Digital Transformation in Manufacturing Sector

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Flow – Order to cash

CRM Website, B2B, B2C

Sales Order Process (SOP)

} FlowLens

Production

Warehouse

} ShopFloorLive

WIP

Lead-Time

Order To Cash
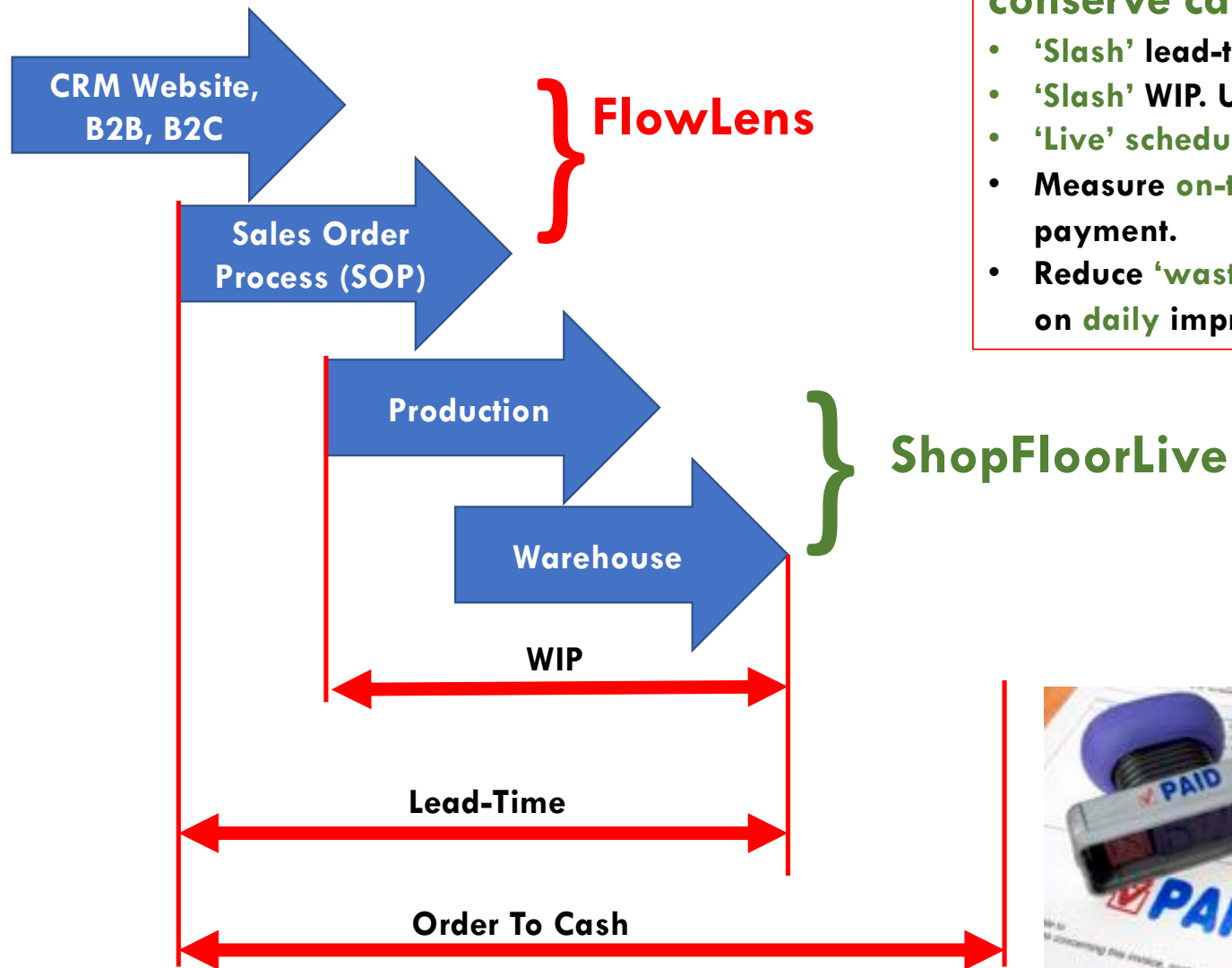
This presentation will cover; how to conserve cash:

- 'Slash' lead-times days, not weeks.
- 'Slash' WIP. Use 'Pull' not 'Push' for production.
- 'Live' schedule. Focus on 'today' by WorkCentre.
- Measure on-time in full deliveries- No excuse on payment.
- Reduce 'waste', last resort add people. Intense focus on daily improvements.

