, fewer resources

Lean involves increasing efficiency by cutting waste – anything that adds complexity, cost, time and does not add value for the customers.



Kaizen – Reducing Waste

2 teams – division of labour?!

'Cram' as much information as you can for your 'true or false' iPad race quiz.

1. Simultaneous engineering
2. Cell production
3. Just-in-Time stock control
4. Continuous improvement
5. Flexible specialisms

Simultaneous Engineering

An approach to project management that helps firms develop and launch new products more quickly.
All parts of the project are planned together. Everything is considered simultaneously (together, in parallel) rather than separately (in series)

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Simultaneous Engineering Benefits

- New product is brought to the market much more quickly
- Business may be able to charge a premium price that will give a better profit margin and help recoup R&D costs
- Less likelihood of a need to modify the product later due to unforeseen problems
- A greater sense of involvement across business functions improves staff commitment to the project
- Can be a source of competitive advantage ('first mover advantage') for the firm if it can get a reliable new product into the market and build brand loyalty before its competitors

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Cell Production

A form of team working where production processes are split into cells. Each cell is responsible for a complete unit of work

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Cell Production Benefits

- Closeness of cell members should improve communication
- Workers become multi-skilled and more adaptable to the needs of the business
- Greater employee motivation, from variety of work, team working and responsibility
- Quality improvements as each cell has 'ownership' for quality on its area

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Cell Production Drawbacks

- Culture has to embrace trust & participation or workers can feel they are being pushed for greater output with no respite
- Business may have to invest in new materials handling and ordering systems suitable for cell production
- Cell production may not allow a firm to use its machinery as intensively as in traditional flow production
- Some small scale production lines may not yield enough savings to make a switch cell production worthwhile
- Allocation of work to cells has to be efficient so that employees have enough work, but not so much that they are unable to cope
- Recruitment and training of staff must support this approach to production

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Just In Time

Just-in-time ("JIT") aims to ensure that inputs into the production process only arrive when they are needed

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Just In Time

- Based on a "pull" system of production - customer orders determine what is produced
- Requires complex production scheduling - achieved using specialist software to connect production dept with suppliers
- Supplies delivered to production line only when needed
- Requires close cooperation with high-quality suppliers

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Evaluating JIT

Advantages	Disadvantages
Lower stock holding means a reduction in storage space which saves rent and insurance costs	There is little room for mistakes as minimal stock is kept for re-working faulty product
As stock is only obtained when it is needed, less working capital is tied up in stock	Production is highly reliant on suppliers and if stock is not delivered on time, the whole production schedule can be delayed
Less likelihood of stock perishing, becoming obsolete or out of date	There is no spare finished product available to meet unexpected orders, because all product is made to meet actual orders
Less time spent on checking and re-working production as the emphasis is on getting the work right first time	A need for complex, specialist stock systems

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Kaizen

Kaizen (or 'continuous improvement') is an approach of constantly introducing small incremental changes in a business in order to improve quality and/or efficiency

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Kaizen

- Leaner production is based on making many small changes
- As the ideas come from employees, they are less likely to be radically different and probably easier to implement
- Small improvements are less likely to require major capital investment than major process changes
- The culture - all employees should continually look for ways to improve their own performance
- Kaizen encourages employees to take ownership for their work = can help reinforce team working and improve motivation

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Evaluating Lean Production

Advantages	Disadvantages
• Reduced costs • Higher profits • Motivation • New products launched quickly • Less risk of damage/theft/obsolescence of stock	• Expensive to implement • Training • Change management and culture • Not suitable for all businesses (irregular demand, excuse for redundancy, small businesses)