Reducing WIP Example :-
Sales £50k/week.
4 wks Lead-time WIP £160k (80%)
2 wks Lead-time WIP £80k.
1 wk Lead-time WIP £40k.

PAID
PAID

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CNC Machine 1

Apr 13 – 17, 2020

month | week | day

Mon 4/13	Tue 4/14	Wed 4/15	Thu 4/16	Fri 4/17
*10000-1*Part 1*6* MO- 6	*10001-1*Part 1*7* MO- 7	*10005-1*Part 1*11* MO- 11	**JOB SUSPENDED***38*Part 1*	*10002-1*Part 1*8* MO- 8
*10004-1*Part 1*10* MO- 10	*10015-1*Part 1*21* MO- 21	*10007-1*Part 1*13* MO- 13	*10003-1*Part 1*9* MO- 9	*10009-1*Part 1*15* MO- 15
*10006-1*Part 1*12* MO- 12	*10030-1*Part 1*36* MO- 36	*10013-1*Part 1*19* MO- 19	*10008-1*Part 1*14* MO- 14	*10016-1*Part 1*22* MO- 22
*10012-1*Part 1*18* MO- 18	*10033-1*Part 1*39* MO- 39	*10017-1*Part 1*23* MO- 23	*10010-1*Part 1*16* MO- 16	*10020-1*Part 1*26* MO- 26
*10014-1*Part 1*20* MO- 20	*10037-1*Part 1*43* MO- 43	*10018-1*Part 1*24* MO- 24	*10011-1*Part 1*17* MO- 17	*10024-1*Part 1*30* MO- 30
*10019-1*Part 1*25* MO- 25	*10039-1*Part 1*45* MO- 45	*10026-1*Part 1*32* MO- 32	*10023-1*Part 1*29* MO- 29	*10025-1*Part 1*31* MO- 31
*10021-1*Part 1*27* MO- 27		*10036-1*Part 1*42* MO- 42	*10028-1*Part 1*34* MO- 34	
*10022-1*Part 1*28* MO- 28			*10029-1*Part 1*35* MO- 35	
*10027-1*Part 1*33* MO- 33			*10034-1*Part 1*40* MO- 40	
*10031-1*Part 1*37* MO- 37			*10035-1*Part 1*41* MO- 41	

- **Critical link between orders and the Shop-floor providing one 'Live' schedule.**

- **Real-time information reducing 'waste' in movement, rejects and skills**

- **Scheduling of delivery dates happens instantaneously across the factory**

- **Reporting & Dashboards provides live analysis to assist Kaizen projects**

- **It engages at all levels of the business and KPI's show 'live' results.**

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Recent case study

Before implementing production system :

- Long established manufacturing company approx. 30 people.

- Challenges with <u>on-time delivery</u>, <u>excessive overtime and reducing margins</u>.

- Struggling to find a system which '<u>worked</u>' for their business.

Integer Sum

Qty

completed_date

February 2020   On Time Delivery   Standard Lead-Time 2 weeks

delivery_month

del_date

Ship Date → completed_date ←

Request Date

Late

Early

delivery_month	del_date	2020-01-31	2020-02-03	2020-02-04	2020-02-05	2020-02-06	2020-02-07	2020-02-10	2020-02-11	2020-02-12	2020-02-13	2020-02-14	2020-02-16	2020-02-17	2020-02-18	2020-02-19	2020-02-20	2020-02-21	2020-02-24	2020-02-25	2020-02-26	2020-02-27	2020-02-28	2020-03-02
2020-02	2020-02-03		35	193	91	18																		
	2020-02-04			41	61		1			75														
	2020-02-05		42	195	31	405	35																	
	2020-02-06	70	50		7	154																		
	2020-02-07				66		92	30		206														
	2020-02-10				68		105	22	78			5												
	2020-02-11					52		15	186															
	2020-02-12							298	107	5							34		12					
	2020-02-13									45	40			60										
	2020-02-14									10	34	13	4											
	2020-02-17									2				128	161	7	2							
	2020-02-18									60	20	152		8	27					181				
	2020-02-19										100			20	8	238		29		5				
	2020-02-20														20	6	249		2			10		
	2020-02-21															6	76		200					
	2020-02-24																10	78	26	92				2
	2020-02-25																		7	8		49		
	2020-02-26																	2		6	26	17		
	2020-02-27																					97	87	3
	2020-02-28																				60		172	31
	Totals	70	127	429	324	629	232	366	371	401	202	170	6	208	197	278	291	117	92	425	186	184	308	36

Before:

Batch production. Space constraints high WIP

Poor workspace design, Lack of flow,

Lack of a clear schedule. Working on different orders.

Using higher spec materials. Caused by rushed jobs.

Damage product due to high WIP.

Built extra 'stock' to increase batch size. More WIP

Making ahead to meet individual KPI

Transport

Movement

Waiting

Over-Processing

Defects

Inventory

Over-Production

Waste £££££

Journey:

Reduced WIP _single piece flow_ in production.

Improved communications, _right work, right place._

'Live' production schedule -ShopFloorLive.

Produce to _today's schedule._ Focus on the _constraint_

Highly visible, _'Pull'_ system identifies _slow movers._

Low WIP, quick response.

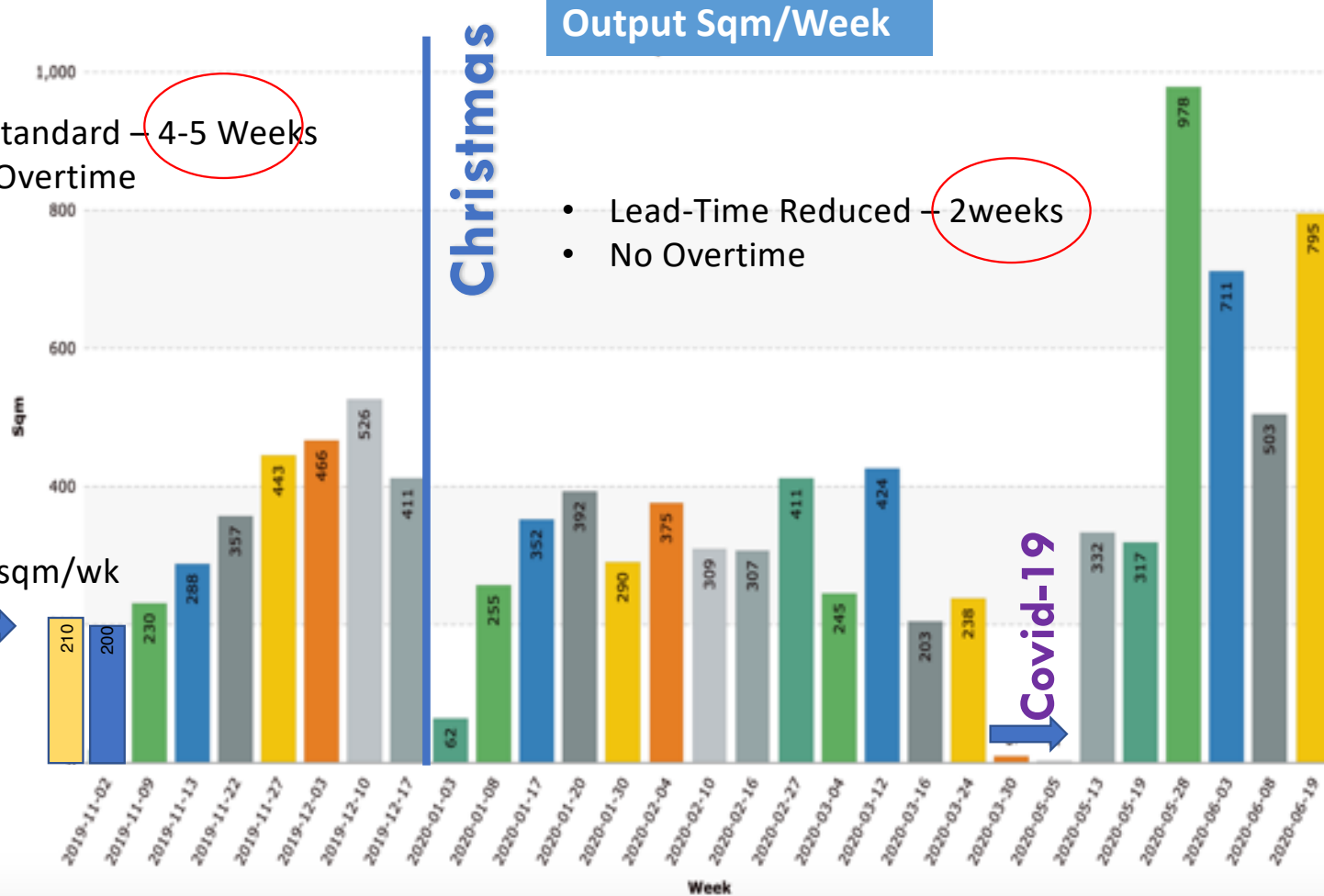Main KPI customer _delivery date._

Transport · Movement · Waiting · Over-Processing · Defects · Inventory · Over-Production

Savings £££££££

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Customer Results

Before production system:
- Lead-time 4-5wks.
- Output 250sqm/week
- Continuous overtime
- 60% on time.

After production system:
- Halved lead-time 2 weeks.
- Output increased by 75%++
- Managed overtime
- Initial savings ~£350k/year.

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Don't Automate Waste

1. Get the business process right.
2. Reduce the waste.
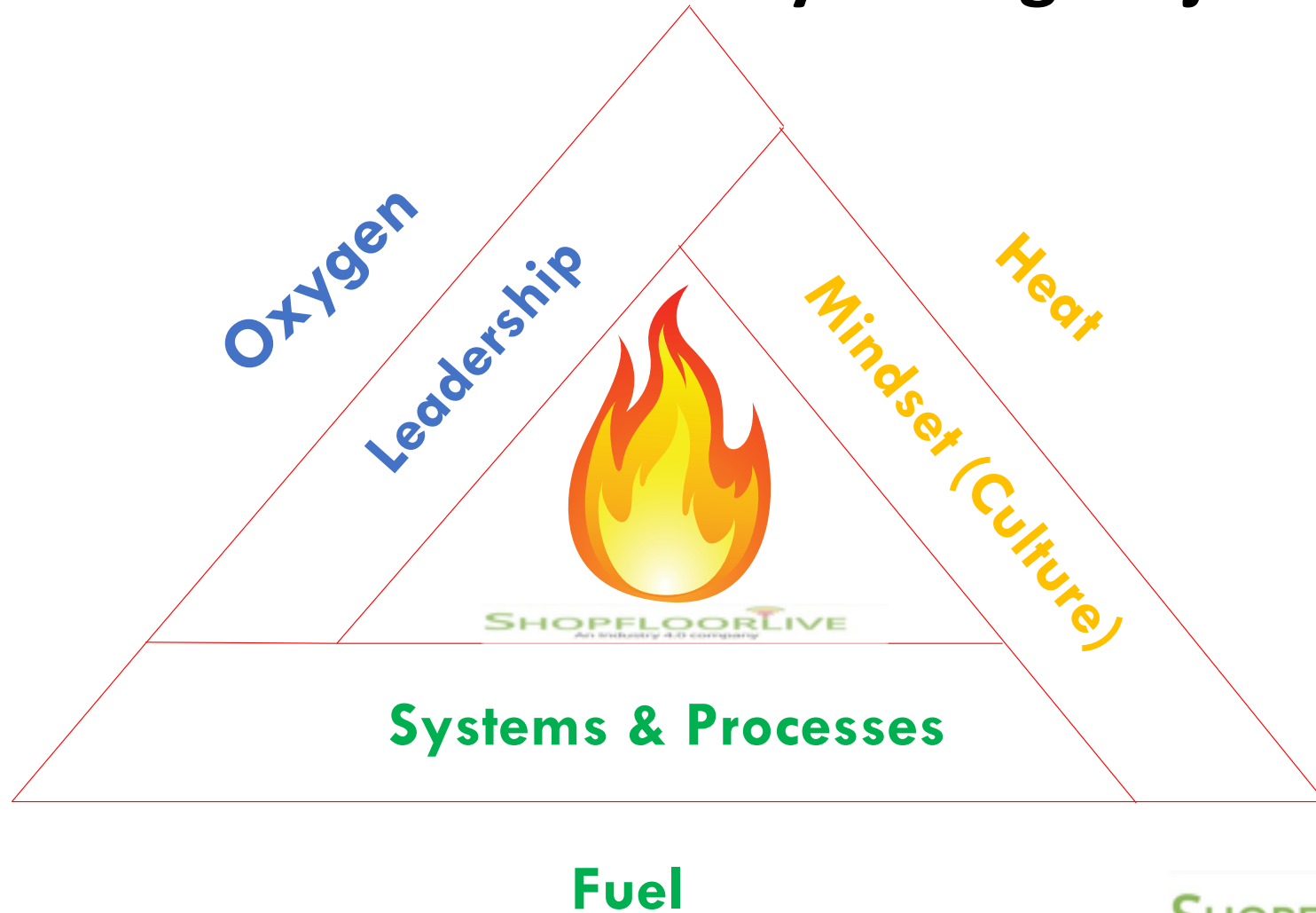3. Provide the right information using the right systems.

2- Lean

3-Systems

1 - Business process

"A Bad Process Will Beat Any System"

From this case study, they found success by:

- ✓ Highly **committed leadership** team
- ✓ Support from **Operational Excellence Team** at investNI
- ✓ **ShopFloorLive** – 'Live' production system

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What it takes for success on your digital journey

2.0 Manufacturing Systems

What Type Of Business Are You In?

Distribution company

Are you making money?

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Profit Margins - % response
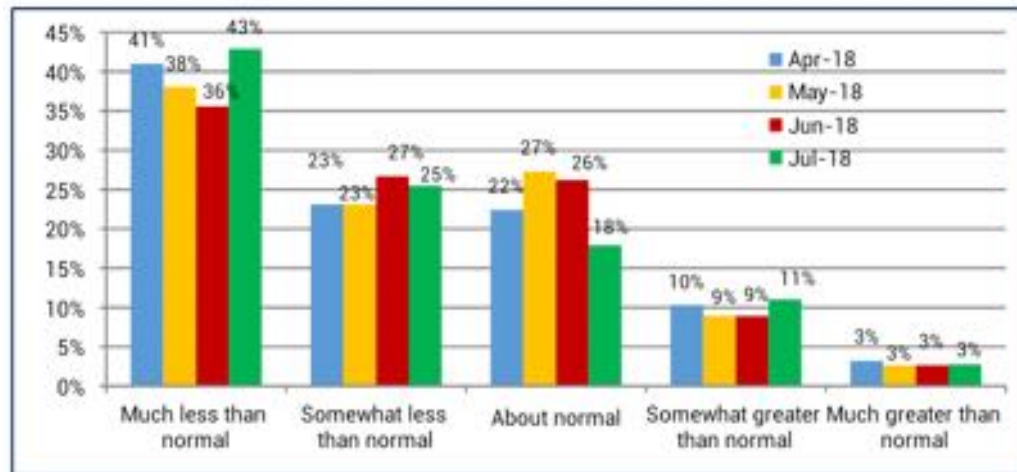
- **What you buy is what you sell….**

- **Ability to perform analysis and data-cost vs sell etc..**

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Manufacturing company

Are you making money on this product or customer or order?
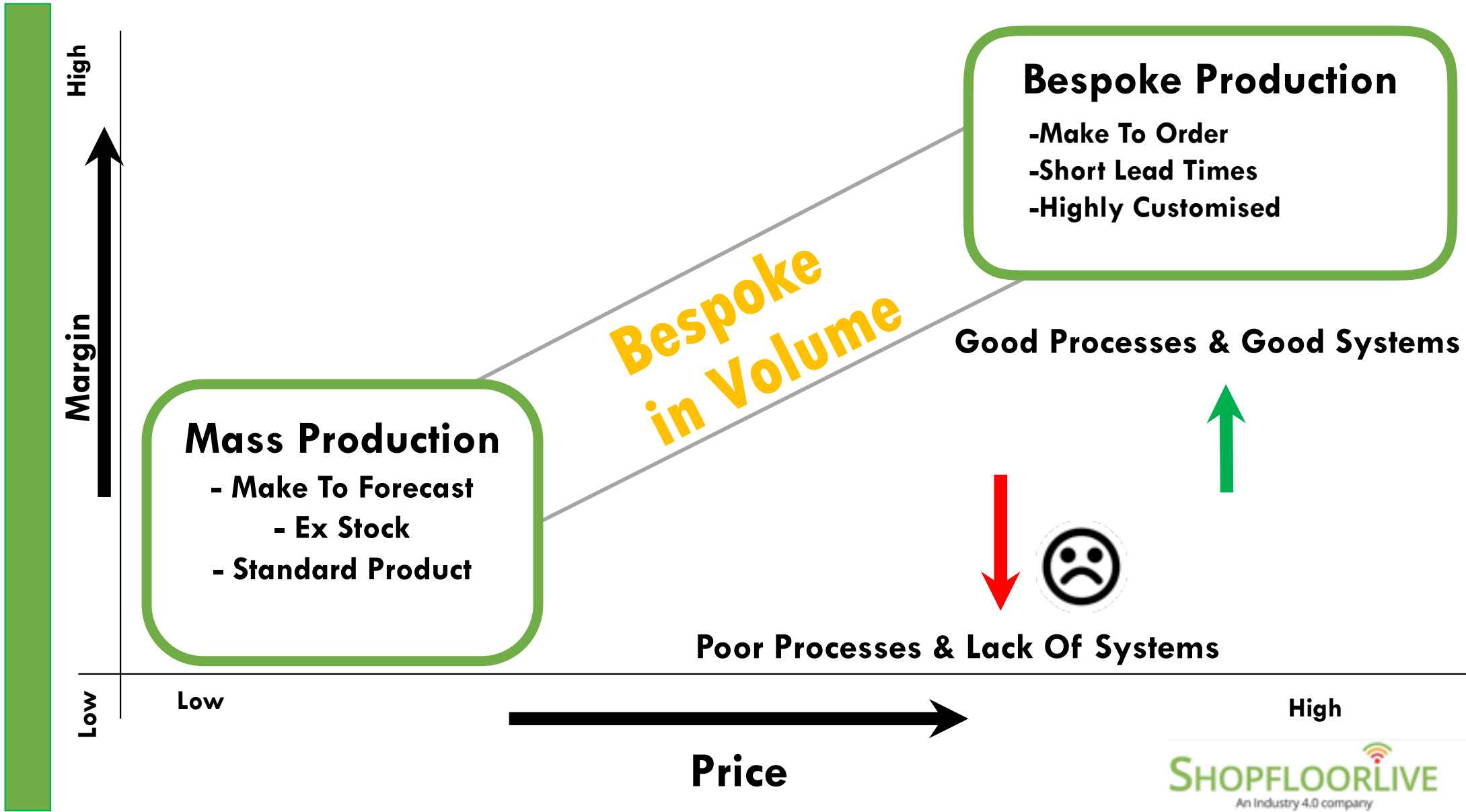
Background

1970	**MRP Materials Planning**
1980	**MRP II Entire Mfg Process**
1990	**ERP System wide integration**
2000	**ERPII System wide integration**
2020	**Network Of SaaS real-time Operations**
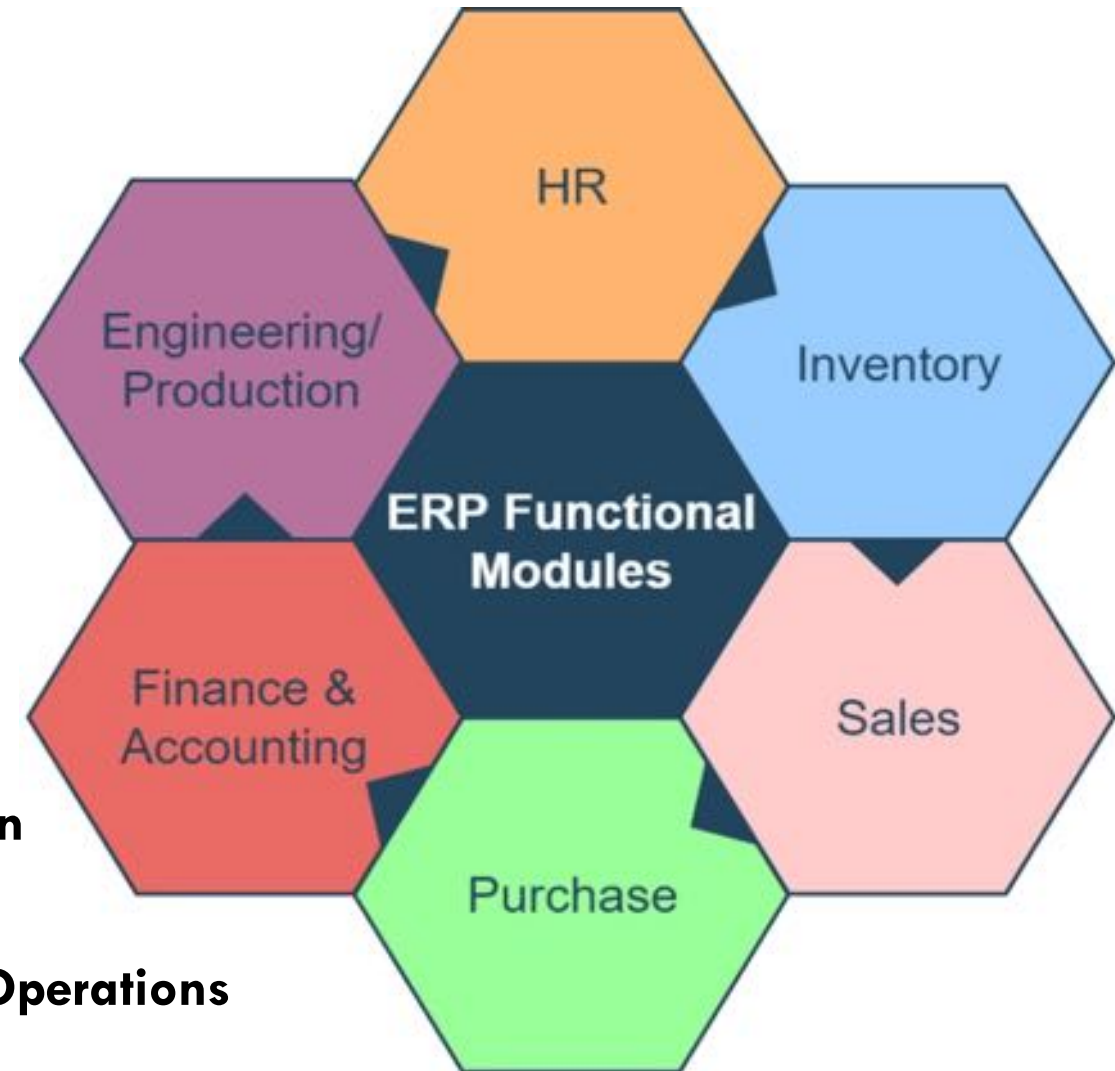
ERP Functional Modules

- HR
- Inventory
- Engineering/Production
- Finance & Accounting
- Purchase
- Sales

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Sales/Marketing

CRM

Warehouse

Warehouse Operation

Human Resources

✓ **De-risk** implementation.

✓ Implement at **your** pace.

✓ Make sure it **'fits'** your business

INDUSTRY **4.0**

Best In Class System

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Production

Engineering

Accounts

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Summary

- Beware of the 'one' system to fix your business. - RISK

- Don't automate 'waste', your margin is in your waste. - ££

- It's not an IT project, it's the 'heartbeat' of your business

Don't Automate Waste

1. Get the business process right.
2. Reduce the waste.
3. Provide the right information using the right systems.

2- Lean

3-Systems

1 - Business process

"A Bad Process Will Beat Any System"

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Thank you

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